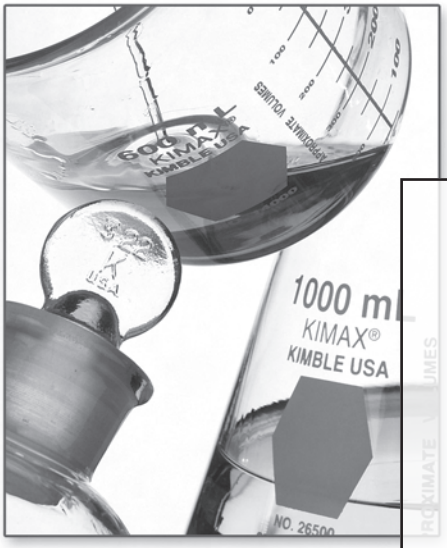


KIMBLE CHASE

Your Source for Kimble, Kontes and Chase Brands

888-546-2531
www.kimble-chase.com
info@kimble-chase.com

2008-2009 Catalog







WELCOME . . .

To the Kimble Chase 2008 / 2009 catalog!

Your Source for Kimble, Kontes and Chase Brands

We've Put It Together to Better Serve Our Customers

Kimble, Kontes and Chase Scientific have joined to become your global resource for scientific laboratory glassware. Our wide selection of quality products for chemistry, life sciences, chromatography, environmental science and education are now manufactured in seven, strategically located facilities in order to bring you the best possible products and services.

Give us a call or visit our web site to access Kimble and Chase disposable and reusable laboratory glassware or Kontes specialty glassware products.

Our Guarantee
Kimble Chase will promptly replace any product found to be defective or not in conformance with published specifications.

KIMBLE CHASE

Order through your authorized Kimble Chase distributor. See our web site or contact us for our current list of distributors.

Call:
1-888-546-2531 Ext. 1 (toll-free)
(+1)856-692-8500 Ext. 1 (international)

Fax:
(856)692-3242 or (856)794-9762
(856)691-0271 (international)

Email:
info@kimble-chase.com

Web:
www.kimble-chase.com

Customer Service Hours: 8 am – 5 pm US Eastern Standard Time

© 2008 Kimble Chase Life Science and Research Products LLC. All rights reserved.
Prices and specifications subject to change without notice. CW25M0308KC-0722

CAPABILITIES II
CUSTOM GLASS SHOP III

ADAPTERS 1-19
AIRLESS-WARE® 460-471
AMPULS 20
ARSINE GENERATORS 21
BEADS 22
BEAKERS 22-25
BOTTLES 26-60
GENERAL PURPOSE, TYPE III *26-41*
MILK DILUTION *47*
RESERVOIR, SERUM, SOLUTION *48-49*
SPECIFIC GRAVITY *50-51*
STORAGE MEDIA *52-55*
TCLP *56-57*
WASH *59*
WEIGHING *60*
BURETS 61-69
CAPS / CLOSURES 70-79
CELL CULTURE 80-82
CELL DISRUPTION 83-84
CENTRIFUGE TUBES 430-437
CHROMATOGRAPHY 85-133
COLUMNS *85-107*
HPLC *108-124*
TLC *125-128*
FITTINGS & ADAPTERS *129-132*
TUBING *133*
CLAMPS 134-137
CONCENTRATORS 138-143
CONDENSERS 144-152
CONES 153
CYLINDERS 153-161
DAIRYWARE 162-166
DESICCATORS 167
DISHES 168
DISPENSER 169
DISSOLUTION VESSEL 169
DISTILLATION & REACTORS 170-192
DRYING 193-195
EVAPORATIVE CONCENTRATORS 138-143
EXTRACTION 196-202
FILTER FUNNELS 206-208
FILTRATION 203-217
FLASKS 218-256
CULTURE *218-219*
DEWAR *220*
DISTILLING *221*
ERLENMEYER *222-226*
FILTERING *227-228*
ROUND BOTTOM *233-241*
REACTION *242-245*
VOLUMETRIC *246-256*
FLOWMETER 256
FRITTED WARE 257-259
FUNNELS 260-275
GAS SAMPLING / WASHING 276-282
HEATING 283-286
HOSE CONNECTORS 287
HYDROLYSIS TUBES 450
IMPINGERS 278-280
JARS 287
JOINTS & LUBRICANTS 288-293
LABSETS AND KITS 294-323
FULL SCALE *294*
MACROSCALE *295-297*
MICROSCALE *298-323*
NMR 324-331
O-RINGS 332-334
PELLET PESTLES® 423-424
PEPTIDE SYNTHESIS 335
PETROCHEMICAL 336-341
PIPETS 342-351
DISPOSABLE *347-351*
REUSABLE *342-346*
PRESSURE VESSELS 352-354
PURGE AND TRAP 355-357
RAYSORB® WARE 358-359
ROTARY EVAPORATOR 360-365
SAFETYWARE 366-371
SEALS & SLEEVES 375
SEPTA 76, 78, 371
SERIALIZED WARE 372-374
SPATULA 375
SPIN BARS 377-379
SPRINGS 375
STIRRERS 376-387
STOPCOCKS & VALVES 388-402
STOPPERS 403-406
SUBLIMATORS 407-408
SUPPORTS 408-409
SYRINGES 410
THERMOMETERS 411-413
TISSUE GRINDERS 414-424
TUBES 425-454
TUBING 455-456
ULTRASONICATORS 457-459
VACUUM & AIRLESS 460-483
AIRLESS-WARE® *460-471*
VACUUM *472-483*
VALVES 397-402
VIALS 484-497
WASHER 498

TECHNICAL INFORMATION 499-550
REGISTERED TRADEMARKS 551-552
INDEXES 553-572
ALPHA *553-559*
NUMERICAL *560-572*

2008
2009
Catalog

KIMBLE
KONTES
CHASE

Design and Production

When QUALITY is a factor in the custom design and manufacture of components with closely controlled tolerances, many leading high technology firms depend upon KIMBLE CHASE engineering and production to augment and support their own production efforts.

Marketing a line of technical products gives KIMBLE CHASE service and engineering personnel a unique perspective and an awareness of end use requirements and product function in the marketplace. This knowledge emphasizes the importance of meeting both specifications and delivery schedules.

ENGINEERING and DESIGN

From complex lasers to micro vials, the KIMBLE CHASE Interactive Engineering Staff can resolve a wide range of customer problems.

PRECISION BORE

- Noncircular Shapes
- Circular Shapes
- Various Glass Types
- Custom Shapes
- Specialty
- Capillary

GLASS GRINDING / POLISHING and DRILLING

- Orbital
- Concentric
- Centerless
- Surface
- Taper Grinding
- Thread Grinding
- Hand Grinding and Polishing
- Precision Lapping
- Diamond Reaming
- Drilling

GLASS FORMING (HAND)

- Lathe
- Off Hand
- Tooling
- Automatic Lathe Forming

GLASS FORMING (MACHINE)

- Custom Containers and Vials
- Special Tubing Vials
- Syringe Barrels and Plungers
- Flasks
- Special Packages
- Glass to Metal Sealing
- Micro Vials
- Insert Vials

ANNEALING

- Continuous
- Batch

FINISHING / CUSTOM DECORATING

- Silk Screening
- Decaling
- Silvering
- Amberizing
- Engraving
- Plastic Coating
- Decal Making

MACHINE SHOP

- Machine Design
- Tooling, Fixturing and Mandrels
- Mold Design
- Fly Cutting
- Reaming
- Bore Drilling
- Tapping
- Drilling

Machining of Metals,
Aluminum,Stainless Steel, Leadloy, Kovar, Brass, Copper, Cast Iron, 600 Alloys, Bronze, Inconel, and others

Machining of Plastics

INJECTION MOLDING

- Small Quantities
- Large Quantities

Molding of Polypropylene

SPECIALIZED FABRICATION

- Laser (HeNe, CO_2, HeCd)
- Wave Guide Tubes
- Electro Chemistry
- Kovar, Platinum, Stainless Steel, Copper to Glass
- Pin Seals

OTHER OPERATIONS

- Electromechanical Assembly
- Custom/Technical Assembly
- Graduation
- Testing
- Lining
- Numbering
- Acid Etching
- Chem Room Cleaning
- Hydogen Firing
- SPC/SQC Capable

GLASS TYPES

Kimble:
KG33,EN-1, N51A
Corning:
7740,7052,7056,1720, 7070,7720 Nonex, 0120, 1724,7800, Vycor, 3320 Uranium
Schott:
Duran 8330, 8250, 8245, 8487
Plus Quartz and others

QUALITY ASSURANCE

The KIMBLE CHASE policy is to maintain strict quality control guidelines and procedures throughout our production process. In addition, our quality control program is easily adaptable to specific customer requests.

PRODUCTION POWER

With ample plant capacity available, KIMBLE CHASE has established the ability to rapidly increase production to meet the needs of emerging high technology customers. Our sophisticated control systems, our sound financial base and our highly motivated work force, combine to provide production power which is not available from competitive sources.



Custom Capabilities

- Graduating
- Microscale Glassware
- Quartz Apparatus
- Precision Bore Tubing
- Glass to Metal Graded Seals
- Glass Tooling
- Grinding & Polishing (Machine or Hand)
- Flasks to 72 Liters
- Machine Shop

The Custom Glass Shop at KIMBLE CHASE



Call 800-682-6644,
Fax 856-692-6644

customglass@kimble-chase.com

Have you ever been in need of a glass shop for modifications or repairs of your laboratory glassware? The Custom Glass Shop at KIMBLE CHASE can handle all your special needs.

Whether you want a slight variation of a standard product or a completely unique design, in quantities as small as one piece, The Custom Glass Shop can do it! CGS is our "shop within a shop", utilizing over 50 years of glass experience. Managed by veteran glassblowers, our talented staff takes pride in every creation.



The Custom Glass Shop also has a national **Repair Express Program**. This unique program is designed for our customers who wish to establish a single source for all of their glassware needs. Who better to repair your items than the individuals with the glass fabricating experience that The Custom Glass Shop has to offer? The CGS Repair Express Program can save you up to 75% of the cost of a new item! And, if the items are KONTES or KIMBLE brand, we will deduct an additional 10% off the repair cost!

Simply package your broken (but cleaned) glassware in our reusable shipping container. Include an itemized list detailing the contents and the breakage, and we will give you an estimate of repair within two days of receipt. For those items deemed unrepairable by CGS, you have three choices: (1) we will return the glassware to you, (2) we will salvage those parts (stopcocks, joints, threads) that may be of future use to you, (3) we will dispose of those items for you. The choice is yours.

For more information about The Custom Glass Shop's capabilities, or to obtain a Repair Express container, please contact CGS at **800-682-6644**. If you have an idea for a unique item, sketch it and fax it to CGS at **(856) 692-6644**. Single pieces to large sizes, CGS can meet your requirements for custom glassware manufacture and repair.

***Repair Express* Program Conditions & Limitations:** Contract for deposit on **Repair Express** container is required. Glassware must be clean, properly packaged and insured with the carrier. A complete list of contents must be shipped with the package; any discrepancies will be immediately reported to the customer. **The Custom Glass Shop** is not responsible for any glassware broken in transit. CGS will evaluate the integrity of the glassware to the best of its ability. Glassware deemed unsafe or unrepairable will be handled according to the customer's request. CGS is also not responsible for items that are damaged due to extensive use (such as exposure to temperature extremes) or further damage during an attempt to repair. CGS will not be responsible for the replacement of such items as outlined above. **The Custom Glass Shop** is an independent division of KIMBLE CHASE and is not part of their ISO registration.

Bushing

Bushing adapters allow for compact ⅋ assemblies of dissimiliar joints. ⅋ 10/30 sizes on small (top) joints are useful as fittings for ⅋ thermometers.

Kontes Article No.	⅋ Joints Large (Bottom)	⅋ Joints Small (Top)	Case Qty.	Case Price
309250-0000	10/18	7/12	1	50.77
273500-0022	19/22	14/20	1	25.69
273500-0024	24/25	19/22	1	30.26
150750-0223	24/40	10/30	1	33.27
150750-0242	24/40	14/35, 14/20	1	32.37
273500-0220	24/40	19/38	1	29.12
150750-0020	29/42	19/38	1	34.27
150750-0265	29/42	24/40	1	32.37
150750-0266	34/45	24/40	1	41.89
150750-0268	45/50	24/40	1	73.42
150750-0277	45/50	29/42	1	68.53
150750-0285	45/50	34/45	1	65.59
150750-2610	55/50	24/40	1	117.78
150750-0437	55/50	45/50	1	85.81

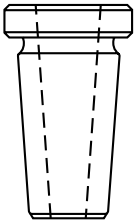


150750
273500
309250

Bushing, PTFE

Made entirely of PTFE.

Kontes Article No.	⅋ Joints Large (Bottom)	⅋ Joints Small (Top)	Case Qty.	Case Price
150800-0223	24/40	19/38	1	31.97
150800-0265	29/42	24/40	1	43.40
150800-0268	45/50	24/40	1	116.38
150800-0277	45/50	29/42	1	117.81
150800-0285	45/50	34/45	1	151.81



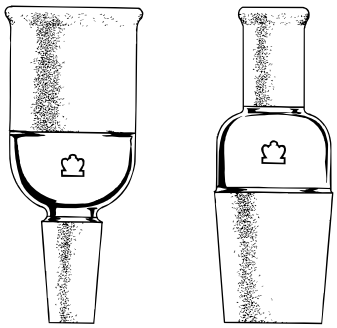
150800

Connecting, Reducing / Enlarging

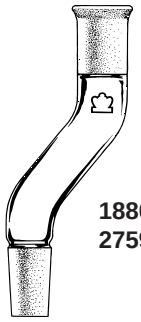
For connecting dissimilar ⅋ joints. Outer joint is at the top, inner at the bottom. See 166000 and 274800 connecting adapters for extension of apparatus having the same joint size.

Kontes Article No.	⅋ Joints Bottom (Inner)	⅋ Joints Top (Outer)	Case Qty.	Case Price
274750-0240	10/30	14/20	1	25.20
150100-0261	10/30	24/40	1	31.45
150100-0262	12/30	24/40	1	31.45
274750-0221	14/20	10/30	1	25.20
274750-0253	14/20	19/22	1	25.98
274750-0263	14/20	24/40	1	26.63
274750-0266	14/20	29/26	1	29.43
274750-0272	14/20	29/42	1	33.27
150100-0221	14/35	10/30	1	25.33
150100-0263	14/35	24/40	1	33.27
150100-0272	14/35	29/42	1	34.34
274750-0241	19/22	14/20	1	25.98
274750-0264	19/22	24/40	1	33.27
274750-0268	19/22	29/26	1	30.95
274750-0273	19/22	29/42	1	34.34
150100-0241	19/28	14/35	1	30.71
150100-0264	19/38	24/40	1	28.15
150100-0273	19/38	29/42	1	30.71
150100-0223	24/40	10/30	1	28.57
274750-0242	24/40	14/20	1	30.42
150100-0242	24/40	14/35	1	30.68
274750-0254	24/40	19/22	1	31.45
150100-0254	24/40	19/38	1	33.47
150100-0271	24/40	29/26	1	31.73
150100-0274	24/40	29/42	1	39.15
150100-0282	24/40	34/45	1	43.72

Kontes Article No.	⅋ Joints Bottom (Inner)	⅋ Joints Top (Outer)	Case Qty.	Case Price
150100-0432	24/40	45/50	1	64.71
150100-0451	24/40	55/50	1	73.42
150100-0224	29/42	10/30	1	29.61
274750-0243	29/42	14/20	1	30.71
150100-0243	29/42	14/35	1	36.14
274750-0259	29/42	19/22	1	30.71
150100-0265	29/42	24/40	1	36.14
150100-0452	29/42	55/50	1	78.95
150100-0266	34/45	24/40	1	39.93
150100-0275	34/45	29/42	1	44.13
150100-0267	40/50	24/40	1	51.29
150100-0268	45/50	24/40	1	55.07
150100-0270	45/50	29/26	1	54.11
150100-0277	45/50	29/42	1	60.02
150100-0285	45/50	34/45	1	70.15
150100-0455	45/50	55/50	1	80.60
150100-0269	50/50	24/40	1	61.87
150100-0456	50/50	55/50	1	88.41
150100-2610	55/50	24/40	1	66.55
150100-0279	55/50	29/42	1	68.53
150100-0287	55/50	34/45	1	80.60
150100-0437	55/50	45/50	1	88.73
150100-2611	60/50	24/40	1	76.99
150100-0439	71/60	45/50	1	100.44
150100-2613	103/60	24/40	1	229.68
150100-0642	103/60	55/50	1	153.53



150100
274750

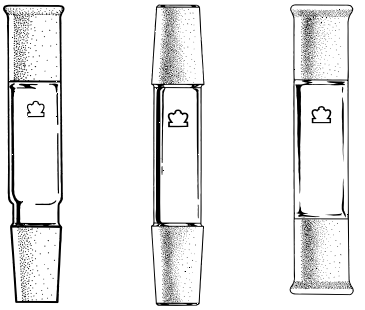


188000
275900

Connecting, Offset

For use with multiple entry ⅋ flasks or reaction vessels. Design helps avoid possible contact with stirrer shafts.

Kontes Article No.	⅋ Joints	Approx. Overall Height (mm)	Offset (mm)	Case Qty.	Case Price
275900-0000	14/20	120	30	1	33.27
188000-2440	24/40	180	40	1	38.11
188000-2942	29/42	190	40	1	43.72



166000
274800

166100

166200

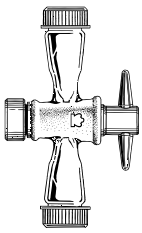
Connecting, Straight

Expands length of apparatus and is also useful as an air condenser. The 274800 and 166000 adapters have ⅋ outer joints at one end and ⅋ inner joints at the other. The 166100 adapters have ⅋ inner joints at both ends, and 166200 adapters have ⅋ outer joints at both ends.

Kontes Article No.	⅋ Joints	Approx. Overall Length (mm)	Length Between Joints (mm)	Case Qty.	Case Price
274800-0030	14/20	70	30	1	28.44
274800-0090	14/20	130	90	1	28.44
166000-7524	24/40	155	75	1	36.01
166000-7529	29/42	160	75	1	40.56
166100-3024	24/40	110	30	1	39.55
166100-7524	24/40	155	75	1	39.55
166100-1224	24/40	200	120	1	39.55
166100-7529	29/42	160	75	1	43.72
166100-1229	29/42	205	120	1	43.98
166100-1729	29/42	255	170	1	43.98
166200-3024	24/40	110	30	1	40.56
166200-7524	24/40	155	75	1	40.56
166200-1224	24/40	200	120	1	40.85
166200-1724	24/40	250	170	1	40.85
166200-7529	29/42	160	75	1	45.03
166200-1229	29/42	205	120	1	45.28
166200-1729	29/42	255	170	1	45.28



179730



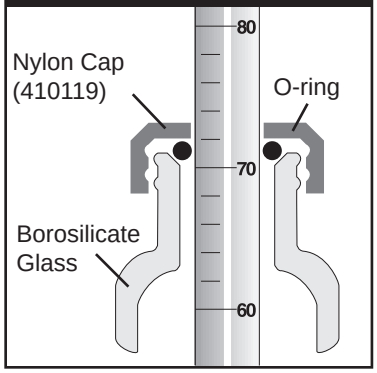
179740
179744

Connecting, Threaded, BEVEL-SEAL®

All connectors have an overall length of approximately 50 mm. Open top cap (410119) is suitable for use to 200°C. O-rings are FKM.

Kontes Article No.	Accommodation Range (mm)	Nominal Size (in.)	O-Ring Size	Modified GPI Thread	Case Qty.	Case Price
179730-0808	5-8 to 5-8	1/4 to 1/4	108/108	15-415 / 15-415	1	23.82
179730-0811	5-8 to 8-11	1/4 to 3/8	108/111	15-415 / 20-415	1	23.82

BEVEL-SEAL Cross Section



Connecting, Threaded, with 4 mm PTFE Stopcock, Bevel-Seal™

All connectors have an overall length of approximately 80 mm. Open top cap (410119) is suitable for use to 200°C. O-rings are FKM. Replacement plug is 821001.

Kontes Article No.	Accommodation Range (mm)	Nominal Size (in.)	⅋ Stopcock	O-Ring Size	Modified GPI Thread	Case Qty.	Case Price
179740-0505	3-5 to 3-5	3/16 to 3/16	2	105	13-425 / 13-425	1	84.98
179740-0808	5-8 to 5-8	1/4 to 1/4	4	108	15-415 / 15-415	1	105.17
179744-0808	5-8 to 5-8	1/4 to 1/4	6	108	15-415 / 15-415	1	110.14

Replacement Parts

Kontes Article No.	Description	Case Qty.	Case Price
410119-1307	Compression Cap, 13-425	12	16.01
758252-0105	Cap O-Ring, FKM, Size 105	10	17.07
410119-1508	Compression Cap, 15-415	12	16.14
758252-0108	Cap O-Ring, FKM, Size 108	10	18.55
821001-0002	PTFE Plug, 11/25	1	12.03
821001-0004	PTFE Plug, 15.2/30	1	13.81
821001-0006	PTFE Plug, 16/35	1	20.27

FKM is a registered trademark of DuPont Dow Elastomers.

Connecting, Threaded, Microscale

$ outer ground joint to GPI thread. Allows interfacing of $ inner ground jointed glassware with threaded microscale components.

Kontes Article No.	GPI Thread Size	$ Joint	Approx. Overall Height (mm)	Case Qty.	Case Price
747130-1314	13-425	14/20	50	1	19.71
747130-1319	13-425	19/22	50	1	19.71
747130-1324	13-425	24/40	70	1	20.75
747130-2014	20-400	14/20	50	1	19.71
747130-2019	20-400	19/22	50	1	19.71
747130-2024	20-400	24/40	70	1	20.75



747130

Connecting, Threaded, Microscale

$ inner ground joint to GPI thread. Allows interfacing of $ outer ground jointed glassware with threaded microscale components.

Kontes Article No.	GPI Thread Size	$ Joint	Approx. Overall Height (mm)	Case Qty.	Case Price
747125-1314	13-425	14/20	50	1	19.71
747125-1319	13-425	19/22	50	1	19.71
747125-1324	13-425	24/40	70	1	19.71
747125-2014	20-400	14/20	50	1	19.71
747125-2019	20-400	19/22	50	1	20.75
747125-2024	20-400	24/40	70	1	20.75

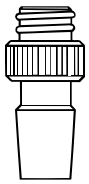


747125

Connecting, PTFE, Threaded, Microscale

$ inner joint to GPI thread. Provides a shorter travel path than the 747125 glass equivalent.

Kontes Article No.	GPI Thread Size	$ Joint	Approx. Overall Height (mm)	Case Qty.	Case Price
747128-2014	20-400	14/20	50	1	23.09
747128-2019	20-400	19/22	55	1	25.20
747128-2024	20-400	24/40	70	1	36.11

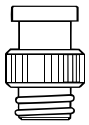


747128

Connecting, PTFE, Threaded, Microscale

$ outer joint to GPI thread. Provides shorter travel path than 747130 glass equivalent.

Kontes Article No.	GPI Thread Size	$ Joint	Approx. Overall Height (mm)	Case Qty.	Case Price
747133-2014	20-400	14/20	35	1	24.66
747133-2019	20-400	19/22	40	1	25.69
747133-2024	20-400	24/40	60	1	33.41



747133

Connecting, Compression Cap, Threaded, O-Ring

Open top compression cap and connectors are glass-filled nylon for use to 200°C. (*Please note the 24-400 cap is black polypropylene.) Connectors have PTFE seals.

Kontes Article No.	Description	**Modified** GPI Thread	**Case** Qty.	**Case** Price
410119-1307	Compression Cap	13-425	12	16.01
758252-0107	Cap O-Ring, FKM, Size 107	13-425	10	17.99
410119-2015	Compression Cap	20-400	12	16.93
758252-0111	Cap O-Ring, FKM, Size 111	20-400	10	20.37
747205-0808	Connector	8-425 to 8-425	1	11.47
747205-0813	Connector	8-425 to 13-425	1	12.27
747205-1313	Connector	13-425 to 13-425	1	12.27
747205-1315	Connector	13-425 to 15-425	1	13.18
747205-1320	Connector	13-425 to 20-400	1	13.18
747205-1520	Connector	15-425 to 20-400	1	11.66
747205-1820	Connector	18-400 to 20-400	1	12.00
747205-2020	Connector	20-400 to 20-400	1	12.27
747205-2022	Connector	20-400 to 22-400	1	13.76
747205-2024	Connector	20-400 to 24-400*	1	13.76
Connector Kit				
747205-0000	Connector kit with ten connectors, one each of the following sizes, 8-425 to 8-425, 8-425 to 13-425, 13-425 to 13-425, 13-425 to 15-425, 13-425 to 20,400, 15-425 to 20,400, 18-400 to 20-400, 20-400 to 20-400, 20-400 to 22-400, 20-400 to 24-400		10	94.63



410119



747205-1313



747205-1320

10 **Connector Kit**

747205-0000



179920

Connecting, Universal, PTFE, BEVEL-SEAL®

Simple o-ring connections form a vacuum seal on glass tubing by tightening the compression cap. Connects to vacuum systems, NMR tubes, photochemical cuvettes, lyophilizing tubes, flowmeters, etc. Body is PTFE. Supplied with FKM o-ring and open top polypropylene cap.

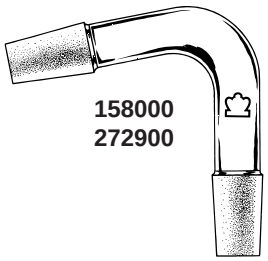
Kontes Article No.	Connects	O-Ring Size	Case Qty.	Case Price
179920-0510	5 to 10 mm O.D.	108 & 110	1	63.90
179920-0808	8 to 8 mm O.D.	109	1	61.90
179920-1010	10 to 10 mm O.D.	110	1	61.11

Replacement O-Rings

Kontes Article No.	Description	Size	Case Qty.	Case Price
758252-0108	O-Ring	107	10	18.55
758252-0109	O-Ring	109	10	19.04
758252-0110	O-Ring	110	10	19.04
758252-0111	O-Ring	110	10	20.37

Replacement Caps

Kontes Article No.	Description	UNF Thread	Fits O.D. (mm)	Hole Diam. (mm)	Case Qty.	Case Price
179802-0021	Cap, PP	1/2"-20	5	7	6	28.30
179802-0022	Cap, PP	5/8"-18	8	8.5	6	18.38
179802-0023	Cap, PP	3/4"-16	10	10.5	6	18.93

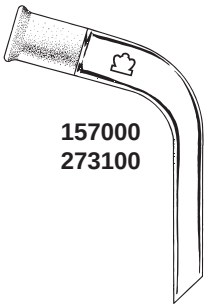


158000
272900

Distillation, Bent, 75°

With ⅋ inner joints at each end.

Kontes Article No.	⅋ Joints	Approx. Overall Height x Width (mm)	Case Qty.	Case Price
272900-0000	14/20	50 x 55	1	27.92
272900-1922	19/22	50 x 55	1	25.98
158000-2440	24/40	130 x 140	1	35.23
158000-2942	29/42	130 x 140	1	51.29

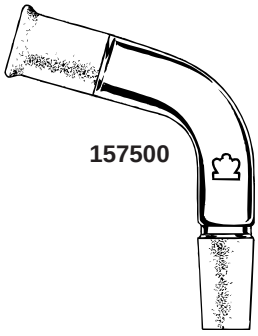


157000
273100

Distillation, Bent, 105°

With a ⅋ outer joint at top. Tapered drip tube extends into open receivers.

Kontes Article No.	⅋ Joints	Approx. Overall Height x Width (mm)	Case Qty.	Case Price
273100-0000	14/20	65 x 65	1	21.27
157000-2440	24/40	115 x 115	1	27.67



157500

Distillation, Bent, 105°

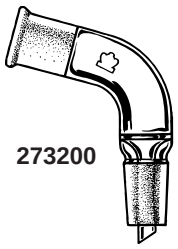
With a ⅋ outer joint at the top and a ⅋ inner joint at the bottom.

Kontes Article No.	⅋ Joints	Approx. Overall Height x Width (mm)	Case Qty.	Case Price
157500-2440	24/40	140 x 110	1	39.93
157500-2942	29/42	150 x 115	1	44.76

Distillation, Bent, 105°

With a ⅋ inner drip joint at the bottom and an ⅋ outer joint at the top.

Kontes Article No.	⅋ Joints	Approx. Overall Height x Width (mm)	Case Qty.	Case Price
273200-0000	14/20	70 x 55	1	35.23
273200-1922	19/22	70 x 55	1	33.53

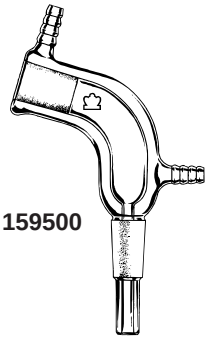


273200

Distillation, Bent, 105°, Jacketed

Water jacket completely surrounds adapter. Used for highly volatile condensates.

Kontes Article No.	⅋ Joints	Hose Connection	Approx. Overall Height x Width (mm)	Case Qty.	Case Price
159500-2440	24/40	#2	210 x 145	1	229.68

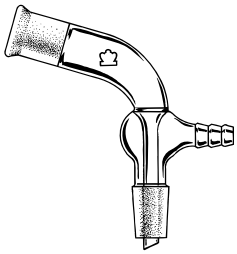


159500

Distillation, Bent, 105°, with Vacuum Take-Off

With a hose connector and a drip tip.

Kontes Article No.	⅋ Joints	Hose Connection	Approx. Overall Height (mm)	Case Qty.	Case Price
276405-0000	14/20	#1	100	1	33.93

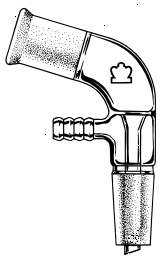


276405

Distillation, Bent, 105°, with Vacuum Take-Off

With a hose connector and a drip tip.

Kontes Article No.	⅋ Joints	Hose Connection	Approx. Overall Height (mm)	Case Qty.	Case Price
276400-0000	14/20	#1	100	1	41.50
276410-0000	19/22	#1	104	1	42.66
205500-2440	24/40	#2	145	1	54.14
205500-2942	29/42	#2	150	1	70.80

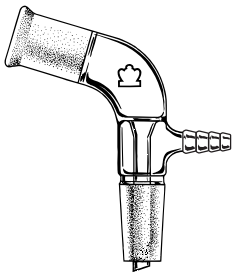


205500
276400
276410

Distillation, Bent, 105°, with Vacuum Take-Off

With a hose connector and a drip tip.

Kontes Article No.	⅋ Joints	Hose Connection	Approx. Overall Height (mm)	Case Qty.	Case Price
205600-1420	14/20	#1	105	1	42.17
205600-1922	19/22	#1	110	1	43.40
205600-2440	24/40	#2	145	1	48.96
205600-2942	29/42	#2	170	1	51.70

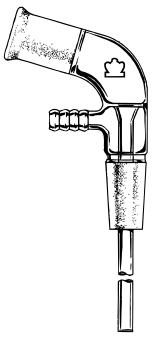


205600

Distillation, Bent 105°, Long Stem, with Vacuum Take-Off

With a hose connector and a drip tip. Lower tube is extended to 200 mm and may be shortened.

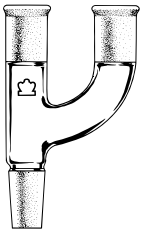
Kontes Article No.	⅋ Joints	Hose Connection	Approx. Overall Height (mm)	Case Qty.	Case Price
206000-2440	24/40	#2	315	1	51.29



206000

Hose Connector Tubing Size Chart

Hose Connector Size	Fits Flexible Tubing I.D.
1	1/4"
2	3/8"
3	1/2"
4	3/4"

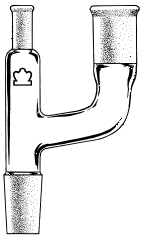


161500
273750
273755
273760

Distillation, Claisen

Provides dual entry into a variety of flasks. Use with 179700 or 179800 BEVEL-SEAL adapters for temperature measurement at either top outer opening. Useful for reflux with addition-type reactions.

Kontes Article No.	Joints	Approx. Overall Height x Width (mm)	Case Qty.	Case Price
273750-0000	14/20	113 x 69	1	55.20
273755-0000	14/20	95 x 64	1	19.45
273760-0000	19/22	125 x 72	1	50.12
161500-2440	24/40	155 x 92	1	60.55
161500-2942	29/42	165 x 105	1	70.15

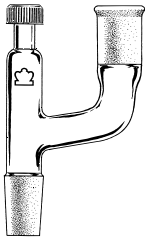


161000

Distillation, Claisen, Thermometer

With a 10/30 joint at the top of the main tube for a 75 mm immersion thermometer.

Kontes Article No.	Joints	Thermometer Joint	Approx. Overall Height x Width (mm)	Case Qty.	Case Price
161000-2440	24/40	10/30	155 x 88	1	60.81
161000-2942	29/42	10/30	165 x 93	1	72.10

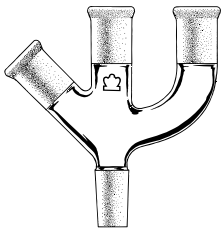


161100

Distillation, Claisen, Thermometer, Bevel-Seal™

With a threaded top connection for plain stem thermometers. A vacuum tight seal is effected with the open top compression cap and FKM o-ring to allow adjustable immersion. Cap (410119) is suitable for use to 200°C. Thread size is GPI 13-425 and o-ring is 010.

Kontes Article No.	Joints	Accommodation Range (mm)	Approx. Overall Height x Width (mm)	Case Qty.	Case Price
161100-2440	24/40	5-8	155 x 88	1	54.57



161600
274000

Distillation, Claisen

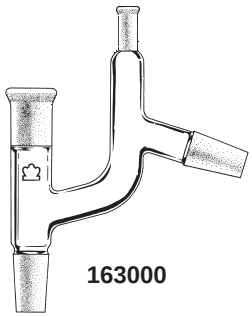
Three inlet type for multiple entry into a single neck flask. One side joint is at a 45° angle.

Kontes Article No.	Joints	Approx. Overall Height x Width (mm)	Case Qty.	Case Price
274000-0000	14/20	115 x 105	1	77.32
161600-2440	24/40	155 x 150	1	91.35

Distillation, Claisen, Thermometer

Distilling adapter with a ⅋ 10/30 joint on the vertical side tube for a 75 mm immersion thermometer.

Kontes Article No.	⅋ Joints	Thermometer ⅋ Joint	Approx. Overall Height x Width (mm)	Case Qty.	Case Price
163000-2440	24/40	10/30	210 x 165	1	80.60
163000-2942	29/42	10/30	245 x 175	1	82.87

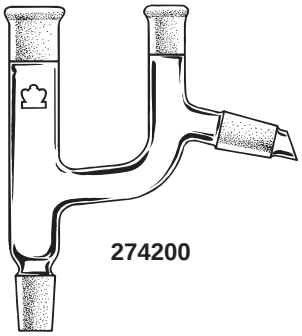


163000

Distillation, Claisen, Thermometer

Distilling adapter with a ⅋ 10/18 joint on the vertical side tube for a 25 mm immersion thermometer.

Kontes Article No.	⅋ Joints	Thermometer ⅋ Joint	Approx. Overall Height x Width (mm)	Case Qty.	Case Price
274200-0000	14/20	10/18	113 x 105	1	78.63

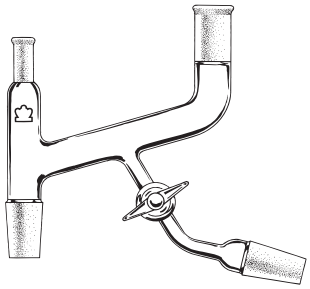


274200

Distillation, Claisen, Thermometer

With PTFE stopcock on the lower side tube and a ⅋ 10/30 joint at the top of main tube for a 75 mm immersion thermometer. Plug is 821001-0004.

Kontes Article No.	⅋ Joints	Thermometer ⅋ Joint	Approx. Overall Height x Width (mm)	Case Qty.	Case Price
164010-2440	24/40	10/30	195 x 205	1	181.40



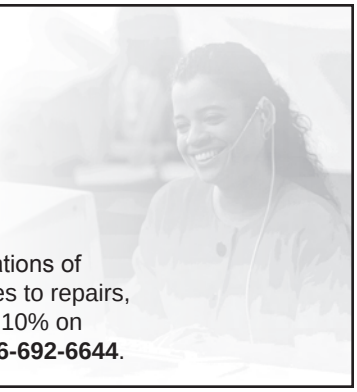
164010



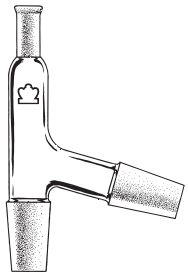
- **Custom Fabrications**
- **Quality Repairs**
- **Modifications of All Kinds**
- **No Order Too Small**
- **Quick Turnaround**

KONTES
custom glass shop

*call toll-free **800-682-6644***
customglass@kimble-chase.com



Contact the **Kontes Custom Glass Shop** at KIMBLE CHASE for modifications of standard products or fabrication of your unique designs. And when it comes to repairs, we can save you up to 75% of the cost of a new item. Save an additional 10% on repairs of Kontes or Kimble Brand products. Fax your requirements to **856-692-6644**.

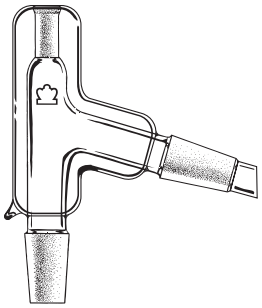


167000
274900

Distillation, Connecting, Thermometer

With a ⅋ top joint for a thermometer. Inner joints are at a 75° angle. Used in distillation assemblies.

Kontes Article No.	⅋ Joints	Thermometer ⅋ Joint	Thermometer Immersion (mm)	Approx. Overall Height x Width (mm)	Case Qty.	Case Price
274900-0000	14/20	10/18	25	75 x 50	1	41.12
274900-1922	19/22	10/18	25	75 x 50	1	37.59
167000-2440	24/40	10/30	75	155 x 100	1	48.54

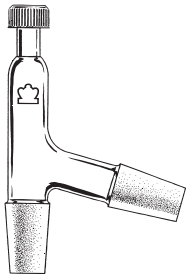


167010

Distillation, Connecting, Jacketed

Vacuum jacketed, useful as a distilling head to connect a condenser with the top of a distillation column. The ⅋ 10/30 top outer joint is for use with 75mm immersion thermometers. Inner joints are at a 75° angle to one another.

Kontes Article No.	⅋ Joints	Thermometer ⅋ Joint	Thermometer Immersion (mm)	Approx. Overall Height x Width (mm)	Case Qty.	Case Price
167010-2440	24/40	10/30	75	205 x 210	1	269.77
167010-2942	29/42	10/30	75	210 x 215	1	295.03

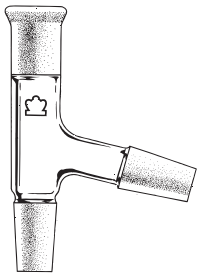


167100
274960

Distillation, Connecting, Thermometer, BEVEL-SEAL®

With a threaded top connection for plain stem thermometers. A vacuum tight seal is effected with the open top compression cap and FKM o-ring to allow adjustable immersion. Cap 410119 is suitable for use to 200°C. Thread size is modified GPI 13-425 and FKM o-ring is size 010.

Kontes Article No.	⅋ Joints	**Modified GPI** Thread Size	**Thermometer** Immersion (mm)	**Approx. Overall** Height x Width (mm)	**Case** Qty.	**Case** Price
274960-0000	14/20	13-425	25	75 x 50	1	36.26
274960-1922	19/22	13-425	25	75 x 50	1	38.25
167100-2440	24/40	13-425	75	155 x 100	1	51.29



167500
274950
275060

Distillation, Connecting

For use as a component in atmospheric or vacuum distillations.

Kontes Article No.	⅋ Joints	Approx. Overall Height x Width (mm)	Case Qty.	Case Price
274950-0000	14/20	105 x 55	1	42.01
275060-0000	19/22	105 x 75	1	40.56
167500-2440	24/40	155 x 105	1	55.07
167500-2942	29/42	165 x 115	1	57.83



Safety Program - *Play it safe in the lab.*

Our Safety Program discusses the ten basic safety rules of handling glassware as well as the technical properties and physics of glass. Available as a DVD.

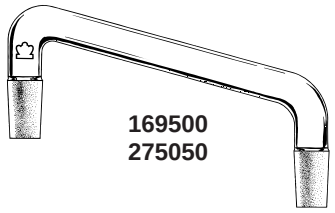
Kimble Article No.	Format	Case Qty.	Case Price
99991D-99	DVD	1	23.99

See more safety products in the *SAFETYWARE* section.

Distillation, Connecting

Useful in the sub-boiling separation of mixtures having volatile components. Joints are parallel.

Kontes Article No.	⧩ Joints	Approx. Distance Between ⧩ Joints (mm)	Case Qty.	Case Price
275050-1420	14/20	100	1	42.16
169500-2440	24/40	200	1	53.25

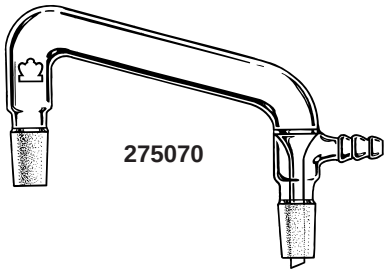


169500
275050

Distillation, Connecting, Vacuum, with Hose Connection

Useful in the sub-boiling separation of mixtures having volatile components. With a sealed-in drip tip to direct condensate. Vacuum connection at side. Joints are parallel.

Kontes Article No.	⧩ Joints	Hose Connection	Approx. Distance Between ⧩ Joints (mm)	Case Qty.	Case Price
275070-1420	14/20	#1	100	1	66.55

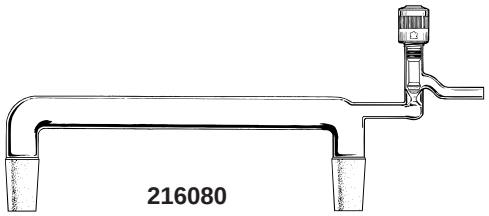


275070

Distillation, Connecting, with Valved Vacuum Take-Off

Designed for purification and transfer of solvents under airless conditions. Incorporates a HI-VAC® valve with an 826601-0004 plug.

Kontes Article No.	⧩ Joints	Approx. Overall Height x Width (mm)	Case Qty.	Case Price
216080-2440	24/40	380 x 140	1	129.52

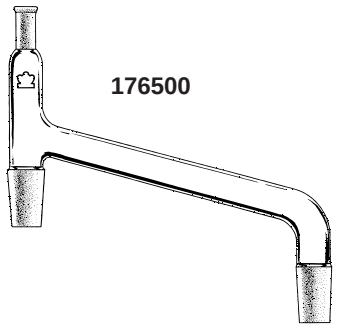


216080

Distillation, Connecting, Thermometer

⧩ 10/30 top joint for a 75 mm ⧩ immersion thermometer. Side arm is at a 75° angle.

Kontes Article No.	⧩ Joints	Thermometer ⧩ Joint	Approx. Overall Height (mm)	Approx. Distance Between Joints (mm)	Case Qty.	Case Price
176500-2440	24/40	10/30	220	190	1	60.81

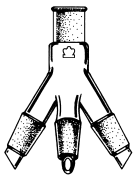


176500

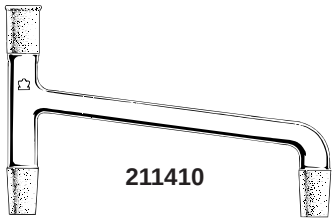
Distillation, Micro, Distributor Adapter

Rotating three-way distributor for use with 251150 distillation adapter. Precise alignment allows distillate to drip directly into the receiver with no wetted surfaces or holdup. Receiver arms are 120° apart.

Kontes Article No.	⧩ Joints	Approx. Overall Height x Width (mm)	Case Qty.	Case Price
251175-0000	14/20	95 x 75	1	98.85



251175



211410

Distillation, Transfer

Used to transfer fluids between two flasks or as a one-piece distillation unit. A variety of flasks or adapters may be connected to this unit to use at reduced pressure or under an inert atmosphere.

Kontes Article No.	Joint	Approx. Overall Height x Width (mm)	Case Qty.	Case Price
211410-2440	24/40	155 x 270	1	65.12



197500
275090
275095

Distillation, Trap, Foam-Type

Placed above a boiling flask to prevent foaming-type reactions from entering either the distilling column or the condenser. Particularly useful with rotary evaporators.

Kontes Article No.	Top Outer Joint	Bottom Inner Joint	Bulb Diameter (mm)	Approx. Overall Height (mm)	Case Qty.	Case Price
275095-0000	14/20	14/20	42	115	1	52.74
275090-0000	19/22	19/22	42	120	1	54.02
275095-2414	24/40	14/20	50	150	1	49.84
197500-2440	24/40	24/40	50	160	1	54.14
275095-2924	24/40	29/26	50	150	1	55.79
275095-2914	29/42	14/20	50	150	1	59.86
275095-2919	29/42	19/22	50	150	1	61.22
197500-2942	29/42	29/42	50	165	1	57.14

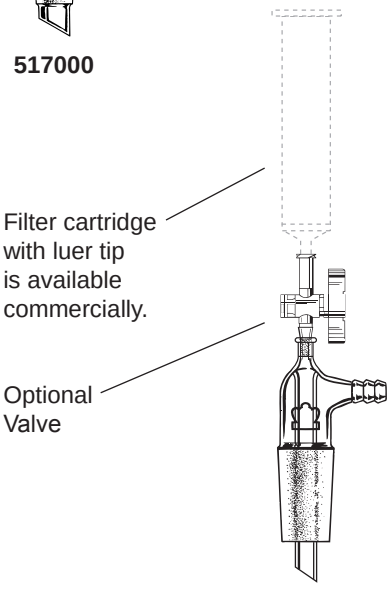


517000

Distilllation Trap, Foam-Type

Foam-type designed to prevent carry-over into other components of the distillation assembly. Baffles allow vapor to continue through the column and condenser.

Kontes Article No.	Joints	Bulb Diameter (mm)	Approx. Overall Height x Width (mm	Case Qty.	Case Price
517000-2440	24/40	65	215 x 65	1	176.93



205100

Filtration, Vacuum, Luer

Use this adapter with disposable syringe cartridges for easy sample concentration and to eliminate the cleaning of glass frits and funnels. It also helps to reduce cross-contamination. Features top luer joint and integral vacuum connection.

Kontes Article No.	Joint	Hose Connection	Approx. Overall Height (mm)	Case Qty.	Case Price
205100-1420	14/20	#1	75	1	52.77
205100-2440	24/40	#1	95	1	55.23

Optional Valves

420163-0000	Polycarbonate Body / HDPE plug	50	98.78
420163-1500	Nylon Body / HDPE plug	5	23.45
420163-4500	Nylon Body / HDPE plug	50	198.36

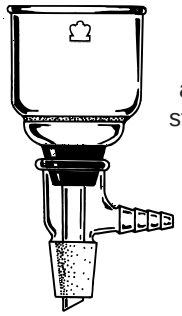
Hose Connector Tubing Size Chart

Hose Connector Size	Fits Flexible Tubing I.D.
1	1/4”
2	3/8”
3	1/2”
4	3/4”

Filtration, Vacuum

For reduced pressure filtration using a suitable glass vessel with an ⅋ joint. Top designed for a pluro stopper. Funnel and pluro stopper are not included.

Kontes Article No.	⅋ Joint	Hose Connection	Fits Pluro Stopper	Fits Funnel Sizes (mL)	Case Qty.	Case Price
275100-0000	14/20	#1	#1	2-30	1	37.84
275110-0000	19/22	#1	#1	2-30	1	42.66
178100-2425	24/25	#2	#3	2-150	1	53.25
178110-2440	24/40	#2	#5 or #6	350-3000	1	54.02
178110-2942	29/42	#2	#5 or #6	350-3000	1	66.24



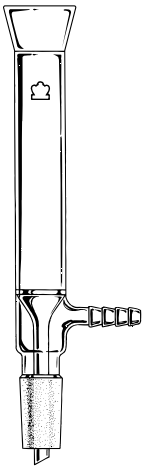
Funnel and pluro stopper not included.

178100
178110
275100
275110

Filtration, Vacuum

For reduced pressure filtration with plain stem buchner funnels. Top designed for a pluro stopper. Pluro stopper not supplied.

Kontes Article No.	⅋ Joints	Flange I.D. (mm)	Hose Connection	Fits Pluro Stopper	Approx. Overall Height (mm)	Case Qty.	Case Price
178120-0014	14/20	23	#1	#2	110	1	48.09
178120-0024	24/40	31	#2	#3	220	1	58.70
178120-0124	24/40	38	#2	#4	230	1	58.70
178120-0029	29/42	31	#2	#3	220	1	66.83
178120-0129	29/42	38	#2	#4	230	1	66.83

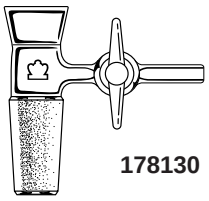


178120

Filtration, Vacuum with PTFE Stopcock

For reduced pressure filtration using plain stem buchner funnels. Stopcock permits control of vacuum source. Top designed for a pluro-stopper. Pluro stopper not included. Plug is 821001.

Kontes Article No.	⅋ Joints	Fits Pluro Stopper	Accepts Up to Buchner Funnel Cap. (mL)	Case Qty.	Case Price
178130-1420	14/20	#2	30	1	78.68
178130-2440	24/40	#2	60	1	88.69
178130-2942	29/42	#3	150	1	91.18



178130

Pluro Stoppers, Set of Seven, for Filter Funnels

This autoclavable neoprene rubber adapter set consists of seven cones designed to fit buchner and fritted glass funnels. Can be used singly, or nested with adjacent sizes. Eliminates boring of special size holes in rubber stoppers and difficulties of insertion and removal.

Stopper Dimensions

Size	O.D. Top and Bottom (mm)	I.D. Top and Bottom (mm)	Height (mm)	Wall (mm)
1	21x11	17x7	21	2
2	27x16	22x11	21	2.5
3	37x22	31x16	25	3
4	46x29	39x22	29	3.5
5	58x38	50x30	35	4
6	69x45	60x36	40	4.5
7	86x57	75x46	45	5.5



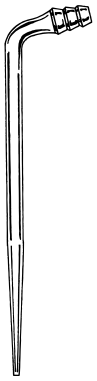
852050

Kontes Article No.	Description	Case Qty.	Case Price
852050-0070	Set of Seven	7	27.03

Hose Connector Tubing Size Chart	
Hose Connector Size	Fits Flexible Tubing I.D.
1	1/4"
2	3/8"
3	1/2"
4	3/4"



273410



275501

Inlet, Bleed-Type

Liquids or gases may be directed into organic reactions using this adapter. May also be calibrated and used as a pipet.

Kontes Article No.	Approx. O.D. (mm)	Tip I.D. (mm)	Approx. Overall Length (mm)	Case Qty.	Case Price
273410-0000	6.4	0.5	280	1	6.66

Inlet, Bleed-Type

For the introduction of gases or liquids during reactions. Fits either PTFE or glass universal adapters.

Kontes Article No.	Approx. Body O.D. (mm)	Tip I.D. (mm)	Hose Connection	Approx. Overall Height x Width (mm)	Case Qty.	Case Price
275501-0000	6	0.6-0.8	#1	135 x 35	1	16.56



275400

Inlet, Bleed-Type, with Top Tubulature

Capillary bleed-type for the introduction of gases or liquids to reactions. Size 35 fits 10 mL round bottom flasks. Size 60 fits 25 mL and larger round bottom flasks.

Kontes Article No.	℔ Joint	O.D. (mm) Upper Tube	Tip I.D. (mm)	Approx. Length Below Joint (mm)	Case Qty.	Case Price
275400-0035	10/18	8	0.5	35	1	15.01
275400-0060	10/18	8	0.5	60	1	16.19

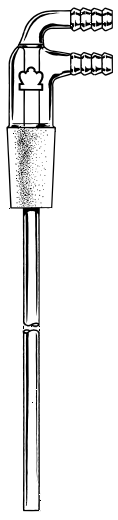


179000
275600

Inlet, Bleed-Type

Used to introduce reactants below the interior surface.

Kontes Article No.	℔ Joint	Hose Connection	Approx. Bottom Tube Length (mm)	Approx. Overall Height (mm)	Case Qty.	Case Price
275600-0000	14/20	#1	75	115	1	27.02
179000-2440	24/40	#2	200	290	1	37.07



181000

Inlet, Bleed-Type, with Hose Connection

With two side hose connectors for venting or introducing gas/vacuum into a system.

Kontes Article No.	℔ Joint	Hose Connection	Approx. Bottom Tube Length (mm)	Approx. Overall Height (mm)	Case Qty.	Case Price
181000-2440	24/40	#2	250	355	1	36.14

Hose Connector Tubing Size Chart

Hose Connector Size	Fits Flexible Tubing I.D.
1	1/4”
2	3/8”
3	1/2”
4	3/4”

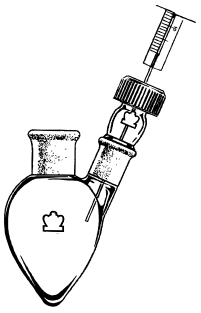
Inlet, Medium and Full Length ⅋ Joints, BEVEL-SEAL®

For use with plain thermometers, pipets, syringes or other small items with an O.D. from 2 to 17 mm. A vacuum tight seal is effected with the open top compression cap and FKM o-ring to allow adjustable immersion of thermometers, etc. Cap is suitable for use to 200°C. To use it as a septum port, just replace the o-ring with a PTFE-lined septum. Supplied with one FKM o-ring and one 410119 cap.

Kontes Article No.	⅋ Joint	Accomodation Range (mm)	Nominal Size (in.)	O-Ring Size	Mod. GPI Thread	Case Qty.	Case Price
746030-0510	14/10	2-5	1/8	105	13-425	1	26.10
746030-0000	14/10	5.5-6.5	1/4	010	13-425	1	21.14
179700-0514	14/20	2-5	1/8	105	13-415	1	25.20
179700-2114	14/20	5.5-6.5	1/4	010	13-425	1	22.18
179700-0814	14/20	5-8	1/4	108	15-415	1	27.02
179700-0519	19/22	2-5	1/8	105	13-415	1	25.98
179700-2119	19/22	5.5-6.5	1/4	010	13-425	1	23.75
179700-0819	19/22	5-8	1/4	108	15-415	1	27.52
179700-1119	19/22	8-11	3/8	111	20-415	1	32.76
179700-0524	24/40	2-5	1/8	105	13-415	1	27.02
179700-2124	24/40	5.5-6.5	1/4	010	13-425	1	23.75
179700-0824	24/40	5-8	1/4	108	15-415	1	28.44
179700-1124	24/40	8-11	3/8	111	20-415	1	33.27
179700-1424	24/40	11-14	1/2	113	22-415	1	35.76
179700-0529	29/42	2-5	1/8	105	13-415	1	27.02
179700-2129	29/42	5.5-6.5	1/4	010	13-425	1	26.88
179700-0829	29/42	5-8	1/4	108	15-415	1	28.44
179700-1129	29/42	8-11	3/8	111	20-415	1	37.59
179700-1429	29/42	11-14	1/2	113	22-415	1	37.96
179700-1729	29/42	14-17	5/8	207	28-415	1	45.03



179700
746030



With Septum

Inlet, Offset, BEVEL-SEAL®

A unique glass adapter, offset and angled approximately 10° for use with multi-neck flasks. Thermometers or bleed tubes are angled into the bottom of a flask. A vacuum-tight seal is effected with the open top compression cap and FKM o-ring to allow adjustable immersion of thermometers, etc. Cap is suitable for use to 200°C. Supplied complete with one size 010 FKM o-ring and one 410119 cap.

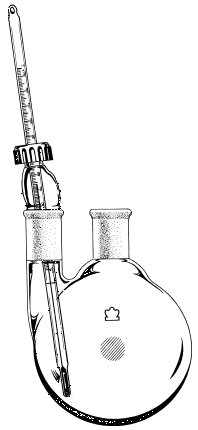
Kontes Article No.	⅋ Joint	Accomodation Range (mm)	Nominal Size (in.)	O-Ring Size	Mod. GPI Thread	Case Qty.	Case Price
179710-2114	14/20	5.5-6.5	1/4	010	13-425	1	27.26
179710-2119	19/22	5.5-6.5	1/4	010	13-425	1	25.32
179710-2124	24/40	5.5-6.5	1/4	010	13-425	1	27.67
179710-2129	29/42	5.5-6.5	1/4	010	13-425	1	33.27

Replacement Parts

410119-1307	Open Top Compression Cap, 13-425, Pkg./12	12	16.01
758252-0110	FKM O-ring, size 0110, Pkg./10	10	19.04



179710



Typical Setup

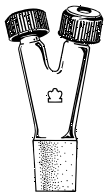
Inlet, Double Offset, Bevel-Seal™

With two threaded openings, offset and angled approximately 10° for use with multi-neck flasks. Thermometers or bleed tubes are angled into the bottom of a flask. A vacuum tight seal is effected with the open top compression cap and FKM o-ring to allow adjustable immersion of thermometers, etc. Cap is suitable for use to 200°C. Supplied complete with two size 010 FKM o-rings and two 410119 caps. Can also be used with ⅋ 24/40 and ⅋ 29/42 outer joints.

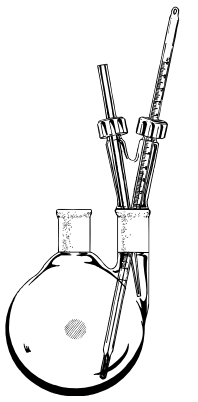
Kontes Article No.	⅋ Joint	Accomodation Range (mm)	Nominal Size (in.)	O-Ring Size	Mod. GPI Thread	Case Qty.	Case Price
179720-2124	24/25	5.5-6.5	1/4	010	13-425	1	61.87
179720-2129	29/26	5.5-6.5	1/4	010	13-425	1	62.76

Replacement Parts

410119-1307	Open Top Compression Cap, 13-425, Pkg./12	12	16.01
758252-0110	FKM O-ring, size 0110, Pkg./10	10	19.04



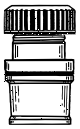
179720



Typical Setup

Inlet, Universal, PTFE, BEVEL-SEAL®

Adjustable fitting designed to adapt to a variety of apparatus. A diameter variation of 1 to 2 mm can be accommodated since the inert o-ring is compressed by the open top cap to effect a vacuum tight seal. Bottom has a ⅋ inner joint. Body is PTFE. Supplied with FKM o-rings, and polypropylene cap suitable for use to 150°C.



179800



Design allows use with 675300 ⅋ Clamps

Kontes Article No.	Size	⅋ Joint	Accommodation Range (mm)	Lower O-Ring Size	Upper O-Ring Size	Case Qty.	Case Price
179800-2110*	21	10/18	5.5/6.5	-	108	1	37.31
179800-2114	21	14/20	5.5/6.5	013	108	1	37.44
179800-2119	21	19/22	5.5/6.5	015	108	1	54.95
179800-2124	21	24/25	5.5/6.5	018	108	1	54.41
179800-2129	21	29/26	5.5/6.5	022	108	1	42.01
179800-2214	22	14/20	6.5/8.5	013	109	1	54.41
179800-2224	22	24/25	6.5/8.5	018	109	1	55.45
179800-2324	23	24/25	8.5/10.5	018	111	1	56.78

Replacement Parts

Kontes Article No.	Description	UNF Thread	Fits O.D. (mm)	Hole Dia. (mm)	Case Qty.	Case Price
179802-0021	Cap, PP	1/2"-20	5	7	6	28.30
179802-0022	Cap, PP	5/8"-18	8	8.5	6	18.38
179802-0023	Cap, PP	3/4"-16	10	10.5	6	18.93

Inlet, Thermometer, with Top Tubulature

With an ⅋ joint at bottom and a tubulature at the top. Includes a 773900 rubber adapter with a 1/4" hole in the top for use with plain stem thermometers, gas inlet tubes, etc.



199000
275410

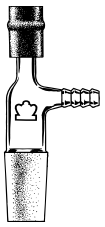
Kontes Article No.	⅋ Joint	Approx. Overall Height (mm)	Case Qty.	Case Price
275410-1420	14/20	50	1	15.65
275410-1922	19/22	57	1	17.37
199000-2440	24/40	95	1	28.44

Replacement Part

773900-0000	Rubber Adapters		12	22.69

Inlet, Thermometer with Hose Connection

Straight type, with ⅋ inner joint at bottom, hose connector at side and tubulature at top. Includes a 773900 rubber adapter with a 1/4" hole in the top for use with plain thermometers, gas inlet tubes, etc.



195500

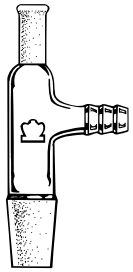
Kontes Article No.	⅋ Joint	Hose Connection	Approx. Overall Height (mm)	Case Qty.	Case Price
195500-2440	24/40	#2	110	1	32.37

Replacement Part

773900-0000	Rubber Adapters		12	22.69

Inlet, Thermometer, Straight, with Hose Connection

Joint at top for a ⅋ ground joint thermometer and a hose connection at side as an additional inlet.

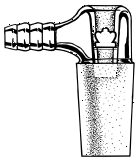


276250

Kontes Article No.	⅋ Joint	Thermometer ⅋ Joint	Hose Connection	Approx. Overall Height (mm)	Case Qty.	Case Price
276250-0000	14/20	10/18	#1	75	1	38.88

Inlet, Thermometer, with Hose Connection

Compact adapter with a ⅋ 10/30 upper joint which can be used with an 871000 thermometer or 179800 universal adapter for thermometers, gas inlet tubes, etc. Side hose connection for gas/vacuum introduction and venting.



180000

Kontes Article No.	⅋ Joint	Hose Connection	Approx. Overall Height (mm)	Case Qty.	Case Price
180000-2440	24/40	#2	65	1	53.25

Inlet, Thermometer, Offset

Thermometer adapter with a ⅋ 24/40 inner joint at bottom and a ⅋ 10/30 outer joint at the top, offset and inclined from vertical. Permits thermometer positioning at convenient points in a multiple-neck flask.

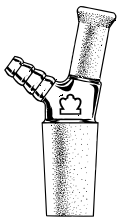


198000

Kontes Article No.	⅋ Joint	Thermometer ⅋ Joint	Approx. Overall Height (mm)	Case Qty.	Case Price
198000-2440	24/40	10/30	90	1	42.01

Inlet, Thermometer, Offset with Hose Connection

Thermometer adapter with a ⅋ 24/40 inner joint at the bottom and a ⅋ 10/30 outer joint at top, offset and inclined from vertical. Permits thermometer positioning at convenient points in a multiple-neck flask. With a hose connection for venting or introducing a gas to the system.



198100

Kontes Article No.	⅋ Joint	Thermometer ⅋ Joint	Hose Connection	Approx. Overall Height (mm)	Case Qty.	Case Price
198100-2440	24/40	10/30	#2	90	1	61.87

Inlet, Thermometer, Universal, BEVEL-SEAL®

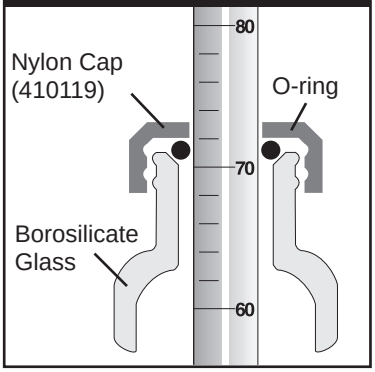
With a hose connection for vacuum or the introduction of gases. For use with plain thermometers, pipets, syringes or other small items with an O.D. from 2 to 17 mm. A vacuum tight seal is effected with the open top compression cap and FKM o-ring to allow adjustable immersion of thermometers, etc. Cap is suitable for use to 200°C. To use as a septum port, just replace the o-ring with a PTFE-lined septum. Supplied with one FKM o-ring and one 410119 cap.



179750
746035

Kontes Article No.	⅋ Joint	Accommodation Range (mm)	Nominal Size (in.)	O-Ring Size	Mod. GPI Thread	Hose Connection	Case Qty.	Case Price
746035-0510	14/10	2-5	1/8	105	13-415	#1	1	33.72
746035-0814	14/10	5-8	1/4	108	15-415	#1	1	30.26
179750-0514	14/20	2-5	1/8	105	13-415	#1	1	31.88
179750-2114	14/20	5.5-6.5	1/4	010	13-425	#1	1	29.48
179750-0814	14/20	5-8	1/4	108	15-415	#1	1	31.88
179750-0819	19/22	5-8	1/4	108	15-415	#1	1	31.88
179750-1119	19/22	8-11	3/8	111	20-415	#1	1	46.57
179750-0524	24/40	2-5	1/8	105	13-415	#2	1	31.88
179750-2124	24/40	5.5-6.5	1/4	010	13-425	#2	1	31.45
179750-0824	24/40	5-8	1/4	108	15-415	#2	1	31.88
179750-1124	24/40	8-11	3/8	111	20-415	#2	1	47.77
179750-1424	24/40	11-14	1/2	113	22-415	#2	1	49.58
179750-2129	29/42	5.5-6.5	1/4	010	13-425	#2	1	31.32
179750-0829	29/42	5-8	1/4	108	15-415	#2	1	41.27
179750-1129	29/42	8-11	3/8	111	20-415	#2	1	49.58

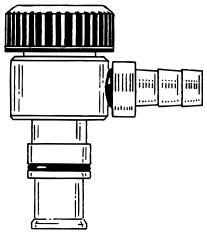
BEVEL-SEAL Cross Section



Hose Connector Tubing Size Chart

Hose Connector Size	Fits Flexible Tubing I.D.
1	1/4"
2	3/8"
3	1/2"
4	3/4"

Inlet, Universal with Hose Connection, BEVEL-SEAL®



179850

- Converts plain stem type funnels for vacuum filtration.
- Provides a combination inlet and vent tube on a single neck vessel.
- Extends gas inlet or gas dispersion tube into a flask to function as an impinger.
- Serves as a pressure relief vent when used with addition funnels.
- Can be used to construct gas washing bottles.

Designed to adapt a variety of tubes, condensers and filters in $ 14/20 and $ 24/25-24/40 glassware. Diameter variations of 1 to 2 mm can be accommodated since the inert o-ring is compressed by the open top polypropylene cap to effect a vacuum tight seal. The serrated side port can be used for a vacuum connection or for the introduction of gases. Bottom has a $ inner joint. Body is PTFE, o-rings are FKM, polypropylene compression cap is suitable for use to 150°C, and side port is CTFE.

Kontes Article No.	Size	$ Joint	Hose Connection	Accommodation Range(mm)	Case Qty.	Case Price
179850-2114	21	14/20	#2	5.5/6.5	1	67.21
179850-2124	21	24/25	#2	5.5/6.5	1	73.73
179850-2214	22	14/20	#2	6.5/8.5	1	67.21
179850-2224	22	24/25	#2	6.5/8.5	1	74.06
179850-2314*	23	14/20	#2	8.5/10.5	1	67.21
179850-2324	23	24/25	#2	8.5/10.5	1	76.01

Replacement Parts

Kontes Article No.	Description	Fits $ Joint	Fits Size	Size	Case Qty.	Case Price
758252-0013	Lower O-ring	14/20	–	013	10	16.94
758252-0018	Lower O-ring	24/25	–	018	10	19.98
758252-0108	Upper O-ring	–	21	108	10	18.55
758252-0109	Upper O-ring	–	22	109	10	19.04
758252-0111	Upper O-ring	–	23	111	10	20.37
758252-0010	Side O-Ring	All	All	010	10	15.21

Kontes Article No.	Description	UNF Thread	Fits O.D. (mm)	Hole Dia. (mm)	Case Qty.	Case Price
179802-0021	Cap, PP	1/2"-20	5	7	6	28.30
179802-0022	Cap, PP	5/8"-18	8	8.5	6	18.38
179802-0023	Cap, PP	3/4"-16	10	10.5	6	18.93

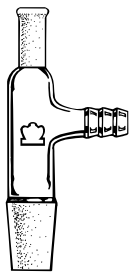
*This size does not have a lower o-ring.

Hose Connector Tubing Size Chart

Hose Connector Size	Fits Flexible Tubing I.D.
1	1/4"
2	3/8"
3	1/2"
4	3/4"

Inlet, Thermometer, Straight, with Hose Connection

Hose connection on the side.

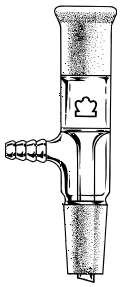


197000
276250

Kontes Article No.	$ Joints Bottom - Top	Hose Connection	Approx. Overall Height (mm)	Case Qty.	Case Price
276250-0000	14/20 - 10/18	#1	75	1	38.88
197000-2440	24/40 - 24/40	#2	155	1	44.76
197000-2942	29/42 - 29/42	#2	165	1	52.46

Inlet, with Hose Connection

Vertical adapter with vacuum take-off and drip tip.



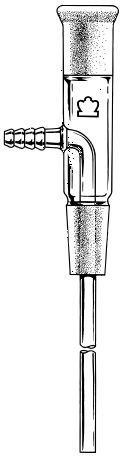
205000
276750
276760

Kontes Article No.	$ Joints	Hose Connection	Approx. Overall Height (mm)	Case Qty.	Case Price
276750-0000	14/20	#1	95	1	39.79
276760-0000	19/22	#1	125	1	45.41
205000-2440	24/40	#2	155	1	55.07
205000-2942	29/42	#2	185	1	60.81

Inlet, Gas

Hose connection provides a gas inlet for reactions. Allows access to the bottom of flasks/tubes. User may shorten the lower tube to fit the flask or apparatus.

Kontes Article No.	Joints	Hose Connection	Approx. Tube Length (mm)	Approx. Overall Height (mm)	Case Qty.	Case Price
181500-2440	24/40	#2	200	355	1	50.51
181500-2942	29/42	#2	200	365	1	55.07

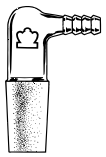


181500

Inlet, Hose

Ideal for use as a vent or for the introduction of pressure/vacuum.

Kontes Article No.	Joint	Hose Connection	Approx. Overall Height (mm)	Case Qty.	Case Price
276000-0000	14/20	#1	45	1	19.05
276010-0000	19/22	#1	55	1	20.75
183000-2440	24/40	#2	80	1	22.98
183000-2942	29/42	#2	85	1	25.58

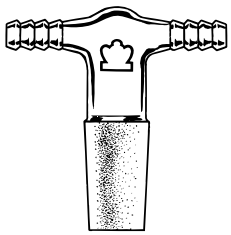


183000
276000
276010

Inlet, Hose, Inert Gas

Adapter has two hose connections 180° apart to permit a flow of inert gas over the apparatus.

Kontes Article No.	Joint	Hose Connection	Approx. Overall Height x Width (mm)	Case Qty.	Case Price
276020-0000	14/20	#1	48 x 60	1	21.22
276030-0000	19/22	#1	48 x 60	1	21.90
183010-2440	24/40	#2	72 x 80	1	24.36
183010-2942	29/42	#2	72 x 80	1	26.39



183010
276020
276030

Inlet, Hose, Inner Joint

Ideal for use as a vent or for the introduction of pressure/vacuum.

Kontes Article No.	Joint	Hose Connection	Approx. Overall Height (mm)	Case Qty.	Case Price
276100-1420	14/20	#1	60	1	18.94
276100-1922	19/22	#1	65	1	20.75
182900-2440	24/40	#2	85	1	22.98
182900-2942	29/42	#2	95	1	18.40



182900
276100

Inlet, Hose, Outer Joint

Ideal for use as a vent or for the introduction of pressure/vacuum.

Kontes Article No.	Joint	Hose Connection	Approx. Overall Height (mm)	Case Qty.	Case Price
276110-1420	14/20	#1	70	1	20.23
276130-1420	14/20	#3	70	1	20.23
276110-1922	19/22	#1	75	1	21.66
182910-2440	24/40	#2	95	1	25.58

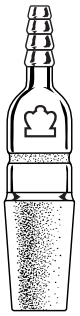


182910
276110
276130

Inlet, Hose, Fritted

Adapter has an extra coarse porosity disc between the hose connection and the inner joint. The fritted disc prevents solids from being introduced into the system.

Kontes Article No.	Joint	Hose Connection	Approx. Overall Height (mm)	Case Qty.	Case Price
276120-1420	14/20	#1	65	1	28.22
276120-1922	19/22	#1	65	1	31.69
182920-2926	29/26	#2	70	1	33.33
182920-2440	24/40	#2	95	1	29.36
182920-2942	29/42	#2	105	1	30.60



182920
276120



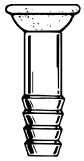
523860

Inlet, Hose Connector, $ Ball Only

O-ring socket joint hose connector. Standard $ sizes fit existing apparatus using spherical joints and permit attachment of flexible hose without costly modification of the apparatus. Supplied complete with a FKM O-ring.

Kontes Article No.	$ Size	Hose Connection	O-Ring Size	Case Qty.	Case Price
523860-0125	12/5	#1	5-134	1	39.93
523860-0189	18/9	#3	5-135	1	40.98
523860-2815	28/15	#4	020	1	42.66
523860-3525	35/25	#4	024	1	58.98

FKM is a registered trademark of DuPont Dow Elastomers.

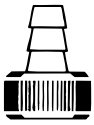


523870

Inlet, Hose Connector, $ Socket Only

O-ring socket joint hose connector. Standard $ sizes fit existing apparatus using spherical joints and permit attachment of flexible hose without costly modification of the apparatus.

Kontes Article No.	$ Size	Hose Connection	Case Qty.	Case Price
523870-0125	12/5	#1	1	25.58
523870-0189	18/9	#3	1	26.88
523870-2815	28/15	#4	1	29.48
523870-3525	35/25	#4	1	34.34

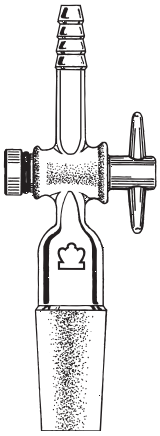


747185

Inlet, Hose Connector with Internal 1/4”-28 Thread, Microscale

Unique design adapts GPI threaded glass to a serrated PTFE hose connection or 1/4”-28 tubing connections.

Kontes Article No.	GPI Thread Size	Internal Thread Size	Fits Hose I.D.	Case Qty.	Case Price
747185-0013	13-425	1/4”-28	1/4”	1	11.35
747185-0020	20-400	1/4”-28	1/4”	1	11.35

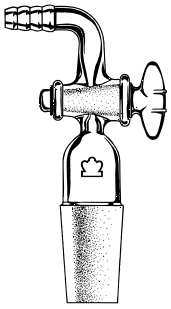


186055

Inlet, Flow Control, PTFE Plug

For regulating the input of gases or liquids into reaction systems. Stopcock has an 821001-0002 PTFE plug.

Kontes Article No.	$ Joint	Hose Connection	Approx. Overall Height (mm)	Case Qty.	Case Price
186055-2440	24/40	#2	130	1	63.40
186055-2926	29/26	#2	130	1	65.44
186055-2942	29/42	#2	130	1	65.44



185000
275200
275210

Inlet, Flow Control, Glass Plug

For regulating the input of gases or liquids into reaction systems. Stopcock has a glass plug.

Kontes Article No.	$ Joint	Hose Connection	Approx. Overall Height (mm)	Replacement Plug	Case Qty.	Case Price
275200-0000	14/20	#1	75	305751-0221	1	48.93
275210-0000	19/22	#1	115	305751-0221	1	53.11
185000-2440	24/40	#2	130	801001-0002	1	58.08
185000-2942	29/42	#2	130	801001-0002	1	61.87

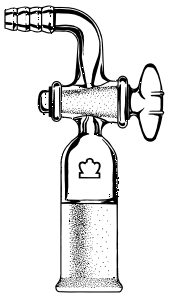
Hose Connector Tubing Size Chart

Hose Connector Size	Fits Flexible Tubing I.D.
1	1/4”
2	3/8”
3	1/2”
4	3/4”

Inlet, Flow Control, Glass Plug

For regulating the input of gases or liquids into reaction systems. Stopcock has an 801001-0002 glass plug.

Kontes Article No.	Joint	Hose Connection	Approx. Overall Height (mm)	Case Qty.	Case Price
186000-2440	24/40	#2	130	1	58.08

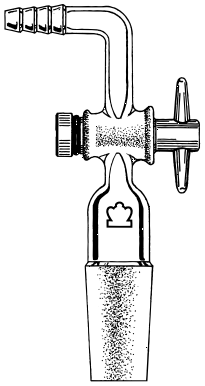


186000

Inlet, Flow Control, PTFE Plug

For regulating the input of gases or liquids into reaction systems. Stopcock has an 821001-0002 PTFE plug.

Kontes Article No.	Joint	Hose Connection	Approx. Overall Height (mm)	Case Qty.	Case Price
275230-0000	14/20	#1	90	1	60.93
275240-0000	19/22	#1	105	1	65.26
185030-2440	24/40	#2	130	1	73.42
185030-2942	29/42	#2	130	1	69.81

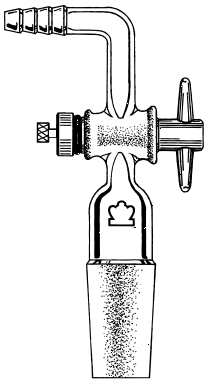


185030
275230
275240

Inlet, Flow Control, PTFE "Varibor" Metering Plug

Provides on/off control with the main valve. Allows delivery of preset volumes of gases or liquids to reactions using the needle valve.

Kontes Article No.	Joint	Hose Connection	Approx. Overall Height (mm)	Replacement Plug	Case Qty.	Case Price
275231-0000	14/20	#1	90	821111-0002	1	92.32
275241-0000	19/22	#1	105	821111-0002	1	100.82
185031-2440	24/40	#2	130	821111-0002	1	137.01
185031-2942	29/42	#2	130	821111-0002	1	72.10

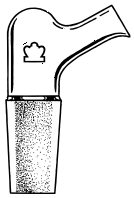


185031
275231
275241

Pour/Transfer

Used for more precise pouring of liquids from reactors and ⅋ joint flasks and also to eliminate droplet run-back. Particularly suitable for dry box and remote applications.

Kontes Article No.	Joint	Approx. Overall Height x Width (mm)	Case Qty.	Case Price
190000-2440	24/40	85 x 55	1	27.67
190000-2942	29/42	90 x 65	1	30.42



190000

Syringe Needle

Supplied with one 774200 Blind Hole Rubber Stopper fitted to the top which provides access to flasks and other containers when pierced by a syringe needle. When used in conjunction with standard syringes, liquid samples may be added or withdrawn from multiple neck flasks. A syringe needle can also be used as a capillary bleed tube or bubbler.

Kontes Article No.	Joint	Case Qty.	Case Price
275750-1420	14/20	1	23.36
275750-1922	19/22	1	28.44
197800-2440	24/40	1	33.27

Replacement Part

774200-0022	Blind Hole Rubber Stopper, Size 22	12	20.13

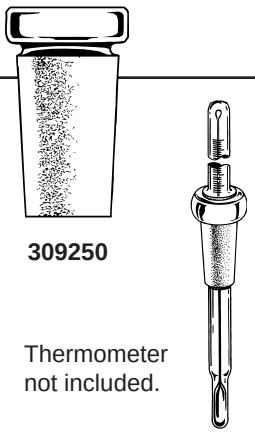


197800
275750

Thermometer, Converts ⅋ 10/18 to ⅋ 7/12

Converts ⅋ 10/18 outer thermometer joints to ⅋ 7/12. The bulb of a 40 mm, ⅋ 7/12 thermometer will be positioned the same as the bulb of a 25 mm, ⅋ 10/18 thermometer when used with this adapter in semi-micro items. Thermometer is not included.

Kontes Article No.	Converts	Case Qty.	Case Price
309250-0000	⅋ 10/18 to ⅋ 7/12	1	50.77



309250

See the *Vacuum / Airless* section for Vacuum Adapters.



12010L



12040G



12050G

AMPULS

Kimble Chase produces many styles of ampuls in the most popular capacities. They are fabricated from both clear N-51A (KIMAX-51) and amber 203 glass. Both glasses are U.S.P. Type I borosilicate, providing maximum solution stability and easy sealing. Amber is recommended for light-sensitive compounds.

Score-Break is an easy opening feature for filled, sealed ampuls. A score-mark in the constricted portion of the ampul's stem is the breakpoint of the ampul. To open an ampul, grasp the stem in one hand and the body in the other, placing thumbs tip-to-tip near the constriction. Using thumb tips as a hinge, bend the stem and the body to break the ampul open. A special ampul file is not required.

Short stem ampuls are "tip-sealed" while trimmed stem ampuls are "pull-sealed".

Trimmed Stem, Score-Break, Lab Pack

Trimmed stem ampul constructed of KIMAX-51 borosilicate glass.

Kimble Article No.	Capacity (mL)	Body O.D. (mm)	Body Length (mm)	Overall Length (mm)	Shelf-Pack Qty.	Case Qty.	Case Price
12010L-1	1	10.75	22	67	-	1152	259.73
12010L-2	2	12.0	30	75	-	1152	257.23
12010L-5	5	16.75	37	88	-	864	245.54
12010L-10	10	19.5	52	107	-	576	268.94
12010L-20	20	23.0	75	135	144	288	198.81

Trimmed Stem, Amber, Score-Break, Gross Pack

Trimmed stem ampul constructed of Amber 203 borosilicate glass.

Kimble Article No.	Capacity (mL)	Body O.D. (mm)	Body Length (mm)	Overall Length (mm)	Case Qty.	Case Price
12040G-1	1	10.75	22	67	144	35.44
12040G-2	2	12.0	30	75	144	37.74

Short Stem, Score-Break, Gross Pack

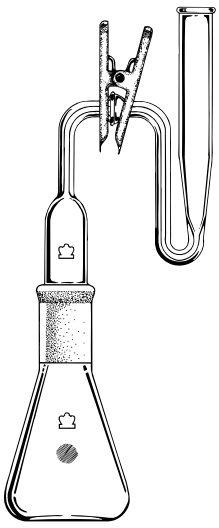
Trimmed stem ampul constructed of KIMAX-51 borosilicate glass.

Kimble Article No.	Capacity (mL)	Body O.D. (mm)	Body Length (mm)	Overall Length (mm)	Case Qty.	Case Price
12050G-1	1	10.75	22	52	144	34.13
12050G-2	2	12.0	30	61	144	34.13
12050G-5	5	16.75	37	75	144	52.76
12050G-10	10	19.5	52	93	144	70.88
12050G-20	20	23.0	75	122	144	105.89

Arsine Generator

Designed for multiple arsenic determinations. A sample containing arsenic is placed within the flask and converted to arsine gas. Hydrogen sulfide is removed from the sample as the gas is generated by lead acetate-impregnated glass wool packed within the scrubber cavity. The absorber tube, containing the reagent silver diethyldithiocarbamate, absorbs the arsine gas and forms a red complex. This product is transferred to a cuvette, and its visible spectrum is then recorder on a colorimeter or spectrometer. Size 12 pinch clamp for $ 12/2 joint between the scrubber and absorber tube is available as an accessory.

Kontes Article No.	Capacity (mL)	T Joints	$ Joints	Approx. Overall Height x Width (mm)	Case Qty.	Case Price
241100-0000	125	24/40	12/2	250 x 140	1	113.67
Component Parts						
241101-2440	Scrubber, T 24/40, $ 12/2				1	25.12
241102-0000	Absorber Tube, $ 12/2				1	22.22
617000-0224	Erlenmeyer Flask, T 24/40, 125 mL				1	23.63
675000-0012	Pinch Clamp, Size 12				1	11.14
Accessory						
675300-0024	Polyacetal T Clamp, Fits 24/40 and 24/25 Joints, Pkg./12				12	39.53



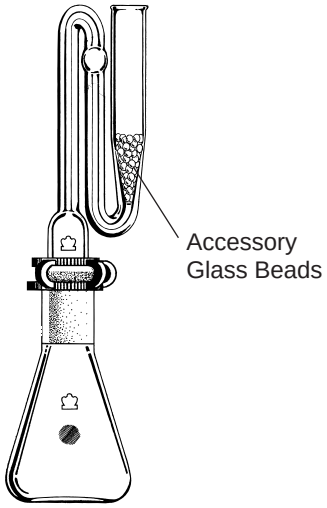
241100

Ref: ASTM D 2972 84 Arsenic in Water
United States Pharmacopeia-Arsenic Test Apparatus

Arsine Generator

An improved version of 241100, this unit requires less space and set-up time, and is easier to clean. The lead acetate-impregnated glass wool is inserted above the T 24/40 joint. Glass beads may be added to the absorber tube to enhance the mixing of the generated gas through the silver diethyldithiocarbamate. Supplied with one polyacetal clamp.

Kontes Article No.	Capacity (mL)	T Joints	Approx. Overall Height x Width (mm)	Case Qty.	Case Price
241160-0000	125	24/40	285 x 65	1	89.99
Replacement Parts					
241161-0000	Scrubber/Absorption Tube			1	74.23
617000-0224	Erlenmeyer Flask, T 24/40, 125 mL			1	23.63
675300-0024	Polyacetal T Clamp, Fits 24/40 and 24/25 Joints, Pkg./12			12	39.53
Accessory					
13500-4	Glass Beads, 4 mm, 1 lb. Pkg.			1	184.30



241160

Ref: Analytical Chemistry December 1974, Vol. 46, No. 14, page 2256.



13500

Solid Glass, Borosilicate

KIMAX KG-33 glass beads are highly resistant to attack by most cold or hot liquids and/or vapors. May be used as mixing beads, boiling stones, or packing for distillation columns. Beads are durable and will not disintegrate or affect delicate compounds. Packed in 1 lb.(approximately 0.45 Kg) containers, 360 cm^3 total volume.

Kimble Article No.	Approx. Dia. (mm)	Approx. Beads per cubic inch	Approx. Beads per pound	Case Qty.	Case Price
13500-3	3 ± 0.3	550	12,000	1 lb.	209.11
13500-4	4 ± 0.4	250	5,200	1 lb.	184.30
13500-5	5 ± 0.5	125	3,000	1 lb.	136.78
13500-6	6 ± 0.6	75	1,800	1 lb.	148.88

Kimble Brand KIMAX® Beakers

EXAMINE . . . Compare . . . And Choose KIMAX Beakers
The design of KIMAX beakers provides strength and durability from top to bottom. Uniform sidewall and bottom thickness, especially in the critical radius point of the heel area, provides excellent mechanical and thermal shock resistance.

Structurally Better

The chemical and physical poperties of KG-33 glass account for the high resistance to heat shock and chemical attack that KIMAX beakers possess. The low coefficient of expansion of KG-33 glass permits the thicker, uniform wall construction found in KIMAX heavy-duty beakers. These beakers offer a substantially longer life over conventional ware.

Additional KIMBLE Brand Features

Heavy-duty and regular Griffin beakers and Berzelius styles both with and without spouts have graduated scales, accurate to ±5% of overall capacity. All marking areas are in a matte finish for easy marking and reading. Pour spout design provides ideal pouring control and prevents dripping. There is a Kimble Brand beaker style or size to meet every requirement.



14000

Griffin, Low Form, with Double Capacity Scale

Thick, slightly flared, beaded top, with a spout designed to have excellent pouring characteristics. These beakers have uniform walls throughout and are made of KIMAX KG-33 glass. All sizes have a durable matte finish marking area for use with an ordinary pencil. An easy-to-read white graduated scale is provided on all sizes from 20 to 4000 mL for measuring and/or mixing liquids where a high level of accuracy is not required. Designed from ASTM Specification E960, Type I requirements.

Kimble Article No.	Capacity (mL)	Graduated Interval (mL)	Subdivision (mL)	Approx. OD x Height (mm)	Shelf-Pack Qty.	Case Qty.	Case Price
14000-10	10	-	-	25 x 34	12	48	168.61
14000-20	20	5 to 15	5	32 x 41	12	48	145.96
14000-30	30	5 to 25	10	35 x 53	12	48	144.95
14000-50	50	10 to 40	10	42 x 53	12	48	144.95
14000-100	100	20 to 80	10	50 x 70	12	48	153.00
14000-150	150	20 to 140	20	57 x 81	12	48	146.46
14000-250	250	25 to 200	25	68 x 88	12	48	146.46
14000-400	400	50 to 325	25	77 x 106	12	48	172.13
14000-600	600	50 to 500	50	88 x 122	6	36	164.58
14000-800	800	50 to 750	50	99 x 136	6	24	150.99
14000-1000	1000	100 to 1000	50	107 x 145	6	24	206.10
14000-1500	1500	200 to 1400	100	120 x 165	4	16	166.42
14000-2000	2000	200 to 2000	100	130 x 190	4	8	136.23
14000-4000	4000	500 to 3500	250	161 x 250	1	6	323.50

Screened In Colors – Blue, Green, Yellow and Red!

Griffin, Low Form, Color, with Double Capacity Scale

Made of KIMAX KG-33 glass. All sizes have a durable, color, matte finish marking area for use with an ordinary pencil. An easy-to-read graduated scale in color is provided on all sizes. Designed from ASTM Specification E960, Type I requirements.



Kimble Article Nos.				Capacity	Grad. Interval	Subdiv.	Approx. O.D. x Height	Case	Case
Bright Blue	Cool Green	Sunny Yellow	Raging Red	(mL)	(mL)	(mL)	(mm)	Qty.	Price
14000B-50	14000G-50	14000Y-50	14000R-50	50	10 to 40	10	42 x 53	12	36.24
14000B-100	14000G-100	14000Y-100	14000R-100	100	20 to 80	10	50 x 70	12	38.25
14000B-150	14000G-150	14000Y-150	14000R-150	150	20 to 140	20	57 x 81	12	36.62
14000B-250	14000G-250	14000Y-250	14000R-250	250	25 to 200	25	68 x 88	12	36.62
14000B-400	14000G-400	14000Y-400	14000R-400	400	50 to 325	25	77 x 106	12	43.03
14000B-600	14000G-600	14000Y-600	14000R-600	600	50 to 500	50	88 x 122	6	27.43
14000B-1000	14000G-1000	14000Y-1000	14000R-1000	1000	100 to 1000	50	107 x 145	6	51.53

Starter Pack, Griffin, Low Form, with Double Capacity Scale

An assortment of popular size beakers from our 14000 Low Form Griffin series. The pack consists of five beakers (one each) in sizes of 50mL, 100mL, 250mL, 600mL and 1000mL. Ideal for start-up requirements and customers who need a variety of beaker sizes, but have limited lab space or glassware needs.

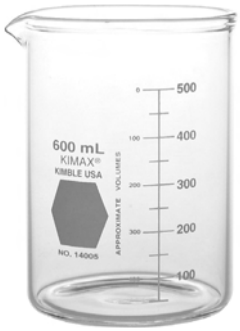


14080

Kimble Article No.	Capacity (mL)	Graduated Interval (mL)	Subdivision (mL)	Approx. OD x Height (mm)	Case Qty.	Case Price
14080-01	50	10 to 40	10	42 x 53	1	26.15
	100	20 to 80	10	50 x 70	1	
	250	25 to 200	10	68 x 88	1	
	600	50 to 500	25	88 x 122	1	
	1000	50 to 950	50	107 x 145	1	

Heavy-Duty, Low Form, with Double Capacity Scale

KIMAX beaker with thick uniform walls throughout and extra wall thickness built into the evenly tooled top rim. Spout is designed for optimum performance. Heavy construction is intended to prolong life expectancy with harder than normal usage (i.e. mechanical shock). Not recommended for use on hot plates where significant thermal gradients exist due to lack of agitation of contents or absence of a temperature control. All sizes have a durable matte finish marking area and a white graduated scale. Designed from ASTM Specification E960, Type II requirements.



14005

Kimble Article No.	Capacity (mL)	Graduated Interval (mL)	Subdivision (mL)	Approx. OD x Height (mm)	Shelf-Pack Qty.	Case Qty.	Case Price
14005-250	250	25 to 200	25	67 x 92	12	48	272.79
14005-400	400	25 to 325	25	77 x 114	12	48	355.83
14005-600	600	50 to 500	50	87 x 122	6	36	311.04
14005-1000	1000	100 to 1000	50	107 x 152	6	24	395.59
14005-2000	2000	200 to 1800	200	130 x 190	4	8	269.52
14005-4000	4000	500 to 3500	500	161 x 252	1	4	263.18



14020

Tall Form, Berzelius, without Spout, with Double Capacity Scale

KIMAX beaker with a slightly flared top and a thick reinforcing bead. All sizes have a durable matte finish area for marking with an ordinary pencil and easy to read white scales to indicate approximate volumes. Designed from ASTM Specification E960, Type IV requirements.

Kimble Article No.	Capacity (mL)	Graduated Interval (mL)	Subdivision (mL)	Approx. OD x Height (mm)	Case Qty.	Case Price
14020-100	100	20 to 80	10	50 x 78	12	54.86
14020-200	200	25 to 150	25	57 x 104	12	50.20
14020-300	300	25 to 250	25	64 x 118	12	63.29
14020-400	400	25 to 325	25	70 x 127	6	35.29
14020-600	600	50 to 500	50	80 x 150	6	44.67
14020-1000	1000	50 to 950	50	90 x 188	6	82.92



14030

Tall Form, Berzelius, with Spout and Double Capacity Scale

KIMAX beaker with a slightly flared top, reinforcing bead and pouring spout. All sizes have a durable matte finish area for marking with an ordinary pencil and easy to read white scales to indicate approximate volumes. Designed from ASTM Specification E960, Type III requirements.

Kimble Article No.	Capacity (mL)	Graduated Interval (mL)	Subdivision (mL)	Approx. OD x Height (mm)	Shelf-Pack Qty.	Case Qty.	Case Price
14030-100	100	20 to 80	10	50 x 78	12	48	179.17
14030-200	200	25 to 150	25	57 x 104	12	48	190.25
14030-300	300	25 to 250	25	64 x 118	12	48	212.39
14030-400	400	25 to 325	25	70 x 127	6	36	172.51
14030-600	600	50 to 500	50	80 x 150	6	24	164.08
14030-1000	1000	50 to 950	50	90 x 188	6	18	164.96



4011

Kontes / Guth, KOOL-GRIP®

Now there's a new, safe alternative to using old-fashioned tongs or gloves to handle beakers filled with hot or dangerous liquids. Heat-resistant borosilicate laboratory glassware with KOOL-GRIP jackets is the solution every lab worker has been seeking because it provides them with a safe and comfortable grip.

Kontes Article No.	Capacity (mL)	Case Qty.	Case Price
4011-250	250	1	13.06
4011-400	400	1	13.07
4011-600	600	1	14.60
4011-800	800	1	14.49

See other KOOL-GRIP® products in the *SAFETYWARE* section.



- **Custom Fabrications**
- **Quality Repairs**
- **Modifications of All Kinds**
- **No Order Too Small**
- **Quick Turnaround**

KONTES
custom glass shop
*call toll-free **800-682-6644***
customglass@kimble-chase.com

Contact the **Kontes Custom Glass Shop** at KIMBLE CHASE for modifications of standard products or fabrication of your unique designs. And when it comes to repairs, we can save you up to 75% of the cost of a new item. Save an additional 10% on repairs of Kontes or Kimble Brand products. Fax your requirements to **856-692-6644**.

Beaker, Six-Pack and Pitcher, LABMUG®



318000 Mug
318100 Pitcher

- 1/2 liter six-pack and matching 2 liter pitcher.
- For lab use, handle makes an ordinary beaker easier to use.
- Ideal in the office or at home for hot and cold drinks.

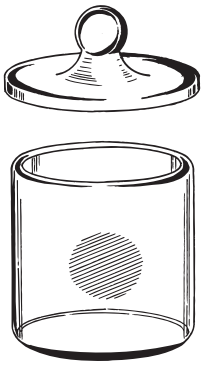
The KONTES LABMUG and Pitcher are made from Berzelius glass beakers and have solid rod handles. Both the mug and the pitcher are graduated to indicate approximate volume and can withstand thermal shock.

Note: KONTES LABMUGS and Pitchers are available in quantity, printed with your organization's logo or slogan. Prices will be quoted upon request. Call Customer Service at 888-546-2531 for more information.

Kontes Article No.	Description	Case Qty.	Case Price
318000-0000	1/2 Liter Mug, Pkg./6	6	125.48
318100-0000	2 Liter Pitcher	1	78.39

Beaker / Crucible, Quartz

Designed for muffle furnace ashing procedures. Useful where chemical purity is a factor in subsequent analysis. Quartz will also satisfy high temperature requirements to 1050°C. Also very useful for determining trace metals in environmental samples.



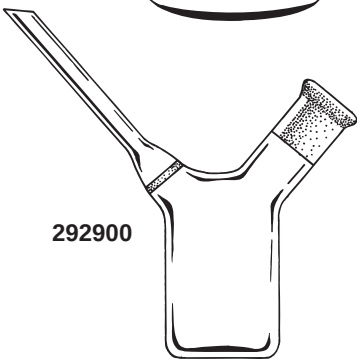
319010

Kontes Article No.	Capacity (mL)	Approx. Beaker O.D. x Height (mm)	Case Qty.	Case Price
319010-0050	50	49 x 50	1	141.29
Replacement Parts				
319011-0050	Quartz Beaker Only		1	93.20
319012-0050	Quartz Cover		1	63.80

Ref: AOCS - Crude Fiber Analysis of Soybean Meal, Pesticides Monitoring Journal, 15(2): 90-97, Sept. 1981.

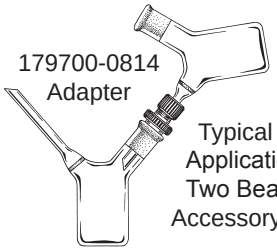
Beaker, Filtration

A container used in the formation of a precipitate. Slight pressure or vacuum can be used to speed filtration. 1/4" O.D. sidearm has a sealed-in fritted disc.



292900

Kontes Article No.	⅋ Joint	Cap. (mL)	Disc Dia. (mm)	Disc Porosity	Approx. Overall Height x Width (mm)	Case Qty.	Case Price
292900-0030	14/20	30	10	Coarse	110 x 105	1	77.51
Accessory							
179700-0814	BEVEL-SEAL™ Glass Adapter					1	27.02



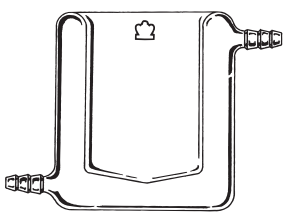
179700-0814
Adapter

Typical Filtration Application Using Two Beakers and Accessory Adapter

Beaker, Reaction, Jacketed

Designed for a variety of temperature controlled reactions. Jacket has serrated hose connections. Useful in biological and chemical reactions including titrations, enzyme digestions, and synthetic organic reactions. Conical lower interior surface eliminates spin-out when used with an egg-shaped PTFE magnetic stir bar. Open top provides easy access to concentrated residual samples.

Kontes Article No.	Capacity (mL)	Hose Connections	Approx. I.D. x Inner Height (mm)	Approx. O.D. x Outer Height (mm)	Case Qty.	Case Price
317000-0050	50	#2	37 x 55	70 x 70	1	76.37
317000-0100	100	#2	47 x 73	80 x 85	1	90.17
317000-0250	250	#2	65 x 84	90 x 95	1	115.04
317000-0500	500	#2	80 x 115	110 x 130	1	160.13
317000-1000	1000	#2	105 x 133	140 x 152	1	187.03
317000-2000	2000	#2	124 x 190	178 x 218	1	326.98



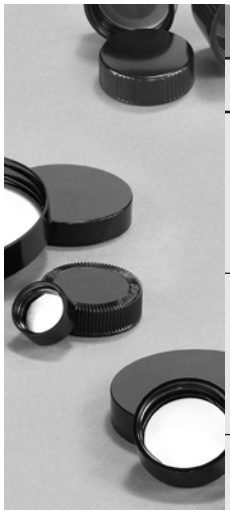
317000



Clear Glass Boston Rounds

- Combine quality and economy
- Clear glass allows for easy viewing of contents
- Narrow-mouth design
- Type III soda-lime glass

Choose from Convenience Packs and Bulk Packs in a variety of cap / liner combinations. Pallet Packs come without caps and are listed at the bottom of the chart.



Caps Only are listed on pages 40-41.



Bottles Only
Caps not included.

Bottles Only Pallet Packs
Caps not included.

Clear Boston Rounds					Bulk Packs — Shrink Modules with Caps in Bags			Convenience Packs (Caps Attached)		
Caps with	Capacity oz.	Capacity mL	GPI Finish	Dia. x Ht. (mm)	Case Qty.	Kimble Art. No.	Case Price	Case Qty.	Kimble Art. No.	Case Price
Pulp / Vinyl	1	30	20-400	31 x 79	432	**5110120C 21**	$331.38	48	**5110120V 21**	$82.44
	2	60	20-400	39 x 94	288	**5110220C 21**	$246.49	24	**5110220V 21**	$46.60
	4	125	22-400	48 x 112	160	**5110422C 21**	$169.52	24	**5110422V 21**	$52.14
	8	250	24-400	60 x 136	108	**5110824C 21**	$161.72	12	**5110824V 21**	$32.06
	16	500	28-400	75 x 168	60	**5111628C 21**	$98.61	12	**5111628V 21**	$51.02
	32	1000	33-400	94 x 206	12	**5113233C 21**	$32.67	12	**5113233V 21**	$72.53
Solid PE	1	30	20-400	31 x 79	432	**5110120C 22**	$332.56	48	**5110120V 22**	$97.88
	2	60	20-400	39 x 94	288	**5110220C 22**	$247.27	24	**5110220V 22**	$51.76
	4	125	22-400	48 x 112	160	**5110422C 22**	$169.96	24	**5110422V 22**	$59.25
	8	250	24-400	60 x 136	108	**5110824C 22**	$162.01	12	**5110824V 22**	$34.66
	16	500	28-400	75 x 168	60	**5111628C 22**	$98.77	12	**5111628V 22**	$48.83
	32	1000	33-400	94 x 206	12	**5113233C 22**	$32.70	12	**5113233V 22**	$68.01
Tinfoil	1	30	20-400	31 x 79	432	**5110120C 23**	$333.74	48	**5110120V 23**	$83.26
	2	60	20-400	39 x 94	288	**5110220C 23**	$248.06	24	**5110220V 23**	$47.07
	4	125	22-400	48 x 112	160	**5110422C 23**	$170.39	24	**5110422V 23**	$52.66
	8	250	24-400	60 x 136	108	**5110824C 23**	$162.31	12	**5110824V 23**	$32.38
	16	500	28-400	75 x 168	60	**5111628C 23**	$98.94	12	**5111628V 23**	$51.54
	32	1000	33-400	94 x 206	12	**5113233C 23**	$32.73	12	**5113233V 23**	$73.26
White Rubber	1	30	20-400	31 x 79	432	**5110120C 24**	$340.23	48	**5110120V 24**	$94.66
	2	60	20-400	39 x 94	288	**5110220C 24**	$252.39	24	**5110220V 24**	$46.37
	4	125	22-400	48 x 112	160	**5110422C 24**	$174.32	24	**5110422V 24**	$53.58
	8	250	24-400	60 x 136	108	**5110824C 24**	$165.26	12	**5110824V 24**	$32.15
	16	500	28-400	75 x 168	60	**5111628C 24**	$101.56	12	**5111628V 24**	$50.71
	32	1000	33-400	94 x 206	12	**5113233C 24**	$33.42	12	**5113233V 24**	$73.72
Taperseal	1	30	20-400	31 x 79	432	**5110120C 25**	$347.89	48	**5110120V 25**	$87.45
	2	60	20-400	39 x 94	288	**5110220C 25**	$257.49	24	**5110220V 25**	$46.00
	4	125	22-400	48 x 112	160	**5110422C 25**	$175.64	24	**5110422V 25**	$49.36
	8	250	24-400	60 x 136	108	**5110824C 25**	$165.99	12	**5110824V 25**	$28.87
	16	500	28-400	75 x 168	60	**5111628C 25**	$101.56	12	**5111628V 25**	$41.55
	32	1000	33-400	94 x 206	12	**5113233C 25**	$33.42	12	**5113233V 25**	$59.81
PTFE-Faced LDPE Foam	1	30	20-400	31 x 79	432	**5110120C 26**	$353.19	48	**5110120V 26**	$121.69
	2	60	20-400	39 x 94	288	**5110220C 26**	$261.03	24	**5110220V 26**	$64.48
	4	125	22-400	48 x 112	160	**5110422C 26**	$178.04	24	**5110422V 26**	$72.65
	8	250	24-400	60 x 136	108	**5110824C 26**	$169.68	12	**5110824V 26**	$42.55
	16	500	28-400	75 x 168	60	**5111628C 26**	$106.31	12	**5111628V 26**	$56.21
	32	1000	33-400	94 x 206	12	**5113233C 26**	$34.98	12	**5113233V 26**	$82.41
No Caps	1	30	20-400	31 x 79	432	**5110120B**	$279.67	—	—	—
	2	60	20-400	39 x 94	288	**5110220B**	$218.31	—	—	—
	4	125	22-400	48 x 112	160	**5110422B**	$145.22	—	—	—
	8	250	24-400	60 x 136	108	**5110824B**	$108.35	—	—	—
	16	500	28-400	75 x 168	60	**5111628B**	$96.43	—	—	—
	32	1000	33-400	94 x 206	12	**5113233B**	$28.60	—	—	—

	Capacity oz.	Capacity mL	GPI Finish	Dia. x Ht. (mm)	Qty. per Module	Modules per Pallet	Pieces per Pallet	Kimble Art. No.	Price per Pallet	
No Caps	1	30	20-400	31 x 79	144	104	14976	**5110120P**	$5,519.40	—
	2	60	20-400	39 x 94	96	88	8448	**5110220P**	$3,736.21	—
	4	125	22-400	48 x 112	80	45	3600	**5110422P**	$2,087.47	—
	8	250	24-400	60 x 136	54	48	2592	**5110824P**	$2,101.62	—
	16	500	28-400	75 x 168	20	54	1080	**5111628P**	$1,500.15	—
	32	1000	33-400	94 x 206	12	45	540	**5113233P**	$1,138.37	—



Amber Glass Boston Rounds

- Combine quality and economy
- Amber protects light-sensitive contents
- Narrow-mouth design
- Type III soda-lime glass

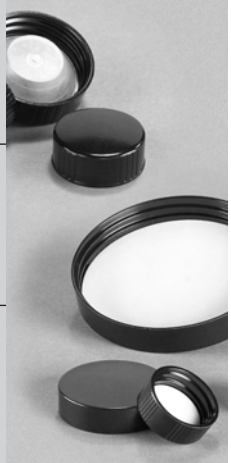
Choose from Convenience Packs and Bulk Packs in a variety of cap / liner combinations. Pallet Packs come without caps and are listed at the bottom of the chart.

Amber Boston Rounds					Bulk Packs — Shrink Modules with Caps in Bags			Convenience Packs (Caps Attached)		
Caps with	Capacity oz.	Capacity mL	GPI Finish	Dia. x Ht. (mm)	Case Qty.	Kimble Art. No.	Case Price	Case Qty.	Kimble Art. No.	Case Price
Pulp / Vinyl	1	30	20-400	31 x 79	432	**5120120C 21**	$346.91	48	**5120120V 21**	$85.36
	2	60	20-400	39 x 94	288	**5120220C 21**	$263.83	24	**5120220V 21**	$46.44
	4	125	22-400	48 x 112	160	**5120422C 21**	$174.43	24	**5120422V 21**	$52.09
	8	250	24-400	60 x 136	108	**5120824C 21**	$147.57	12	**5120824V 21**	$32.08
	16	500	28-400	75 x 168	60	**5121628C 21**	$114.06	12	**5121628V 21**	$51.03
	32	1000	33-400	94 x 206	12	**5123233C 21**	$34.25	12	**5123233V 21**	$72.56
Solid PE	1	30	20-400	31 x 79	432	**5120120C 22**	$348.10	48	**5120120V 22**	$65.99
	2	60	20-400	39 x 94	288	**5120220C 22**	$264.62	24	**5120220V 22**	$51.73
	4	125	22-400	48 x 112	160	**5120422C 22**	$174.87	24	**5120422V 22**	$59.27
	8	250	24-400	60 x 136	108	**5120824C 22**	$147.87	12	**5120824V 22**	$34.58
	16	500	28-400	75 x 168	60	**5121628C 22**	$114.22	12	**5121628V 22**	$48.74
	32	1000	33-400	94 x 206	12	**5123233C 22**	$34.28	12	**5123233V 22**	$68.09
Tinfoil	1	30	20-400	31 x 79	432	**5120120C 23**	$349.27	48	**5120120V 23**	$68.62
	2	60	20-400	39 x 94	288	**5120220C 23**	$265.40	24	**5120220V 23**	$46.90
	4	125	22-400	48 x 112	160	**5120422C 23**	$175.30	24	**5120422V 23**	$52.62
	8	250	24-400	60 x 136	108	**5120824C 23**	$148.16	12	**5120824V 23**	$32.41
	16	500	28-400	75 x 168	60	**5121628C 23**	$114.39	12	**5121628V 23**	$51.54
	32	1000	33-400	94 x 206	12	**5123233C 23**	$34.32	12	**5123233V 23**	$73.29
White Rubber	1	30	20-400	31 x 79	432	**5120120C 24**	$355.76	48	**5120120V 24**	$94.69
	2	60	20-400	39 x 94	288	**5120220C 24**	$269.72	24	**5120220V 24**	$46.33
	4	125	22-400	48 x 112	160	**5120422C 24**	$179.23	24	**5120422V 24**	$53.52
	8	250	24-400	60 x 136	108	**5120824C 24**	$151.10	12	**5120824V 24**	$32.06
	16	500	28-400	75 x 168	60	**5121628C 24**	$117.01	12	**5121628V 24**	$52.42
	32	1000	33-400	94 x 206	12	**5123233C 24**	$35.01	12	**5123233V 24**	$75.54
Taperseal	1	30	20-400	31 x 79	432	**5120120C 25**	$363.43	48	**5120120V 25**	$75.48
	2	60	20-400	39 x 94	288	**5120220C 25**	$274.83	24	**5120220V 25**	$44.20
	4	125	22-400	48 x 112	160	**5120422C 25**	$180.54	24	**5120422V 25**	$49.37
	8	250	24-400	60 x 136	108	**5120824C 25**	$151.84	12	**5120824V 25**	$28.81
	16	500	28-400	75 x 168	60	**5121628C 25**	$117.01	12	**5121628V 25**	$44.23
	32	1000	33-400	94 x 206	12	**5123233C 25**	$35.01	12	**5123233V 25**	$64.86
PTFE-Faced LDPE Foam	1	30	20-400	31 x 79	432	**5120120C 26**	$368.73	48	**5120120V 26**	$72.62
	2	60	20-400	39 x 94	288	**5120220C 26**	$278.38	24	**5120220V 26**	$63.22
	4	125	22-400	48 x 112	160	**5120422C 26**	$182.95	24	**5120422V 26**	$69.44
	8	250	24-400	60 x 136	108	**5120824C 26**	$155.53	12	**5120824V 26**	$47.46
	16	500	28-400	75 x 168	60	**5121628C 26**	$121.76	12	**5121628V 26**	$60.39
	32	1000	33-400	94 x 206	12	**5123233C 26**	$36.56	12	**5123233V 26**	$80.34
No Caps	1	30	20-400	31 x 79	432	**5120120B**	$293.64	—	—	—
	2	60	20-400	39 x 94	288	**5120220B**	$225.07	—	—	—
	4	125	22-400	48 x 112	160	**5120422B**	$149.71	—	—	—
	8	250	24-400	60 x 136	108	**5120824B**	$111.70	—	—	—
	16	500	28-400	75 x 168	60	**5121628B**	$99.41	—	—	—
	32	1000	33-400	94 x 206	12	**5123233B**	$29.45	—	—	—

	Capacity oz.	Capacity mL	GPI Finish	Dia. x Ht. (mm)	Qty. per Module	Modules per Pallet	Pieces per Pallet	Kimble Art. No.	Price per Pallet	
No Caps	1	30	20-400	31 x 79	144	104	14976	**5120120P**	$5,666.59	—
	2	60	20-400	39 x 94	96	88	8448	**5120220P**	$3,819.24	—
	4	125	22-400	48 x 112	80	45	3600	**5120422P**	$2,122.85	—
	8	250	24-400	60 x 136	54	48	2592	**5120824P**	$2,012.46	—
	16	500	28-400	75 x 168	20	54	1080	**5121628P**	$1,585.06	—
	32	1000	33-400	94 x 206	12	45	540	**5123233P**	$1,276.36	—



Caps Only are listed on pages 40-41.



Bottles Only
Caps not included.

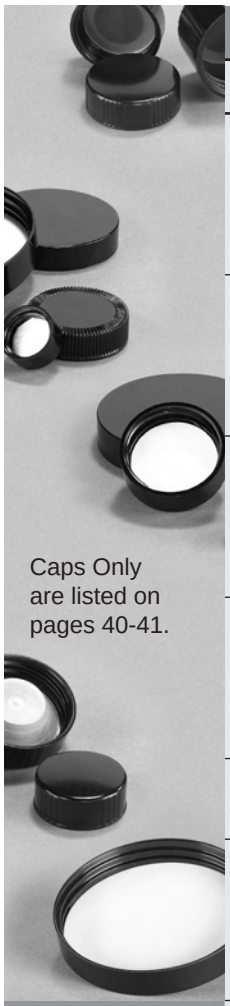
Bottles Only Pallet Packs
Caps not included.



Clear Glass Wide-Mouth Packers

- Wide-mouth design for efficient addition and removal of contents
- Clear glass allows for easy viewing of contents
- Type III soda-lime glass

Choose from Convenience Packs and Bulk Packs in a variety of cap / liner combinations. Pallet Packs come without caps and are listed at the bottom of the chart.



Caps Only are listed on pages 40-41.

Bottles Only
Caps not included.

Bottles Only Pallet Packs
Caps not included.

Clear Wide-Mouth Packers					Bulk Packs — Shrink Modules with Caps in Bags			Convenience Packs (Caps Attached)		
Caps with	Capacity oz.	Capacity mL	GPI Finish	Dia. x Ht. (mm)	Case Qty.	Kimble Art. No.	Case Price	Case Qty.	Kimble Art. No.	Case Price
Pulp / Vinyl	1	30	28-400	37 x 65	432	**5210128C 21**	$233.10	24	**5210128V 21**	$33.44
	2	60	33-400	44 x 75	216	**5210233C 21**	$194.05	24	**5210233V 21**	$47.82
	4	125	38-400	54 x 95	180	**5210438C 21**	$205.65	24	**5210438V 21**	$56.52
	8	250	45-400	66 x 119	84	**5210845C 21**	$115.35	12	**5210845V 21**	$39.52
	16	500	53-400	80 x 146	60	**5211653C 21**	$116.15	12	**5211653V 21**	$47.50
	32	1000	53-400	99 x 178	36	**5213253C 21**	$99.36	12	**5213253V 21**	$63.46
Solid PE	1	30	28-400	37 x 65	432	**5210128C 22**	$234.27	24	**5210128V 22**	$55.09
	2	60	33-400	44 x 75	216	**5210233C 22**	$194.65	24	**5210233V 22**	$66.42
	4	125	38-400	54 x 95	180	**5210438C 22**	$206.14	24	**5210438V 22**	$78.71
	8	250	45-400	66 x 119	84	**5210845C 22**	$116.15	12	**5210845V 22**	$53.54
	16	500	53-400	80 x 146	60	**5211653C 22**	$116.31	12	**5211653V 22**	$68.82
	32	1000	53-400	99 x 178	36	**5213253C 22**	$99.47	12	**5213253V 22**	$90.25
Tinfoil	1	30	28-400	37 x 65	432	**5210128C 23**	$235.46	24	**5210128V 23**	$33.77
	2	60	33-400	44 x 75	216	**5210233C 23**	$195.23	24	**5210233V 23**	$48.30
	4	125	38-400	54 x 95	180	**5210438C 23**	$206.64	24	**5210438V 23**	$57.09
	8	250	45-400	66 x 119	84	**5210845C 23**	$116.38	12	**5210845V 23**	$39.92
	16	500	53-400	80 x 146	60	**5211653C 23**	$116.47	12	**5211653V 23**	$47.96
	32	1000	53-400	99 x 178	36	**5213253C 23**	$99.56	12	**5213253V 23**	$64.10
White Rubber	1	30	28-400	37 x 65	432	**5210128C 24**	$254.32	24	**5210128V 24**	$35.44
	2	60	33-400	44 x 75	216	**5210233C 24**	$207.62	24	**5210233V 24**	$50.69
	4	125	38-400	54 x 95	180	**5210438C 24**	$223.10	24	**5210438V 24**	$59.91
	8	250	45-400	66 x 119	84	**5210845C 24**	$126.47	12	**5210845V 24**	$41.89
	16	500	53-400	80 x 146	60	**5211653C 24**	$125.15	12	**5211653V 24**	$50.35
	32	1000	53-400	99 x 178	36	**5213253C 24**	$104.77	12	**5213253V 24**	$67.27
Taperseal	1	30	28-400	37 x 65	432	**5210128C 25**	$254.32	24	**5210128V 25**	$34.70
	2	60	33-400	44 x 75	216	**5210233C 25**	$207.62	24	**5210233V 25**	$40.48
	4	125	38-400	54 x 95	180	**5210438C 25**	$221.14	24	**5210438V 25**	$44.10
PTFE-Faced LDPE Foam	1	30	28-400	37 x 65	432	**5210128C 26**	$288.53	24	**5210128V 26**	$61.37
	2	60	33-400	44 x 75	216	**5210233C 26**	$235.62	24	**5210233V 26**	$72.44
	4	125	38-400	54 x 95	180	**5210438C 26**	$237.10	24	**5210438V 26**	$87.35
	8	250	45-400	66 x 119	84	**5210845C 26**	$132.20	12	**5210845V 26**	$57.96
	16	500	53-400	80 x 146	60	**5211653C 26**	$132.93	12	**5211653V 26**	$75.34
	32	1000	53-400	99 x 178	36	**5213253C 26**	$109.44	12	**5213253V 26**	$97.25
No Caps	1	30	28-400	37 x 65	432	**5210128B**	$204.61	—	—	—
	2	60	33-400	44 x 75	216	**5210233B**	$176.86	—	—	—
	4	125	38-400	54 x 95	180	**5210438B**	$240.35	—	—	—
	8	250	45-400	66 x 119	84	**5210845B**	$101.59	—	—	—
	16	500	53-400	80 x 146	60	**5211653B**	$105.08	—	—	—
	32	1000	53-400	99 x 178	36	**5213253B**	$92.35	—	—	—

	Capacity oz.	Capacity mL	GPI Finish	Dia. x Ht. (mm)	Qty. per Module	Modules per Pallet	Pieces per Pallet	Kimble Art. No.	Price per Pallet	
No Caps	1	30	28-400	37 x 65	144	96	13824	**5210128P**	$5,026.90	—
	2	60	33-400	44 x 75	72	112	8064	**5210233P**	$4,002.27	—
	4	125	38-400	54 x 95	60	66	3960	**5210438P**	$2,062.70	—
	8	250	45-400	66 x 119	28	90	2520	**5210845P**	$1,746.05	—
	16	500	53-400	80 x 146	20	56	1120	**5211653P**	$1,266.78	—
	32	1000	53-400	99 x 178	12	36	432	**5213253P**	$939.50	—



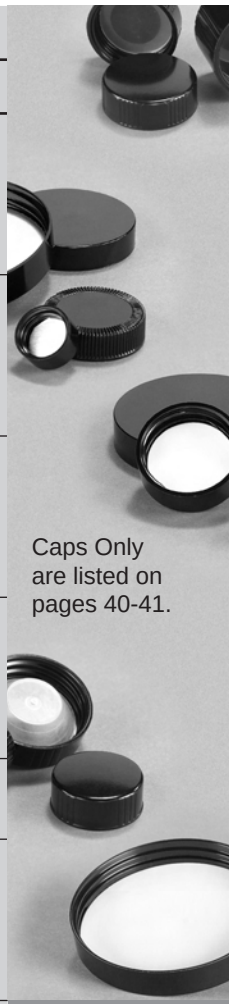
Amber Glass Wide-Mouth Packers

- Amber protects light-sensitive contents
- Wide-mouth design for efficient addition and removal of contents
- Type III soda-lime glass

Choose from Convenience Packs and Bulk Packs in a variety of cap / liner combinations. Pallet Packs come without caps and are listed at the bottom of the chart.

Amber Wide-Mouth Packers					Bulk Packs — Shrink Modules with Caps in Bags			Convenience Packs (Caps Attached)		
Caps with	Capacity oz.	Capacity mL	GPI Finish	Dia. x Ht. (mm)	Case Qty.	Kimble Art. No.	Case Price	Case Qty.	Kimble Art. No.	Case Price
Pulp / Vinyl	1	30	28-400	37 x 65	432	**5220128C 21**	$243.99	24	**5220128V 21**	$34.47
	2	60	33-400	44 x 75	216	**5220233C 21**	$203.42	24	**5220233V 21**	$49.30
	4	125	38-400	54 x 95	180	**5220438C 21**	$215.48	24	**5220438V 21**	$58.27
	8	250	45-400	66 x 119	84	**5220845C 21**	$120.73	12	**5220845V 21**	$40.75
	16	500	53-400	80 x 146	60	**5221653C 21**	$121.72	12	**5221653V 21**	$48.96
	32	1000	53-400	99 x 178	36	**5223253C 21**	$104.27	12	**5223253V 21**	$65.43
Solid PE	1	30	28-400	37 x 65	432	**5220128C 22**	$245.18	24	**5220128V 22**	$56.79
	2	60	33-400	44 x 75	216	**5220233C 22**	$204.02	24	**5220233V 22**	$68.48
	4	125	38-400	54 x 95	180	**5220438C 22**	$215.97	24	**5220438V 22**	$81.14
	8	250	45-400	66 x 119	84	**5220845C 22**	$121.54	12	**5220845V 22**	$55.19
	16	500	53-400	80 x 146	60	**5221653C 22**	$121.89	12	**5221653V 22**	$70.95
	32	1000	53-400	99 x 178	36	**5223253C 22**	$104.36	12	**5223253V 22**	$93.04
Tinfoil	1	30	28-400	37 x 65	432	**5220128C 23**	$246.36	24	**5220128V 23**	$34.81
	2	60	33-400	44 x 75	216	**5220233C 23**	$204.61	24	**5220233V 23**	$49.80
	4	125	38-400	54 x 95	180	**5220438C 23**	$216.47	24	**5220438V 23**	$58.85
	8	250	45-400	66 x 119	84	**5220845C 23**	$121.77	12	**5220845V 23**	$41.15
	16	500	53-400	80 x 146	60	**5221653C 23**	$122.04	12	**5221653V 23**	$49.45
	32	1000	53-400	99 x 178	36	**5223253C 23**	$104.47	12	**5223253V 23**	$66.08
White Rubber	1	30	28-400	37 x 65	432	**5220128C 24**	$265.22	24	**5220128V 24**	$36.54
	2	60	33-400	44 x 75	216	**5220233C 24**	$217.00	24	**5220233V 24**	$52.26
	4	125	38-400	54 x 95	180	**5220438C 24**	$232.93	24	**5220438V 24**	$61.77
	8	250	45-400	66 x 119	84	**5220845C 24**	$131.86	12	**5220845V 24**	$43.19
	16	500	53-400	80 x 146	60	**5221653C 24**	$130.73	12	**5221653V 24**	$51.90
	32	1000	53-400	99 x 178	36	**5223253C 24**	$109.68	12	**5223253V 24**	$69.35
Taperseal	1	30	28-400	37 x 65	432	**5220128C 25**	$265.22	24	**5220128V 25**	$35.78
	2	60	33-400	44 x 75	216	**5220233C 25**	$217.00	24	**5220233V 25**	$41.72
	4	125	38-400	54 x 95	180	**5220438C 25**	$230.96	24	**5220438V 25**	$45.46
PTFE-Faced LDPE Foam	1	30	28-400	37 x 65	432	**5220128C 26**	$299.43	24	**5220128V 26**	$63.26
	2	60	33-400	44 x 75	216	**5220233C 26**	$245.00	24	**5220233V 26**	$74.67
	4	125	38-400	54 x 95	180	**5220438C 26**	$246.93	24	**5220438V 26**	$90.05
	8	250	45-400	66 x 119	84	**5220845C 26**	$137.59	12	**5220845V 26**	$59.76
	16	500	53-400	80 x 146	60	**5221653C 26**	$138.51	12	**5221653V 26**	$77.67
	32	1000	53-400	99 x 178	36	**5223253C 26**	$114.35	12	**5223253V 26**	$100.26
No Caps	1	30	28-400	37 x 65	432	**5220128B**	$210.94	—	—	—
	2	60	33-400	44 x 75	216	**5220233B**	$182.33	—	—	—
	4	125	38-400	54 x 95	180	**5220438B**	$247.78	—	—	—
	8	250	45-400	66 x 119	84	**5220845B**	$104.73	—	—	—
	16	500	53-400	80 x 146	60	**5221653B**	$108.34	—	—	—
	32	1000	53-400	99 x 178	36	**5223253B**	$95.20	—	—	—

	Capacity oz.	Capacity mL	GPI Finish	Dia. x Ht. (mm)	Qty. per Module	Modules per Pallet	Pieces per Pallet	Kimble Art. No.	Price per Pallet	
No Caps	1	30	28-400	37 x 65	144	96	13824	**5220128P**	$5,162.77	—
	2	60	33-400	44 x 75	72	112	8064	**5220233P**	$4,081.53	—
	4	125	38-400	54 x 95	60	66	3960	**5220438P**	$2,101.62	—
	8	250	45-400	66 x 119	28	90	2520	**5220845P**	$1,770.81	—
	16	500	53-400	80 x 146	20	56	1120	**5221653P**	$1,265.85	—
	32	1000	53-400	99 x 178	12	36	432	**5223253P**	$938.30	—



Caps Only are listed on pages 40-41.

Bottles Only
Caps not included.

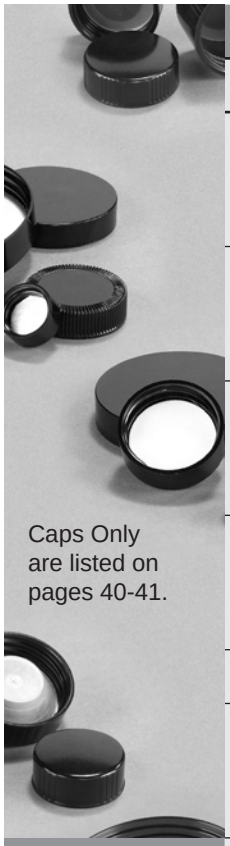
Bottles Only Pallet Packs
Caps not included.



Clear Glass AC Medium Rounds

- Wide-mouth design for efficient addition and removal of contents
- Clear glass allows for easy viewing of contents
- Easy-to-use, versatile storage for solids, liquids, powders and specimens
- Type III soda-lime glass

Choose from Convenience Packs and Bulk Packs in a variety of cap / liner combinations. Pallet Packs come without caps and are listed at the bottom of the chart.



Caps Only are listed on pages 40-41.

Bottles Only
Caps not included.

Bottles Only Pallet Packs
Caps not included.

Clear, AC Medium Rounds					Bulk Packs — Shrink Modules with Caps in Bags			Convenience Packs (Caps Attached)		
Caps with	Capacity oz.	Capacity mL	GPI Finish	Dia. x Ht. (mm)	Case Qty.	Kimble Art. No.	Case Price	Case Qty.	Kimble Art. No.	Case Price
Pulp / Vinyl	1	30	33-400	34 x 68	432	**5710133C 21**	$341.78	48	**5710133V 21**	$84.91
	2	60	38-400	42 x 83	288	**5710238C 21**	$284.54	48	**5710238V 21**	$91.22
	4	125	48-400	51 x 102	144	**5710448C 21**	$224.64	24	**5710448V 21**	$54.59
	8	250	58-400	62 x 127	96	**5710858C 21**	$169.73	24	**5710858V 21**	$68.37
	16	500	70-400	76 x 145	48	**5711670C 21**	$92.34	24	**5711670V 21**	$88.18
Solid PE	1	30	33-400	34 x 68	432	**5710133C 22**	$342.95	48	**5710133V 22**	$117.68
	2	60	38-400	42 x 83	288	**5710238C 22**	$273.92	48	**5710238V 22**	$134.96
	4	125	48-400	51 x 102	144	**5710448C 22**	$158.39	24	**5710448V 22**	$88.57
	8	250	58-400	62 x 127	96	**5710858C 22**	$133.79	24	**5710858V 22**	$115.38
	16	500	70-400	76 x 145	48	**5711670C 22**	$92.47	24	**5711670V 22**	$159.35
Tinfoil	1	30	33-400	34 x 68	432	**5710133C 23**	$344.14	48	**5710133V 23**	$85.75
	2	60	38-400	42 x 83	288	**5710238C 23**	$274.71	48	**5710238V 23**	$92.12
	4	125	48-400	51 x 102	144	**5710448C 23**	$158.79	24	**5710448V 23**	$55.14
	8	250	58-400	62 x 127	96	**5710858C 23**	$134.05	24	**5710858V 23**	$69.06
	16	500	70-400	76 x 145	48	**5711670C 23**	$92.60	24	**5711670V 23**	$89.07
White Rubber	1	30	33-400	34 x 68	432	**5710133C 24**	$368.90	48	**5710133V 24**	$90.00
	2	60	38-400	42 x 83	288	**5710238C 24**	$301.04	48	**5710238V 24**	$96.69
	4	125	48-400	51 x 102	144	**5710448C 24**	$176.08	24	**5710448V 24**	$57.87
	8	250	58-400	62 x 127	96	**5710858C 24**	$152.91	24	**5710858V 24**	$72.48
	16	500	70-400	76 x 145	48	**5711670C 24**	$106.10	24	**5711670V 24**	$93.48
Taperseal	1	30	33-400	34 x 68	432	**5710133C 25**	$398.38	48	**5710133V 25**	$91.70
	2	60	38-400	42 x 83	288	**5710238C 25**	$305.76	48	**5710238V 25**	$98.51
PTFE-Faced LDPE Foam	1	30	33-400	34 x 68	432	**5710133C 26**	$424.92	48	**5710133V 26**	$118.82
	2	60	38-400	42 x 83	288	**5710238C 26**	$323.45	48	**5710238V 26**	$132.23
	4	125	48-400	51 x 102	144	**5710448C 26**	$187.88	24	**5710448V 26**	$89.10
	8	250	58-400	62 x 127	96	**5710858C 26**	$164.31	24	**5710858V 26**	$117.21
	16	500	70-400	76 x 145	48	**5711670C 26**	$114.62	24	**5711670V 26**	$156.74
No Caps	1	30	33-400	34 x 68	432	**5710133B**	$278.94	—	—	—
	2	60	38-400	42 x 83	288	**5710238B**	$218.58	—	—	—
	4	125	48-400	51 x 102	144	**5710448B**	$120.44	—	—	—
	8	250	58-400	62 x 127	96	**5710858B**	$104.83	—	—	—
	16	500	70-400	76 x 145	48	**5711670B**	$72.49	—	—	—

	Capacity oz.	Capacity mL	GPI Finish	Dia. x Ht. (mm)	Qty. per Module	Modules per Pallet	Pieces per Pallet	Kimble Art. No.	Price per Pallet	
No Caps	1	30	33-400	34 x 68	108	144	15552	**5710133P**	$5,208.05	—
	2	60	38-400	42 x 83	96	72	6912	**5710238P**	$3,069.48	—
	4	125	48-400	51 x 102	72	60	4320	**5710448P**	$3,302.21	—
	8	250	58-400	62 x 127	48	48	2304	**5710858P**	$1,861.82	—
	16	500	70-400	76 x 145	24	42	1008	**5711670P**	$1,636.43	—

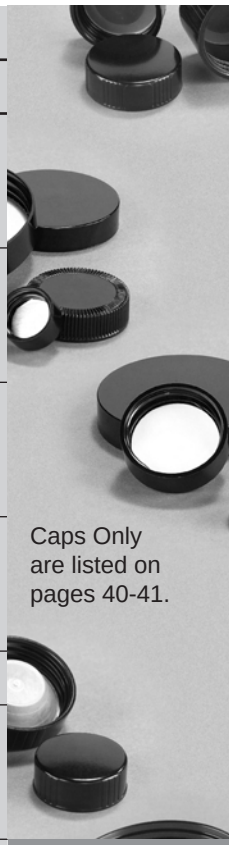


Clear Glass AC Medium Rounds, Graduated

- Wide-mouth design for efficient addition and removal of contents
- Graduated in both milliliters and ounces
- Clear glass allows for easy viewing of contents
- Easy-to-use, versatile storage for solids, liquids, powders and specimens
- Type III soda-lime glass

Choose from Convenience Packs and Corrugated Cartons with Divider Cells (caps bagged) in a variety of cap / liner combinations. Pallet Packs come without caps and are listed at the bottom of the chart. Pallet Packs are not packed in shrink-wrapped modules.

Clear, AC Medium Rounds, Graduated					Corrugated Cartons with Divider Cells - Caps Bagged			Convenience Packs (Caps Attached)		
Caps with	Capacity oz.	Capacity mL	GPI Finish	Dia. x Ht. (mm)	Case Qty.	Kimble Art. No.	Case Price	Case Qty.	Kimble Art. No.	Case Price
Pulp / Vinyl	1	30	33-400	34 x 68	432	**5810133C 21**	$371.10	48	**5810133V 21**	$91.41
	2	60	38-400	42 x 83	288	**5810238C 21**	$359.42	48	**5810238V 21**	$94.44
	4	125	48-400	51 x 102	144	**5810448C 21**	$239.62	24	**5810448V 21**	$58.62
	8	250	58-400	62 x 127	96	**5810858C 21**	$174.72	24	**5810858V 21**	$76.01
	16	500	70-400	76 x 145	48	**5811670C 21**	$95.92	24	**5811670V 21**	$99.78
Solid PE	1	30	48-400	51 x 102	432	**5810133C 22**	$372.29	48	**5810133V 22**	$126.95
	2	60	58-400	62 x 127	288	**5810238C 22**	$297.99	48	**5810238V 22**	$138.24
	4	125	48-400	51 x 102	144	**5810448C 22**	$168.75	24	**5810448V 22**	$93.14
	8	250	58-400	62 x 127	96	**5810858C 22**	$142.77	24	**5810858V 22**	$121.92
	16	500	70-400	76 x 145	48	**5811670C 22**	$96.05	24	**5811670V 22**	$163.01
Tinfoil	1	30	33-400	34 x 68	432	**5810133C 23**	$373.46	48	**5810133V 23**	$92.32
	2	60	38-400	42 x 83	288	**5810238C 23**	$298.78	48	**5810238V 23**	$95.38
	4	125	48-400	51 x 102	144	**5810448C 23**	$169.14	24	**5810448V 23**	$59.21
	8	250	58-400	62 x 127	96	**5810858C 23**	$143.03	24	**5810858V 23**	$76.77
	16	500	70-400	76 x 145	48	**5811670C 23**	$96.18	24	**5811670V 23**	$100.78
White Rubber	1	30	33-400	34 x 68	432	**5810133C 24**	$398.23	48	**5810133V 24**	$93.59
	2	60	38-400	42 x 83	288	**5810238C 24**	$325.12	48	**5810238V 24**	$97.04
	4	125	48-400	51 x 102	144	**5810448C 24**	$186.44	24	**5810448V 24**	$74.22
	8	250	58-400	62 x 127	96	**5810858C 24**	$161.90	24	**5810858V 24**	$86.46
	16	500	70-400	76 x 145	48	**5811670C 24**	$109.68	24	**5811670V 24**	$105.76
Taperseal	1	30	33-400	34 x 68	432	**5810133C 25**	$427.71	48	**5810133V 25**	$100.87
	2	60	38-400	42 x 83	288	**5810238C 25**	$329.84	48	**5810238V 25**	$108.36
PTFE-Faced LDPE Foam	1	30	33-400	34 x 68	432	**5810133C 26**	$454.25	48	**5810133V 26**	$128.33
	2	60	38-400	42 x 83	288	**5810238C 26**	$347.53	48	**5810238V 26**	$168.64
	4	125	48-400	51 x 102	144	**5810448C 26**	$198.23	24	**5810448V 26**	$120.24
	8	250	58-400	62 x 127	96	**5810858C 26**	$173.31	24	**5810858V 26**	$142.57
	16	500	70-400	76 x 145	48	**5811670C 26**	$118.20	24	**5811670V 26**	$181.28
No Caps	1	30	33-400	34 x 68	432	**5810133B**	$305.33	—	—	—
	2	60	38-400	42 x 83	288	**5810238B**	$240.25	—	—	—
	4	125	48-400	51 x 102	144	**5810448B**	$129.76	—	—	—
	8	250	58-400	62 x 127	96	**5810858B**	$112.92	—	—	—
	16	500	70-400	76 x 145	48	**5811670B**	$75.71	—	—	—



Caps Only are listed on pages 40-41.

Bottles Only
Caps not included.

	Capacity oz.	Capacity mL	GPI Finish	Dia. x Ht. (mm)	Pieces per Cart.	Cartons per Pallet	Pieces per Pallet	Kimble Art. No.	Price per Pallet	
No Caps	1	30	33-400	34 x 68	432	18	7776	**5810133P**	$2,890.47	—
	2	60	38-400	42 x 83	288	18	5184	**5810238P**	$2,555.34	—
	4	125	48-400	51 x 102	144	16	2304	**5810448P**	$1,954.91	—
	8	250	58-400	62 x 127	96	20	1920	**5810858P**	$1,722.18	—
	16	500	70-400	76 x 145	48	21	1008	**5811670P**	$1,816.43	—

Bottles Only Pallet Packs
Caps not included.

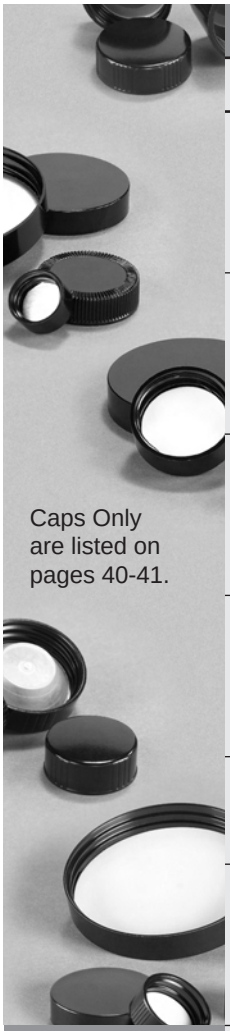
Please Note: Pallet Packs are not packed in shrink-wrapped modules.



Clear Glass French Squares

- Wide-mouth design for efficient addition and removal of contents
- Square shape bottles maximize use of shelf space
- Clear glass allows for easy viewing of contents
- Type III soda-lime glass

Choose from Convenience Packs and Bulk Packs in a variety of cap / liner combinations. Pallet Packs come without caps and are listed at the bottom of the chart.



Caps Only are listed on pages 40-41.

Clear, French Squares					Bulk Packs — Shrink Modules with Caps in Bags			Convenience Packs (Caps Attached)		
Caps with	Capacity oz.	Capacity mL	GPI Finish	Wd. x Ht. (mm)	Case Qty.	Kimble Art. No.	Case Price	Case Qty.	Kimble Art. No.	Case Price
Pulp / Vinyl	0.5	15	20-400	26 x 62	576	**5611220C 21**	$455.23	48	**5611220V 21**	$92.52
	1	30	24-400	31 x 72	280	**5610124C 21**	$228.19	48	**5610124V 21**	$91.67
	2	60	28-400	39 x 87	240	**5610228C 21**	$253.50	48	**5610228V 21**	$105.53
	4	125	33-400	45 x 111	120	**5610433C 21**	$192.14	24	**5610433V 21**	$66.45
	8	250	43-400	56 x 137	84	**5610843C 21**	$143.37	24	**5610843V 21**	$83.17
	16	500	48-400	68 x 167	40	**5611648C 21**	$88.55	24	**5611648V 21**	$108.77
Solid PE	0.5	15	20-400	26 x 62	576	**5611220C 22**	$456.81	48	**5611220V 22**	$116.27
	1	30	24-400	31 x 72	280	**5610124C 22**	$228.95	48	**5610124V 22**	$128.08
	2	60	28-400	39 x 87	240	**5610228C 22**	$254.16	48	**5610228V 22**	$141.51
	4	125	33-400	45 x 111	120	**5610433C 22**	$192.46	24	**5610433V 22**	$85.60
	8	250	43-400	56 x 137	84	**5610843C 22**	$143.60	24	**5610843V 22**	$118.96
	16	500	48-400	68 x 167	40	**5611648C 22**	$88.66	24	**5611648V 22**	$147.85
Tinfoil	0.5	15	20-400	26 x 62	576	**5611220C 23**	$458.38	48	**5611220V 23**	$93.44
	1	30	24-400	31 x 72	280	**5610124C 23**	$229.72	48	**5610124V 23**	$92.58
	2	60	28-400	39 x 87	240	**5610228C 23**	$254.81	48	**5610228V 23**	$106.59
	4	125	33-400	45 x 111	120	**5610433C 23**	$192.80	24	**5610433V 23**	$67.11
	8	250	43-400	56 x 137	84	**5610843C 23**	$143.83	24	**5610843V 23**	$84.00
	16	500	48-400	68 x 167	40	**5611648C 23**	$88.76	24	**5611648V 23**	$109.87
White Rubber	0.5	15	20-400	26 x 62	576	**5611220C 24**	$467.02	48	**5611220V 24**	$97.62
	1	30	24-400	31 x 72	280	**5610124C 24**	$237.36	48	**5610124V 24**	$98.60
	2	60	28-400	39 x 87	240	**5610228C 24**	$265.29	48	**5610228V 24**	$113.50
	4	125	33-400	45 x 111	120	**5610433C 24**	$199.67	24	**5610433V 24**	$71.74
	8	250	43-400	56 x 137	84	**5610843C 24**	$151.63	24	**5610843V 24**	$90.53
	16	500	48-400	68 x 167	40	**5611648C 24**	$93.57	24	**5611648V 24**	$138.10
Taperseal	0.5	15	20-400	26 x 62	576	**5611220C 25**	$477.25	48	**5611220V 25**	$76.17
	1	30	24-400	31 x 72	280	**5610124C 25**	$239.27	48	**5610124V 25**	$79.65
	2	60	28-400	39 x 87	240	**5610228C 25**	$268.57	48	**5610228V 25**	$90.13
	4	125	33-400	45 x 111	120	**5610433C 25**	$207.86	24	**5610433V 25**	$49.54
PTFE-Faced LDPE Foam	0.5	15	20-400	26 x 62	576	**5611220C 26**	$484.33	48	**5611220V 26**	$118.57
	1	30	24-400	31 x 72	280	**5610124C 26**	$248.82	48	**5610124V 26**	$138.94
	2	60	28-400	39 x 87	240	**5610228C 26**	$284.29	48	**5610228V 26**	$156.62
	4	125	33-400	45 x 111	120	**5610433C 26**	$215.24	24	**5610433V 26**	$92.29
	8	250	43-400	56 x 137	84	**5610843C 26**	$157.93	24	**5610843V 26**	$130.62
	16	500	48-400	68 x 167	40	**5611648C 26**	$96.84	24	**5611648V 26**	$159.94
Bottles Only Caps not included.										
No Caps	0.5	15	20-400	26 x 62	576	**5611220B**	$382.78	—	—	—
	1	30	24-400	31 x 72	280	**5610124B**	$191.27	—	—	—
	2	60	28-400	39 x 87	240	**5610228B**	$215.18	—	—	—
	4	125	33-400	45 x 111	120	**5610433B**	$164.96	—	—	—
	8	250	43-400	56 x 137	84	**5610843B**	$117.37	—	—	—
	16	500	48-400	68 x 167	40	**5611648B**	$73.65	—	—	—

	Capacity oz.	Capacity mL	GPI Finish	Wd. x Ht. (mm)	Qty. per Module	Modules per Pallet	Pieces per Pallet	Kimble Art. No.	Price per Pallet	
Bottles Only Pallet Packs Caps not included.										
No Caps	0.5	15	20-400	26 x 62	192	136	26112	**5611220P**	$15,526.04	—
	1	30	24-400	31 x 72	140	112	15680	**5610124P**	$6,472.33	—
	2	60	28-400	39 x 87	120	72	8640	**5610228P**	$5,094.84	—
	4	125	33-400	45 x 111	60	81	4860	**5610433P**	$3,056.90	—
	8	250	43-400	56 x 137	42	56	2352	**5610843P**	$3,213.05	—
	16	500	48-400	68 x 167	40	30	1200	**5611648P**	$2,140.54	—



Clear Glass Oil Sample Bottles with Cork Stoppers

Used for Sample Processing in the Petrochemical Industry

- Packed in corrugated cartons with divider cells
- 144 cork stoppers included in separate bag
- Clear glass allows for easy viewing of contents
- Type III soda-lime glass

Clear Oil Sample Bottles				Corrugated Cartons with Divider Cells - Bagged Corks			Convenience Packs Not Available		
Cork Stopper	Capacity oz.	Capacity mL	Dia. x Ht. (mm)	Case Qty.	Kimble Art. No.	Case Price	—	—	—
	4	125	37 x 163	144	**5910400C 30**	$388.11	—	—	—





Clear Glass Square Tablet Bottles

- Wide-mouth design for efficient addition and removal of contents
- Packed in corrugated cartons with divider cells
- Clear glass allows for easy viewing of contents
- Type III soda-lime glass

Choose from a variety of cap / liner combinations or bottles only.

Clear, Square Tablet Bottles					Corrugated Cartons with Divider Cells - Caps Bagged			Convenience Packs Not Available		
Caps with	Capacity oz.	Capacity mL	GPI Finish	Wd. x Ht. (mm)	Case Qty.	Kimble Art. No.	Case Price	—	—	—
Pulp / Vinyl	1	30	33-400	34 x 59	288	**5910133C 21**	$337.26	—	—	—
	2	60	33-400	42 x 86	144	**5910233C 21**	$202.98	—	—	—
Taperseal	1	30	33-400	34 x 59	288	**5910133C 25**	$382.68	—	—	—
	2	60	33-400	42 x 86	144	**5910233C 25**	$121.43	—	—	—
PTFE-Faced LDPE Foam	1	30	33-400	34 x 59	288	**5910133C 26**	$479.45	—	—	—
	2	60	33-400	42 x 86	144	**5910233C 26**	$275.26	—	—	—
No Caps	1	30	33-400	34 x 59	288	**5910133B**	$211.24	—	—	—
	2	60	33-400	42 x 86	144	**5910233B**	$137.02	—	—	—



Caps Only are listed on pages 40-41.

Bottles Only
Caps not included



Clear Glass Standard Wide-Mouths

- Wide-mouth design for efficient addition and removal of contents
- Rounded shoulders
- Clear glass allows for easy viewing of contents
- Type III soda-lime glass

Choose from Convenience Packs and Bulk Packs in a variety of cap / liner combinations. Pallet Packs come without closures and are listed at the bottom of the chart.



Caps Only are listed on pages 40-41.



Clear, Standard Wide-Mouths					Bulk Packs — Shrink Modules with Caps in Bags			Convenience Packs (Caps Attached)		
Caps with	Capacity oz.	Capacity mL	GPI Finish	Dia. x Ht. (mm)	Case Qty.	Kimble Art. No.	Case Price	Case Qty.	Kimble Art. No.	Case Price
Pulp / Vinyl	4	125	48-400	52 x 84	24	**5310448C 21**	$27.68	24	**5310448V 21**	$58.97
	8	250	58-400	63 x 110	24	**5310858C 21**	$33.54	24	**5310858V 21**	$70.76
Solid PE	4	125	48-400	52 x 84	24	**5310448C 22**	$27.75	24	**5310448V 22**	$69.53
	8	250	58-400	63 x 110	24	**5310858C 22**	$33.60	24	**5310858V 22**	$91.41
Tinfoil	4	125	48-400	52 x 84	24	**5310448C 23**	$27.81	24	**5310448V 23**	$59.56
	8	250	58-400	63 x 110	24	**5310858C 23**	$33.66	24	**5310858V 23**	$71.47
White Rubber	4	125	48-400	52 x 84	24	**5310448C 24**	$30.70	24	**5310448V 24**	$62.50
	8	250	58-400	63 x 110	24	**5310858C 24**	$38.39	24	**5310858V 24**	$75.00
PTFE-Faced LDPE Foam	4	125	48-400	52 x 84	24	**5310448C 26**	$32.67	24	**5310448V 26**	$63.97
	8	250	58-400	63 x 110	24	**5310858C 26**	$41.24	24	**5310858V 26**	$77.16
Bottles Only Caps not included. No Caps	4	125	48-400	52 x 84	24	**5310448B**	$21.29	—	—	—
	8	250	58-400	63 x 110	24	**5310858B**	$26.35	—	—	—

Bottles Only Pallet Packs Caps not included.	Capacity oz.	Capacity mL	GPI Finish	Dia. x Ht. (mm)	Qty. per Module	Modules per Pallet	Pieces per Pallet	Kimble Art. No.	Price per Pallet	
No Caps	4	125	48-400	52 x 84	24	216	5184	**5310448P**	$3,897.43	—
	8	250	58-400	63 x 110	24	90	2160	**5310858P**	$1,789.92	—



Clear Glass Testing Jars

- Wide-mouth design for efficient addition and removal of contents
- Clear glass allows for easy viewing of contents
- Type III soda-lime glass

Choose from Bulk Packs in two cap / liner combinations.



Clear Glass Straight-Sided Jars, Tall

- Wide-mouth design for efficient addition and removal of contents
- Clear glass allows for easy viewing of contents
- Type III soda-lime glass

Choose from Convenience Packs and Bulk Packs in a variety of cap / liner combinations. Pallet Packs come without closures and are listed at the bottom of the chart.

Please note that all 32 ounce jars in this group are packed in corrugated cartons with divider cells. Pallets of 32 ounce jars contain 54 cartons.

Clear, Straight-Sided Jars, Tall					Bulk Packs — Shrink Modules with Caps in Bags			Convenience Packs (Caps Attached)		
Caps with	Capacity oz.	Capacity mL	GPI Finish	Dia. x Ht. (mm)	Case Qty.	Kimble Art. No.	Case Price	Case Qty.	Kimble Art. No.	Case Price
Pulp / Vinyl	4	125	48-400	51 X 102	24	**5510448C 81**	$30.59	24	**5510448V 81**	$52.52
	8	250	58-400	62 X 127	24	**5510858C 81**	$45.64	24	**5510858V 81**	$56.22
	16	500	70-400	76 X 145	12	**5511670C 81**	$36.15	12	**5511670V 81**	$37.09
	32*	1000	89-400	95 X 170	12	**5513289C 81**	$34.59	12	**5513289V 81**	$39.62
Solid PE	4	125	48-400	51 X 102	24	**5510448C 82**	$30.65	24	**5510448V 82**	$88.95
	8	250	58-400	62 X 127	24	**5510858C 82**	$45.70	24	**5510858V 82**	$96.84
	16	500	70-400	76 X 145	12	**5511670C 82**	$36.19	12	**5511670V 82**	$64.68
	32*	1000	89-400	95 X 170	12	**5513289C 82**	$34.62	12	**5513289V 82**	$66.68
Tinfoil	4	125	48-400	51 X 102	24	**5510448C 83**	$30.71	24	**5510448V 83**	$53.05
	8	250	58-400	62 X 127	24	**5510858C 83**	$45.77	24	**5510858V 83**	$56.78
	16	500	70-400	76 X 145	12	**5511670C 83**	$36.22	12	**5511670V 83**	$37.46
	32*	1000	89-400	95 X 170	12	**5513289C 83**	$34.65	12	**5513289V 83**	$40.02
White Rubber	4	125	48-400	51 X 102	24	**5510448C 84**	$33.60	24	**5510448V 84**	$55.67
	8	250	58-400	62 X 127	24	**5510858C 84**	$50.48	24	**5510858V 84**	$59.59
	16	500	70-400	76 X 145	12	**5511670C 84**	$39.43	12	**5511670V 84**	$39.31
	32*	1000	89-400	95 X 170	12	**5513289C 84**	$41.63	12	**5513289V 84**	$42.00
PTFE-Faced LDPE Foam	4	125	48-400	51 X 102	24	**5510448C 86**	$35.57	24	**5510448V 86**	$98.87
	8	250	58-400	62 X 127	24	**5510858C 86**	$53.33	24	**5510858V 86**	$110.05
	16	500	70-400	76 X 145	12	**5511670C 86**	$42.38	12	**5511670V 86**	$100.94
	32*	1000	89-400	95 X 170	12	**5513289C 86**	$44.42	12	**5513289V 86**	$117.07
No Caps	4	125	48-400	51 X 102	24	**5510448B**	$24.18	—	—	—
	8	250	58-400	62 X 127	24	**5510858B**	$34.33	—	—	—
	16	500	70-400	76 X 145	12	**5511670B**	$37.20	—	—	—
	32*	1000	89-400	95 X 170	12	**5513289B**	$43.61	—	—	—



Caps Only are listed on pages 40-41.



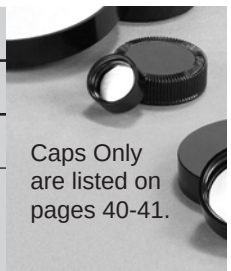
Jars Only
Caps not included.

	Capacity oz.	Capacity mL	GPI Finish	Dia. x Ht. (mm)	Qty. per Module	Modules per Pallet	Pieces per Pallet	Kimble Art. No.	Price per Pallet	
No Caps	4	125	48-400	51 X 102	72	60	4320	**5510448P**	$2,504.96	—
	8	250	58-400	62 X 127	48	48	2304	**5510858P**	$2,026.62	—
	16	500	70-400	76 X 145	24	42	1008	**5511670P**	$1,455.48	—
	32*	1000	89-400	95 X 170	12	54 (cartons)*	648	**5513289P**	$1,230.18	—

Jars Only
Pallet Packs
Caps not included.

** All 32 ounce jars in this group are packed in corrugated cartons with divider cells. Pallets of 32 ounce jars contain 54 cartons.*

Clear, Testing Jars					Bulk Packs — Shrink Modules with Caps in Bags			Convenience Packs Not Available		
Caps with	Capacity oz.	Capacity mL	GPI Finish	Dia. x Ht. (mm)	Case Qty.	Kimble Art. No.	Case Price			
Pulp / Vinyl	2	60	43-400	42 x 83	216	**5910243C 21**	$293.87	—	—	—
PTFE-Faced LDPE Foam	2	60	43-400	42 x 83	216	**5910243C 26**	$457.42	—	—	—
No Caps	2	60	43-400	42 x 83	216	**5910243B**	$160.22	—	—	—



Caps Only are listed on pages 40-41.

Jars Only
Caps not included.

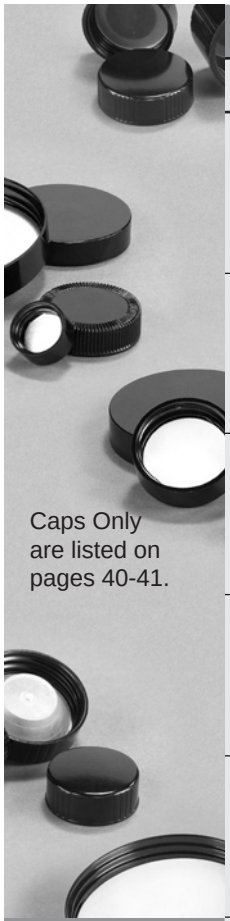


Clear Glass Straight-Sided Jars

- Wide-mouth design for efficient addition and removal of contents
- Clear glass allows for easy viewing of contents
- Type III soda-lime glass

Choose from Convenience Packs and Bulk Packs in a variety of cap / liner combinations. Pallet Packs come without caps and are listed at the bottom of the chart.

Please note that all 32 ounce jars in this group are packed in corrugated cartons with divider cells. Pallets of 32 ounce jars contain 54 cartons.



Caps Only are listed on pages 40-41.

Jars Only
Caps not included.

Clear, Straight-Sided Jars					Bulk Packs — Shrink Modules with Caps in Bags			Convenience Packs (Caps Attached)		
Caps with	Capacity oz.	Capacity mL	GPI Finish	Dia. x Ht. (mm)	Case Qty.	Kimble Art. No.	Case Price	Case Qty.	Kimble Art. No.	Case Price
Pulp / Vinyl	2	60	53-400	55 x 48	216	**5410253C 21**	$240.95	24	**5410253V 21**	$56.66
	4	125	58-400	60 x 68	144	**5410458C 21**	$175.14	24	**5410458V 21**	$60.65
	6	180	63-400	66 x 79	24	**5410663C 21**	$34.47	12	**5410663V 21**	$40.01
	8	250	70-400	73 x 88	24	**5410870C 21**	$38.10	12	**5410870V 21**	$42.74
	16	500	89-400	91 x 95	12	**5411689C 21**	$39.00	12	**5411689V 21**	$56.73
	32*	1000	89-400	95 x 170	12	**5413289C 21**	$45.00	12	**5413289V 21**	$72.54
Solid PE	2	60	53-400	55 x 48	216	**5410253C 22**	$241.54	24	**5410253V 22**	$95.96
	4	125	58-400	60 x 68	144	**5410458C 22**	$175.53	24	**5410458V 22**	$104.47
	6	180	63-400	66 x 79	24	**5410663C 22**	$34.53	12	**5410663V 22**	$69.77
	8	250	70-400	73 x 88	24	**5410870C 22**	$38.17	12	**5410870V 22**	$71.94
	16	500	89-400	91 x 95	12	**5411689C 22**	$39.03	12	**5411689V 22**	$111.42
	32*	1000	89-400	95 x 170	12	**5413289C 22**	$45.03	12	**5413289V 22**	$125.26
Tinfoil	2	60	53-400	55 x 48	216	**5410253C 23**	$242.13	24	**5410253V 23**	$57.22
	4	125	58-400	60 x 68	144	**5410458C 23**	$175.93	24	**5410458V 23**	$61.26
	6	180	63-400	66 x 79	24	**5410663C 23**	$34.59	12	**5410663V 23**	$40.41
	8	250	70-400	73 x 88	24	**5410870C 23**	$38.23	12	**5410870V 23**	$43.17
	16	500	89-400	91 x 95	12	**5411689C 23**	$39.06	12	**5411689V 23**	$57.29
	32*	1000	89-400	95 x 170	12	**5413289C 23**	$45.06	12	**5413289V 23**	$73.27
White Rubber	2	60	53-400	55 x 48	216	**5410253C 24**	$273.38	24	**5410253V 24**	$60.06
	4	125	58-400	60 x 68	144	**5410458C 24**	$204.22	24	**5410458V 24**	$73.61
	6	180	63-400	66 x 79	24	**5410663C 24**	$41.02	12	**5410663V 24**	$42.41
	8	250	70-400	73 x 88	24	**5410870C 24**	$44.98	12	**5410870V 24**	$45.30
	16	500	89-400	91 x 95	12	**5411689C 24**	$46.04	12	**5411689V 24**	$60.13
	32*	1000	89-400	95 x 170	12	**5413289C 24**	$52.04	12	**5413289V 24**	$76.90
PTFE-Faced LDPE Foam	2	60	53-400	55 x 48	216	**5410253C 26**	$301.39	24	**5410253V 26**	$106.66
	4	125	58-400	60 x 68	144	**5410458C 26**	$221.32	24	**5410458V 26**	$118.73
	6	180	63-400	66 x 79	24	**5410663C 26**	$44.95	12	**5410663V 26**	$108.89
	8	250	70-400	73 x 88	24	**5410870C 26**	$53.65	12	**5410870V 26**	$126.29
	16	500	89-400	91 x 95	12	**5411689C 26**	$48.83	12	**5411689V 26**	$142.78
	32*	1000	89-400	95 x 170	12	**5413289C 26**	$54.83	12	**5413289V 26**	$176.90
No Caps	2	60	53-400	55 x 48	216	**5410253B**	$183.68	—	—	—
	4	125	58-400	60 x 68	144	**5410458B**	$134.63	—	—	—
	6	180	63-400	66 x 79	24	**5410663B**	$24.71	—	—	—
	8	250	70-400	73 x 88	24	**5410870B**	$28.98	—	—	—
	16	500	89-400	91 x 95	12	**5411689B**	$31.41	—	—	—
	32*	1000	89-400	95 x 170	12	**5413289B**	$36.82	—	—	—

Jars Only Pallet Packs
Caps not included.

Capacity oz.	Capacity mL	GPI Finish	Dia. x Ht. (mm)	Qty. per Module	Modules per Pallet	Pieces per Pallet	Kimble Art. No.	Price per Pallet	
No Caps	2	60	53-400	55 x 48	54	132	7128	**5410253P**	$3,923.03	—
	4	125	58-400	60 x 68	48	105	5040	**5410458P**	$3,591.15	—
	6	180	63-400	66 x 79	24	130	3120	**5410663P**	$2,851.69	—
	8	250	70-400	73 x 88	24	96	2304	**5410870P**	$2,332.30	—
	16	500	89-400	91 x 95	12	110	1320	**5411689P**	$1,887.57	—
	32*	1000	89-400	95 x 170	12	54 (cartons)*	648	**5413289P**	$1,229.12	—

** All 32 ounce jars in this group are packed in corrugated cartons with divider cells. Pallets of 32 ounce jars contain 54 cartons.*



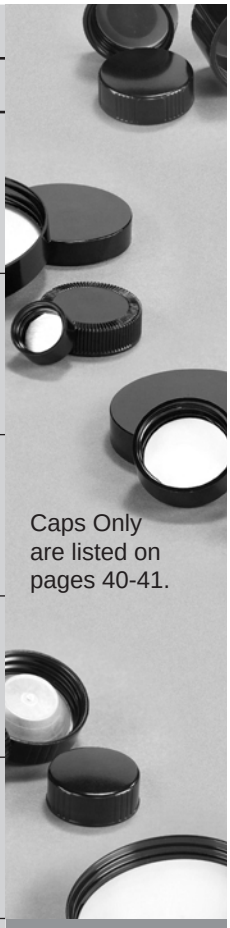
Amber Glass Straight-Sided Jars

- Wide-mouth design for efficient addition and removal of contents
- Amber protects light-sensitive contents
- Type III soda-lime glass

Choose from Convenience Packs and Bulk Packs in a variety of cap / liner combinations. Pallet Packs come without caps and are listed at the bottom of the chart.

Please note that all 32 ounce jars in this group are packed in corrugated cartons with divider cells. Pallets of 32 ounce jars contain 54 cartons.

Amber, Straight-Sided Jars					Bulk Packs — Shrink Modules with Caps in Bags			Convenience Packs (Caps Attached)		
Caps with	Capacity oz.	Capacity mL	GPI Finish	Dia. x Ht. (mm)	Case Qty.	Kimble Art. No.	Case Price	Case Qty.	Kimble Art. No.	Case Price
Pulp / Vinyl	2	60	53-400	55 x 48	216	**5420253C 21**	$215.24	24	**5420253V 21**	$58.35
	4	125	58-400	60 x 68	144	**5420458C 21**	$179.66	24	**5420458V 21**	$62.47
	6	180	63-400	66 x 79	24	**5420663C 21**	$32.02	12	**5420663V 21**	$41.22
	8	250	70-400	73 x 88	24	**5420870C 21**	$36.24	12	**5420870V 21**	$44.02
	16	500	89-400	91 x 95	12	**5421689C 21**	$31.13	12	**5421689V 21**	$58.43
	32*	1000	89-400	95 x 170	12	**5423289C 21**	$30.33	12	**5423289V 21**	$74.71
Solid PE	2	60	53-400	55 x 48	216	**5420253C 22**	$215.83	24	**5420253V 22**	$98.84
	4	125	58-400	60 x 68	144	**5420458C 22**	$180.04	24	**5420458V 22**	$107.61
	6	180	63-400	66 x 79	24	**5420663C 22**	$32.08	12	**5420663V 22**	$71.86
	8	250	70-400	73 x 88	24	**5420870C 22**	$36.31	12	**5420870V 22**	$74.10
	16	500	89-400	91 x 95	12	**5421689C 22**	$31.16	12	**5421689V 22**	$114.76
	32*	1000	89-400	95 x 170	12	**5423289C 22**	$30.36	12	**5423289V 22**	$129.01
Tinfoil	2	60	53-400	55 x 48	216	**5420253C 23**	$216.42	24	**5420253V 23**	$58.94
	4	125	58-400	60 x 68	144	**5420458C 23**	$180.44	24	**5420458V 23**	$63.10
	6	180	63-400	66 x 79	24	**5420663C 23**	$32.15	12	**5420663V 23**	$41.62
	8	250	70-400	73 x 88	24	**5420870C 23**	$36.38	12	**5420870V 23**	$44.46
	16	500	89-400	91 x 95	12	**5421689C 23**	$31.19	12	**5421689V 23**	$59.01
	32*	1000	89-400	95 x 170	12	**5423289C 23**	$30.39	12	**5423289V 23**	$75.46
White Rubber	2	60	53-400	55 x 48	216	**5420253C 24**	$247.68	24	**5420253V 24**	$61.86
	4	125	58-400	60 x 68	144	**5420458C 24**	$208.75	24	**5420458V 24**	$66.22
	6	180	63-400	66 x 79	24	**5420663C 24**	$38.57	12	**5420663V 24**	$43.68
	8	250	70-400	73 x 88	24	**5420870C 24**	$43.13	12	**5420870V 24**	$46.66
	16	500	89-400	91 x 95	12	**5421689C 24**	$38.17	12	**5421689V 24**	$61.93
	32*	1000	89-400	95 x 170	12	**5423289C 24**	$37.37	12	**5423289V 24**	$79.20
PTFE-Faced LDPE Foam	2	60	53-400	55 x 48	216	**5420253C 26**	$275.68	24	**5420253V 26**	$109.87
	4	125	58-400	60 x 68	144	**5420458C 26**	$225.85	24	**5420458V 26**	$122.28
	6	180	63-400	66 x 79	24	**5420663C 26**	$42.50	12	**5420663V 26**	$112.16
	8	250	70-400	73 x 88	24	**5420870C 26**	$52.86	12	**5420870V 26**	$130.07
	16	500	89-400	91 x 95	12	**5421689C 26**	$40.96	12	**5421689V 26**	$147.07
	32*	1000	89-400	95 x 170	12	**5423289C 26**	$40.15	12	**5423289V 26**	$182.21
No Caps	2	60	53-400	55 x 48	216	**5420253B**	$189.20	—	—	—
	4	125	58-400	60 x 68	144	**5420458B**	$138.66	—	—	—
	6	180	63-400	66 x 79	24	**5420663B**	$25.45	—	—	—
	8	250	70-400	73 x 88	24	**5420870B**	$29.85	—	—	—
	16	500	89-400	91 x 95	12	**5421689B**	$32.35	—	—	—
	32*	1000	89-400	95 x 170	12	**5423289B**	$37.92	—	—	—



Caps Only are listed on pages 40-41.

Jars Only
Caps not included.

	Capacity oz.	Capacity mL	GPI Finish	Dia. x Ht. (mm)	Qty. per Module	Modules per Pallet	Pieces per Pallet	Kimble Art. No.	Price per Pallet	
No Caps	2	60	53-400	55 x 48	54	132	7128	**5420253P**	$3,923.03	—
	4	125	58-400	60 x 68	48	105	5040	**5420458P**	$3,591.15	—
	6	180	63-400	66 x 79	24	130	3120	**5420663P**	$2,851.69	—
	8	250	70-400	73 x 88	24	96	2304	**5420870P**	$2,332.30	—
	16	500	89-400	91 x 95	12	110	1320	**5421689P**	$1,887.57	—
	32*	1000	89-400	95 x 170	12	54 (cartons)*	648	**5423289P**	$1,229.12	—

Jars Only
Pallet Packs
Caps not included.

** All 32 ounce jars in this group are packed in corrugated cartons with divider cells. Pallets of 32 ounce jars contain 54 cartons.*



Clear Glass Jugs

- Narrow mouths and sturdy handles for safe pouring
- Clear glass allows for easy viewing of contents
- Type III soda-lime glass

Choose from a variety of cap / liner combinations or jugs only without caps.

Please note that all jugs in this group are packed in corrugated cartons with divider cells.



Caps Only are listed on pages 40-41.

Jugs Only Caps not included.

Clear Jugs					Bulk Packs Not Available			Corrugated Cartons with Divider Cells - Caps Attached		
Caps with	Capacity oz.	Capacity mL	GPI Finish	Dia. x Ht. (mm)	—	—	—	Case Qty.	Kimble Art. No.	Case Price
Pulp / Vinyl	64	2000	38-400	126 x 266	—	—	—	6	**5916438V 21**	$60.73
	130	3840	38-400	168 x 292	—	—	—	4	**5919138V 21**	$56.20
Taperseal	64	2000	38-400	126 x 266	—	—	—	6	**5916438V 25**	$66.70
	130	3840	38-400	168 x 292	—	—	—	4	**5919138V 25**	$58.42
White Rubber	64	2000	38-400	126 x 266	—	—	—	6	**5916438V 24**	$67.77
	130	3840	38-400	168 x 292	—	—	—	4	**5919138V 24**	$48.98
PTFE-Faced LDPE Foam	64	2000	38-400	126 x 266	—	—	—	6	**5916438V 26**	$68.07
	130	3840	38-400	168 x 292	—	—	—	4	**5919138V 26**	$61.71
No Caps	64	2000	38-400	126 x 266	—	—	—	6	**5916438B**	$33.13
	130	3840	38-400	168 x 292	—	—	—	4	**5919138B**	$28.82



Amber Glass Jugs

- Narrow mouths and sturdy handles for safe pouring
- Amber protects light-sensitive contents
- Type III soda-lime glass

Choose from a variety of cap / liner combinations or jugs only without caps.

Please note that all jugs in this group are packed in corrugated cartons with divider cells.

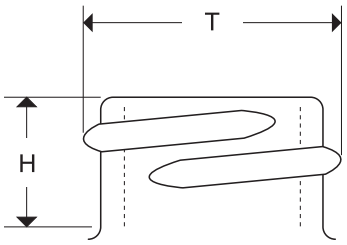


Caps Only are listed on pages 40-41.

Jugs Only Caps not included.

Amber Jugs					Bulk Packs Not Available			Corrugated Cartons with Divider Cells - Caps Attached		
Caps with	Capacity oz.	Capacity mL	GPI Finish	Dia. x Ht. (mm)	—	—	—	Case Qty.	Kimble Art. No.	Case Price
Pulp / Vinyl	80	2400	38-430	137 x 310	—	—	—	6	**5928038V 21**	$38.06
	130	3785	38-400	158 x 342	—	—	—	4	**5929138V 21**	$57.25
Taperseal	80	2400	38-430	137 x 310	—	—	—	6	**5928038V 25**	$39.20
	130	3785	38-400	158 x 342	—	—	—	4	**5929138V 25**	$32.12
White Rubber	80	2400	38-430	137 x 310	—	—	—	6	**5928038V 24**	$39.34
	130	3785	38-400	158 x 342	—	—	—	4	**5929138V 24**	$52.87
PTFE-Faced LDPE Foam	80	2400	38-430	137 x 310				6	**5928038V 26**	$81.06
	130	3785	38-400	158 x 342				4	**5929138V 26**	$58.92
No Caps	80	2400	38-430	137 x 310				6	**5928038B**	$40.00
	130	3785	38-400	158 x 342	—	—	—	4	**5929138B**	$30.46

GPI Thread Finishes

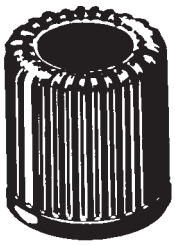




400
425



430



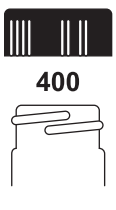
415

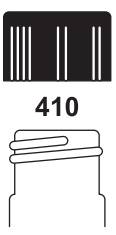
GPI refers to the "Glass Packaging Institute" which is responsible for establishing and issuing uniform standards regarding the types of finishes produced by American glass manufacturers. When a cap is designated as 15-425, it means that the diameter across the threaded area is approximately 15 millimeters. (See the "T" dimension on the diagram above.) The number 425 designates a specific style. Since the "H" dimension is not represented in the size code, the chart below will assist in differentiating styles of finishes having similar thread diameters.

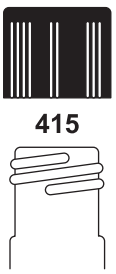
GPI Thread Finish Comparision Chart

"T" Dimension (mm)	"H" Measurement in Inches			
	400 Finish	**410 Finish**	**415 Finish**	**425 Finish**
8	—	—	—	.262-.280 in
10	—	—	—	.273-.291 in
13	—	—	.428-.458 in	.298-.316 in
15	—	—	.533-.563 in	.298-.316 in
18	.359-.377 in	.499-.529 in	.593-.623 in	—
20	.359-.377 in	.530-.560 in	.718-.748 in	—
22	.359-.377 in	—	.813-.843 in	—
24	.388-.406 in	.622-.652 in	.933-.963 in	—
28	.388-.406 in	.684-.714 in	1.058-1.088 in	—
33	.388-.406 in	—	.245-1.275 in	—
38	.388-.406 in	—	—	—
43	.388-.406 in	—	—	—
45	.388-.406 in	—	—	—
48	.388-.406 in	—	—	—
53	.388-.406 in	—	—	—
58	.388-.406 in	—	—	—
63	.388-.406 in	—	—	—
70	.388-.406 in	—	—	—
77	.467-.485 in	—	—	—
83	.467-.485 in	—	—	—
89	.515-.533 in	—	—	—

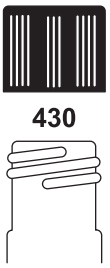
Common Thread Finishes



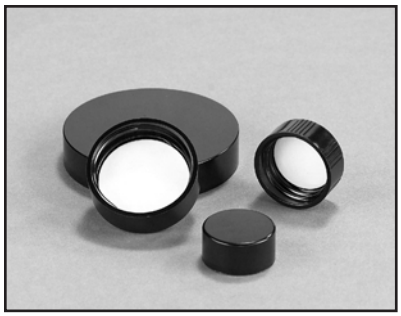








Caps for General Purpose Bottles, Jars and Jugs



Caps with Pulp / Vinyl Liners

- Low cost
- General purpose



Caps with Tinfoil Liners

- Low cost
- Environmental sampling
- General purpose

Phenolic Caps with Pulp / Vinyl Liners

	Bulk Quantities of Caps			Case Quantities of Caps		
GPI Finish	Bulk Qty.	Kimble Art. No.	Bulk Price	Case Qty.	Kimble Art. No.	Case Price
20-400	6300	**75201 20400**	$602.44	144	**75201G 20400**	$16.53
22-400	5300	**75201 22400**	$562.52	144	**75201G 22400**	$18.34
24-400	4400	**75201 24400**	$498.85	144	**75201G 24400**	$19.59
28-400	3200	**75201 28400**	$318.33	144	**75201G 28400**	$17.19
33-400	2400	**75201 33400**	$304.32	144	**75201G 33400**	$21.91
38-400	1800	**75201 38400**	$278.68	144	**75201G 38400**	$26.75
43-400	1638	**75201 43400**	$276.17	144	**75201G 43400**	$29.13
45-400	1404	**75201 45400**	$269.17	144	**75201G 45400**	$33.12
48-400	1248	**75201 48400**	$285.60	144	**75201G 48400**	$39.54
53-400	1404	**75201 53400**	$379.66	144	**75201G 53400**	$46.73
58-400	1296	**75201 58400**	$361.35	144	**75201G 58400**	$48.18
63-400	945	**75201 63400**	$366.77	144	**75201G 63400**	$67.07
70-400	891	**75201 70400**	$386.69	144	**75201G 70400**	$74.99
89-400	440	**75201 89400**	$284.81	144	**75201G 89400**	$111.85

Phenolic Caps with Tinfoil Liners

	Bulk Quantities of Caps			Case Quantities of Caps		
GPI Finish	Bulk Qty.	Kimble Art. No.	Bulk Price	Case Qty.	Kimble Art. No.	Case Price
20-400	6300	**75203 20400**	$662.69	144	**75203G 20400**	$18.18
22-400	5300	**75203 22400**	$618.76	144	**75203G 22400**	$20.18
24-400	4400	**75203 24400**	$548.72	144	**75203G 24400**	$21.55
28-400	3200	**75203 28400**	$350.17	144	**75203G 28400**	$18.91
33-400	2400	**75203 33400**	$334.76	144	**75203G 33400**	$24.11
38-400	1800	**75203 38400**	$306.55	144	**75203G 38400**	$29.43
43-400	1638	**75203 43400**	$303.78	144	**75203G 43400**	$32.04
45-400	1404	**75203 45400**	$296.09	144	**75203G 45400**	$36.44
48-400	1248	**75203 48400**	$314.16	144	**75203G 48400**	$43.50
53-400	1404	**75203 53400**	$417.63	144	**75203G 53400**	$51.40
58-400	1296	**75203 58400**	$397.49	144	**75203G 58400**	$53.00
63-400	945	**75203 63400**	$403.44	144	**75203G 63400**	$73.77
70-400	891	**75203 70400**	$425.36	144	**75203G 70400**	$82.49
89-400	440	**75203 89400**	$313.30	144	**75203G 89400**	$123.04



Caps with Solid PE Liners

- Ideal for strong acid or base samples
- General purpose

Phenolic Caps with Solid PE Liners

	Bulk Quantities of Caps			Case Quantities of Caps		
GPI Finish	Bulk Qty.	Kimble Art. No.	Bulk Price	Case Qty.	Kimble Art. No.	Case Price
20-400	6300	**75202 20400**	$632.57	144	**75202G 20400**	$17.35
22-400	5300	**75202 22400**	$590.64	144	**75202G 22400**	$19.26
24-400	4400	**75202 24400**	$523.79	144	**75202G 24400**	$20.57
28-400	3200	**75202 28400**	$334.25	144	**75202G 28400**	$18.05
33-400	2400	**75202 33400**	$319.54	144	**75202G 33400**	$23.00
38-400	1800	**75202 38400**	$292.61	144	**75202G 38400**	$28.09
43-400	1638	**75202 43400**	$289.97	144	**75202G 43400**	$30.59
45-400	1404	**75202 45400**	$282.63	144	**75202G 45400**	$34.79
48-400	1248	**75202 48400**	$299.88	144	**75202G 48400**	$41.53
53-400	1404	**75202 53400**	$398.64	144	**75202G 53400**	$49.07
58-400	1296	**75202 58400**	$379.42	144	**75202G 58400**	$50.59
63-400	945	**75202 63400**	$385.10	144	**75202G 63400**	$70.42
70-400	891	**75202 70400**	$406.03	144	**75202G 70400**	$78.75
89-400	440	**75202 89400**	$299.06	144	**75202G 89400**	$117.45

Liner Technical Information

Liner Description	Application
pulp / vinyl polyvinyl film adhered to 0.035" pulpboard	general purpose
tinfoil foil laminated to paper and bonded to 0.035" pulpboard	general purpose environmental sampling
solid PE 0.040" polyethylene	general purpose
PTFE-faced LDPE foam 0.005" PTFE 0.050" LDPE foam	general purpose
white rubber 0.050" homogenous white rubber	hermetic sealing for biologicals and other contents requiring sterilization
taperseal (cone-shaped) LDPE	commonly used for liquids, seal is made across the top and the inside diameter of the container

Please Note: All caps / liners should be tested to ensure leak and compatibility performance with contents.



Caps with White Rubber Liners

- Resilient
- Resistant to moisture
- Hermetic sealing

Phenolic Caps with White Rubber

	Bulk Quantities of Caps			Case Quantities of Caps		
GPI Finish	Bulk Qty.	Kimble Art. No.	Bulk Price	Case Qty.	Kimble Art. No.	Case Price
20-400	6300	**75204 20400**	$1,506.11	144	**75204G 20400**	$41.31
22-400	5300	**75204 22400**	$1,406.28	144	**75204G 22400**	$45.85
24-400	4400	**75204 24400**	$1,247.11	144	**75204G 24400**	$48.97
28-400	3200	**75204 28400**	$795.83	144	**75204G 28400**	$42.97
33-400	2400	**75204 33400**	$760.80	144	**75204G 33400**	$54.78
38-400	1800	**75204 38400**	$696.71	144	**75204G 38400**	$66.88
43-400	1638	**75204 43400**	$690.41	144	**75204G 43400**	$72.83
45-400	1404	**75204 45400**	$672.93	144	**75204G 45400**	$82.83
48-400	1248	**75204 48400**	$714.00	144	**75204G 48400**	$98.86
53-400	1404	**75204 53400**	$949.16	144	**75204G 53400**	$116.82
58-400	1296	**75204 58400**	$903.39	144	**75204G 58400**	$120.45
63-400	945	**75204 63400**	$916.91	144	**75204G 63400**	$167.66
70-400	891	**75204 70400**	$966.72	144	**75204G 70400**	$187.48
89-400	440	**75204 89400**	$712.05	144	**75204G 89400**	$279.64



Caps with PTFE-Faced LDPE Foam Liners

- Excellent solvent resistance
- General purpose

Phenolic Caps with PTFE-Faced LDPE Foam Liners

	Bulk Quantities of Caps			Case Quantities of Caps		
GPI Finish	Bulk Qty.	Kimble Art. No.	Bulk Price	Case Qty.	Kimble Art. No.	Case Price
20-400	6300	**75206 20400**	$1,807.33	144	**75206G 20400**	$49.58
22-400	5300	**75206 22400**	$1,687.54	144	**75206G 22400**	$55.02
24-400	4400	**75206 24400**	$1,496.53	144	**75206G 24400**	$58.77
28-400	3200	**75206 28400**	$955.00	144	**75206G 28400**	$51.57
33-400	2400	**75206 33400**	$912.96	144	**75206G 33400**	$65.74
38-400	1800	**75206 38400**	$836.05	144	**75206G 38400**	$80.26
43-400	1638	**75206 43400**	$828.51	144	**75206G 43400**	$87.40
45-400	1404	**75206 45400**	$807.52	144	**75206G 45400**	$99.38
48-400	1248	**75206 48400**	$856.80	144	**75206G 48400**	$118.63
53-400	1404	**75206 53400**	$1,138.99	144	**75206G 53400**	$140.18
58-400	1296	**75206 58400**	$1,084.05	144	**75206G 58400**	$144.54
63-400	945	**75206 63400**	$1,100.29	144	**75206G 63400**	$201.20
70-400	891	**75206 70400**	$1,160.07	144	**75206G 70400**	$224.98
89-400	440	**75206 89400**	$854.45	144	**75206G 89400**	$335.57

Properties

- good chemical resistance to mild acids, alkalis, alcohols, aqueous solutions, oils and solvents
- not recommended for hydrocarbons or bleaches

- good barrier
- good resistance to alcohols, hydrocarbons, ketones, oils
- not recommended for acids and alkalis

- good resistance to acids, alcohols, alkalis, aqueous solutions, oils, solvents
- not recommended for hydrocarbon solvents

- excellent chemical resistance
- compressible foam for sealability
- poor for organic amines

- resistant to moisture vapor
- chemical barrier
- autoclavable

- excellent sealing ability
- stress crack resistant
- excellent torque retention



Caps with Taperseal Liners (Cone-Shaped)

- Excellent sealing capability
- Commonly used for liquids

Phenolic Caps with Taperseal Liners (Cone-Shaped)

	Bulk Quantities of Caps			Case Quantities of Caps		
GPI Finish	Bulk Qty.	Kimble Art. No.	Bulk Price	Case Qty.	Kimble Art. No.	Case Price
20-400	5500	**75205 20400**	$1,355.49	144	**75205G 20400**	$37.18
22-400	4700	**75205 22400**	$1,265.65	144	**75205G 22400**	$41.27
24-400	4200	**75205 24400**	$1,122.40	144	**75205G 24400**	$44.08
28-400	3100	**75205 28400**	$716.25	144	**75205G 28400**	$38.68
33-400	2300	**75205 33400**	$684.73	144	**75205G 33400**	$49.30
38-400	1600	**75205 38400**	$627.04	144	**75205G 38400**	$60.20

A word about Kimble phenolic caps.

- temperature tolerant
- dimensionally stable
- wide chemical compatibility

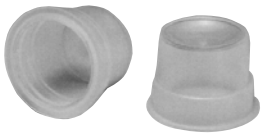
These caps are molded from phenolic, a thermoset plastic resin. We've selected phenolic as our material of choice for its high overall performance as a closure. When used with Kimble Type III Glass Storage Containers, you get an unbeatable combination of performance and value.



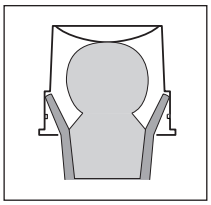
15070G
Numbered and
Un-numbered



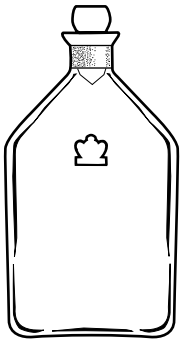
15070
Numbered and
Un-numbered



15070L



Snap-Lids securely hold stoppers.



332250

B.O.D., 300 mL, with Glass Stopper

KIMAX-35 bottles have been designed for sampling and for incubation of aqueous samples for biochemical oxygen demand (B.O.D.) analysis. For reference see Method 5210-B: 5-Day B.O.D. Test (Standard Methods for Examination of Water and Wastewater). The bottles conform to ASTM E438, Type I, Class B, borosilicate glass.

The design incorporates a flared mouth used to form a water seal which prevents the drawing of air into the bottle during incubation. The bottle shoulder radius has been improved to provide an interior shape which sweeps entrained air out of the stopper opening. Stopper design uses a conical extension to displace excess sample which further insures no air entrapment in the sample. The snap-lid, available below, is not included.

Specifications: 69 mm diameter x 165 mm height; neck I.D. approx. 16.7 mm

Kimble Article No.	Number Sequence	Case Qty.	Case Price
15070-00	Un-numbered	24	270.24
15070-01	01 - 24	24	281.52
15070-25	25 - 48	24	283.92
Replacement Parts			
15070G-00	Bottle Only, Un-numbered	24	230.16
Accessory Part			
15070L-99	Snap-lids	50	47.00

B.O.D., 2000 mL, with Glass Stopper

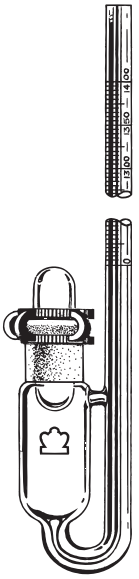
Designed with increased volume for long term BOD analysis. The design of the neck has a flared mouth to form a water seal which prevents the entrance of air.

Specifications: 140 mm diameter x 248 mm height; neck I.D. approx. 20.2 mm

Kontes Article No.	Capacity (mL)	Approx. Overall Height x Width (mm)	Case Qty.	Case Price
332250-2000	2000	265 x 135	1	87.95

Dilatometer

Dilatometer for the determination of the solid fat index (an empirical measure of the solid fat content) of shortenings, margarine oils, and other fats with a solid index of 50 or less at 10°C. Results are expressed as melting dilation in mL/kg of fat. Method is described in A.O.C.S. Method Cd. 10-57. Stem is made from precision-bore tubing and overall accuracy of graduations is ±0.005 mL. Includes a 329105-0000 solid (closed) stopper and one 675300-0014 polyacetal clamp. Calibration certificate is supplied with 329325-0000.



329300
329325

AMBER SCALE

Kontes Article No.	Capacity (mL)	Joint	Grads. / Subdiv. (mL)	Approx. Overall Height x Width (mm)	Case Qty.	Case Price
329300-0000	1.4	14/20	0-1.4 / 0.005	550 x 35	1	197.08
329325-0000	1.4	14/20	0-1.4 / 0.005	550 x 35	1	289.06

Replacement Part

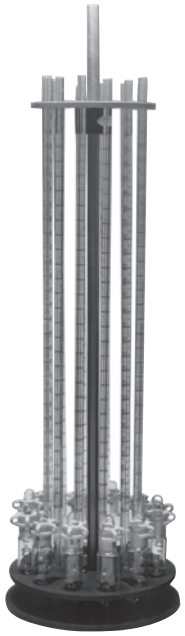
Kontes Article No.	Description	Case Qty.	Case Price
329105-0000	Solid Stopper, 5 mm, without Lug	1	38.64
675300-0014	Polyacetal Joint Clamp, Fits 14/20 and 14/35 Joints	12	37.72

Optional Part

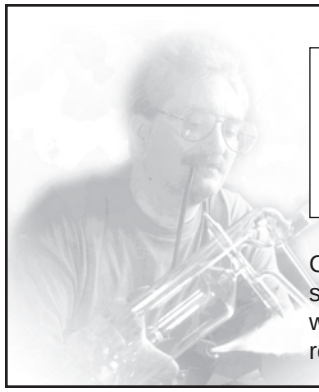
Kontes Article No.	Description	Case Qty.	Case Price
329103-0000	Long Open Stopper, Hollow, 40 mm, with Lug	1	43.10

Accessory

Kontes Article No.	Description	Case Qty.	Case Price
329150-0000	Twelve Position Rack	1	203.99

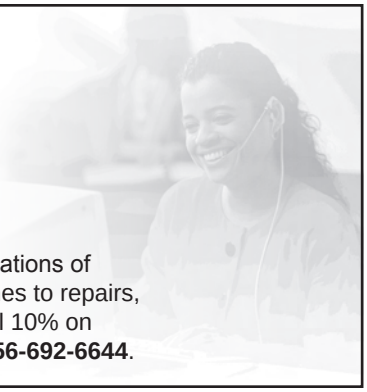


329150
Twelve Position Rack



- **Custom Fabrications**
- **Quality Repairs**
- **Modifications of All Kinds**
- **No Order Too Small**
- **Quick Turnaround**

KONTES
custom glass shop
*call toll-free **800-682-6644***
customglass@kimble-chase.com



Contact the **Kontes Custom Glass Shop** at KIMBLE CHASE for modifications of standard products or fabrication of your unique designs. And when it comes to repairs, we can save you up to 75% of the cost of a new item. Save an additional 10% on repairs of Kontes or Kimble Brand products. Fax your requirements to **856-692-6644**.



15107

Display

KIMAX bottle is finished with uniform walls. Used to display materials, particularly at exhibits, museums, and medical schools. Designed with a heavy flared base which does not exceed the jar diameter. **Specially fitted** corks are included and packed separately.

Kimble Article No.	Capacity (oz.)	Capacity (mL)	Dia. (mm)	Height (mm)	Case Qty.	Case Price
15107-2	2	59	36	105	12	117.60
15107-4	4	118	51	115	12	169.20
15107-8	8	237	63	162	12	318.48
15107-16	16	473	71	210	12	430.20



15035

Dropping

KIMAX bottle is provided with a medium length ⅋ pipet dropper and rubber nipple. Bottle is suitable for use in determining the oil absorption of pigments (ASTM D281). The 125 mL size is KG-35 ASTM 438 Type 1 Class B glass whereas all others are KG-33 ASTM 438 Type 1 Class A. The 30 and 60 mL sizes are designed from Federal Specification NNN-B-1194, Type II, Class 2, Grade B requirements.

Kimble Article No.	Capacity (oz.)	Capacity (mL)	Approx. Dia. (mm)	Assembled Height (mm)	Dropper Capacity (mL)	⅋ Dropper Joint	Case Qty.	Case Price
15035-15	15	1/2	32	95	1.0	12/18	12	298.56
15035-30	30	1	35	113	1.0	12/18	12	336.72
15035-60	60	2	46	120	1.0	12/18	12	335.64
15035-125	125	4	55	150	1.0	19/22	12	428.64

Dropping, Amber, with Glass Dropper

ASTM E438, Type II, USP Type 3, Amber bottle protects light sensitive chemicals.

Kimble Article No.	Capacity (mL)	Capacity (oz.)	Approx. Dia. (mm)	Approx. Height (mm)	Dropper Capacity (mL)	Case Qty.	Case Price
15040G-30	30	1	31	102	1.0	12	29.35
15040G-60	60	2	39	118	1.0	12	31.24
Replacement Part							
15040D-3001	Dropper Only, with Rubber Nipple - 30 mL Glass					6	12.19
15040D-6001	Dropper Only, with Rubber Nipple - 60 mL Glass.					6	12.19



15040G
15040P

Dropping, Amber, with Plastic Dropper

ASTM E438, Type II, USP Type 3, Amber bottle protects light sensitive chemicals. Supplied with 20-400 GPI screw cap, bulb and glass dropper assembled on the bottle. Bottle supplied with one flat side to prevent rolling.

Kimble Article No.	Capacity (mL)	Capacity (oz.)	Approx. Dia. (mm)	Approx. Height (mm)	Dropper Capacity (mL)	Shelf-Pack Qty.	Case Qty.	Case Price
15040P-30	30	1	31	102	1.0	12	72	152.22
15040P-60	60	2	39	118	1.0	-	12	27.04

See Gas Sampling Bottles and Gas Washing Bottles listed under ***GAS SAMPLING***.

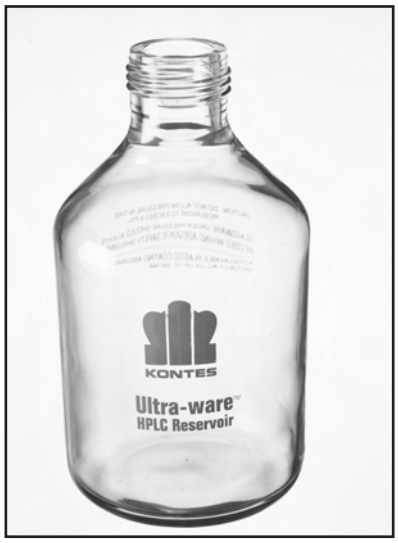
Reservoir, Conical Bottom, Plastic-Coated, ULTRA-WARE®

ULTRA-WARE Reservoirs have been specially designed for the preparation, storage and delivery of all liquid chromatography mobile phases. Each ULTRA-WARE Reservoir is manufactured from the most chemically inert glass available to prevent the leaching of any extractables into the mobile phase solvents. They are then externally coated with a safety plastic with an added ultraviolet (UV) blocking agent. In case of an accident, the plastic safety coating helps retain glass fragments and allows a reasonable amount of time for the safe disposal of the liquid contents. The plastic coating also blocks virtually all UV light up to 385 nm, preventing photo-degradation of light sensitive reagents.

ULTRA-WARE Reservoirs are recommended for use under vacuum for filtration and vacuum degassing of mobile phase solvents. ULTRA-WARE Reservoirs can also be used at internal pressures up to 6 psig for helium sparging and blanketing of the mobile phase. The conical bottom reservoirs deliver virtually all of the mobile phase without dangerous reservoir tilting. All ULTRA-WARE Reservoirs are supplied with GL 45-4 screw thread. *Patent No. Des. 292,824



953901



953902

HPLC RESERVOIR, CONICAL BOTTOM, Without Graduations

Kontes Article No.	Capacity	Approx. Overall Height x Dia.	Case Qty.	Case Price
953901-0252	250 mL	203 x 85 mm	1	101.03
953901-0502	500 mL	230 x 105 mm	1	127.94
953901-1002	1 liter	275 x 130 mm	1	147.48
953901-2002	2 liter	319 x 150 mm	1	227.12
953901-5002	5 liter	373 x 205 mm	1	392.29
953901-1003	10 liter	433 x 255 mm	1	909.94
953901-2003	20 liter	578 x 315 mm	1	1,501.31

HPLC RESERVOIR, CONICAL BOTTOM, With Graduations

Kontes Article No.	Capacity	Approx. Overall Height x Dia.	Case Qty.	Case Price
953922-0252	250 mL	203 x 85 mm	1	106.18
953922-0502	500 mL	230 x 105 mm	1	132.73
953922-1002	1 liter	275 x 130 mm	1	162.23
953922-2002	2 liter	319 x 150 mm	1	233.01
953922-5002	5 liter	373 x 205 mm	1	398.19
953922-1003	10 liter	433 x 255 mm	1	921.74
953922-2003	20 liter	578 x 315 mm	1	1,511.65

HPLC RESERVOIR, CONICAL BOTTOM, With Side Necks & Graduations

Side neck allows addition of filtered solvent without removing delivery cap.

Kontes Article No.	Capacity	Approx. Overall Height x Dia.	Case Qty.	Case Price
953910-2002	2 liter	319 x 150 mm	1	338.32
953910-5002	5 liter	373 x 205 mm	1	503.80
953910-1003	10 liter	433 x 255 mm	1	888.72
953910-2003	20 liter	578 x 315 mm	1	1,576.03

HPLC RESERVOIR, FLAT BOTTOM, Without Graduations

Kontes Article No.	Capacity	Approx. Overall Height x Dia.	Case Qty.	Case Price
953902-0252	250 mL	133 x 73 mm	1	59.43
953902-0502	500 mL	165 x 89 mm	1	73.14
953902-1002	1 liter	205 x 111 mm	1	102.13
953902-2002	2 liter	250 x 138 mm	1	130.53
953902-5002	5 liter	320 x 186 mm	1	292.01
953902-1003	10 liter	400 x 234 mm	1	412.93
953902-2003	20 liter	490 x 300 mm	1	861.25

HPLC RESERVOIR, FLAT BOTTOM, With Graduations

Kontes Article No.	Capacity	Approx. Overall Height x Dia.	Case Qty.	Case Price
953932-0252	250 mL	133 x 73 mm	1	66.37
953932-0502	500 mL	165 x 89 mm	1	88.49
953932-1002	1 liter	205 x 111 mm	1	110.62
953932-2002	2 liter	250 x 138 mm	1	135.68
953932-5002	5 liter	320 x 186 mm	1	302.35
953932-1003	10 liter	400 x 234 mm	1	423.28
953932-2003	20 liter	490 x 300 mm	1	870.12

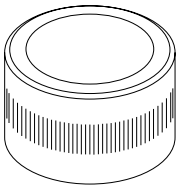
Specifications
ULTRA-WARE HPLC Reservoirs

Materials:
Reservoir: Type I, Class A, Borosilicate Glass
Plastic Coating: PVC with UV blocking agent

Screw Thread: GL 45-4

Operating Pressure: -1.0 to 0.4 bar

UV Transmittance: <1% up to 385 nm



953908



953900

Vacuum / Pressure Bottle, 1000 mL

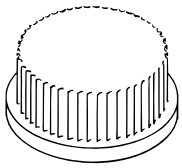
This laboratory bottle has been specially designed for use under vacuum and at pressures up to 1.5 bar (at a maximum of 140°C). This vacuum and pressure resistant bottle is manufactured from borosilicate glass with a GL 45 screw thread.

Kontes Article No.	Description	Case Qty.	Case Price
953900-0010	Bottle, Vacuum/Pressure, 1000 mL	1	34.81

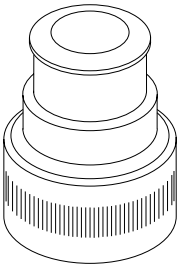
Storage Caps, GL 45

These caps fit any reservoirs or bottles with GL 45 screw threads. The PTFE cap provides the best possible seal. The hi-temp cap is polybutylene terepthalate (PBT) and will withstand up to 200°C hot air sterilization.

Kontes Article No.	Description	Case Qty.	Case Price
953908-0000	Cap, PTFE cap body, TFE/propylene o-ring, PP screw collar	1	113.35
953909-0000	Hi-Temp Cap, Red PBT cap body, PTFE-faced silicone rubber liner	1	10.10



953909

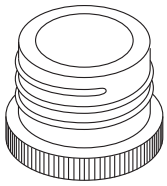


953905

Adapter, PTFE, GL 45 to ⅋40/35, ULTRA-WARE®

This adapter converts GL 45 threads to ⅋40/35 inner joints. This allows filter membrane support glassware with ⅋ 40/35 outer joints to be used on ULTRA-WARE HPLC reservoirs.

Kontes Article No.	Description	Case Qty.	Case Price
953905-0000	Adapter, PTFE, 45 mm to ⅋ 40/35	1	137.85

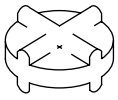


953907

Adapter, PBT, GL 45 to Solvent Bottle, ULTRA-WARE®

The GL-45 solvent bottle adapter is made from PBT and converts Ultra-ware GL-45 mobile phase caps to standard 4L solvent bottles for direct access to HPLC instruments.

Kontes Article No.	Description	Case Qty.	Case Price
953907-0000	Solvent Bottle Adapter	1	56.27

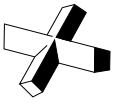


791180

Magnetic Stir Bar, Double-Finned, PTFE

Designed for use in cylindrical cavities. Special shape allows the stir bar to spin freely, unrestricted by the vessel contour.

Kontes Article No.	Approx. Overall Dia. x Height (mm)	Case Qty.	Case Price
791180-0021	19 x 17	1	17.54
791180-0022	25 x 19	1	18.31



791190

Magnetic Stir Bar, X-Shaped, PTFE

This PTFE-coated stirring bar provides superior mixing in the conical bottom HPLC reservoirs.

Kontes Article No.	Fits Reservoir Sizes	Dimensions	Case Qty.	Case Price
791190-0100	2 liter	1" x 1"	1	10.52
791190-0114	5, 10 and 20 liter	1 1/4" x 1 1/4"	1	11.93

Milk Dilution, Square, with Screw Cap, Ungraduated

KIMAX-35 bottles are designed from the requirements for milk dilution bottles given in the "Standard Methods for the Examination of Dairy Products", published by the American Public Health Association. Bottles have a square cross section and a smooth marking spot. Supplied with a black phenolic screw cap not attached. Cap has a cemented in rubber liner and is suitable for autoclaving. Bottle may be autoclaved to 121°C without preconditioning. **Replacement cap is 14255.**

Kimble Article No.	Capacity (mL)	Approx. Height (mm)	Outside Cross Section (mm)	GPI Thread Finish	Case Qty.	Case Price
14915-160	160	150	45 x 45	28-400	48	218.88



14915

Milk Dilution, Square, with Screw Cap, Graduated at 99 mL

KIMAX-35 bottles are designed from the requirements for milk dilution bottles given in the "Standard Methods for the Examination of Dairy Products", published by the American Public Health Association. Bottles have a square cross section and a smooth marking spot. Supplied with a black phenolic screw cap not attached. Cap has a cemented in rubber liner and is suitable for autoclaving. Bottle may be autoclaved to 121°C without preconditioning. Replacement cap is 14255.

Kimble Article No.	Capacity (mL)	±Tol. (mL)	Approx. Height (mm)	Outside Cross Section (mm)	GPI Thread Finish	Case Qty.	Case Price
14925-160	160	1	150	45 x 45	28-400	48	304.32



14925

Milk Dilution / Sampling, with Screw-Cap, Ungraduated

KIMAX-35 bottle has a square cross section and a wide appeal for general use, especially water sampling, milk dilutions and tissue culture work. Comes with an attached rubber-lined black phenolic autoclavable closure. Bottle may be autoclaved to 121 °C without preconditioning. **Replacement cap is 14255.**

Kimble Article No.	Capacity (mL)	Cap. to Neck Base (mL)	Approx. Height (mm)	Outside Cross Section (mm)	GPI Thread Finish	Case Qty.	Case Price
14250-200	200	250	160	50 x 50	28-400	48	158.40



14250

See additional dairy products in the ***Dairyware*** section.



Safety Program - *Play it safe in the lab.*

Our Safety Program discusses the ten basic safety rules of handling glassware as well as the technical properties and physics of glass. Available as a DVD.

Kimble Article No.	Format	Case Qty.	Case Price
99991D-99	DVD	1	23.99

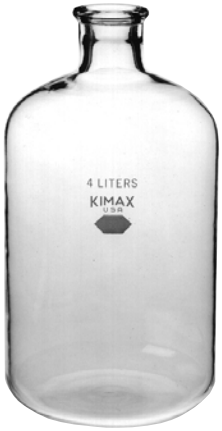
See more safety products in the *SAFETYWARE* section.



14607



14612F



14960



61000G



61020G

Reservoir, Bottom Hose Outlet, Tooled Top, Narrow Mouth for Rubber Stopper

KIMAX glass hose connection outlet is fused to the bottle. All sizes accept 5/16" I.D. flexible tubing. With white enamel marking spot. Glass conforms to ASTM E438, Type I, Class A.

Kimble Article No.	Approx. Capacity (liters)	Approx. Neck ID at Top (mm)	Rubber Stopper Size	Approx. Dia. (mm)	Approx. Height (mm)	Shelf-Pack Qty.	Case Qty.	Case Price
14607-250	250 mL	18	2	72	132	1	6	228.78
14607-500	500 mL	22	4	89	165	-	1	59.45
14607-1000	1 L	27	6	110	200	-	1	59.19
14607-2000	2 L	27	6	136	250	-	1	86.92
14607-5000	5 L	42	10	183	320	-	1	137.41
14607-10000	10 L	58	11.5	230	400	-	1	255.56
14607-20000	20 L	58	11.5	290	495	-	1	508.72

Reservoir, Bottom Valve Outlet, Detachable Quick-Release Connector, Tooled Top, Narrow Mouth for Rubber Stopper

KIMAX bottles are **graduated** with an approximate capacity scale. Bottom outlet is controlled with an 8 mm valve which can be used with 1/4" flexible tubing (not supplied) attached to the quick-release hose barb connector. It may also be used with rigid 1/4" O.D. PTFE tubing with the o-ring and cap supplied on the quick-release connector. Glass conforms to ASTM E438, Type I, Class A.

Kimble Article No.	Approx. Capacity (liters)	Approx. Neck ID at Top (mm)	Rubber Stopper Size	Approx. Dia. (mm)	Approx. Height (mm)	Case Qty.	Case Price
14612F-2000	2 L	27	6	136	250	1	263.99
14612F-5000	5 L	42	10	183	320	1	408.20
14612F-10000	10 L	58	11.5	230	400	1	787.35
14612F-20000	20 L	58	11.5	290	495	1	767.10

Serum, Heavy-Duty

KIMAX bottle with rounded shoulders. Neck is tooled for a uniform fit with a #8 rubber stopper.

Kimble Article No.	Capacity Liters - Gallons	Approx. Dia. (mm)	Approx. Height (mm)	Case Qty.	Case Price
14960-4	4 - 1	167	310	1	88.13
14960-9	9 - 2	203	412	1	147.51

Serum, KG-35 Borosilicate, Aluminum Seal, without Closure

Kimble serum bottles are made from a borosilicate glass with unique properties. It has the highest resistance to chemical attack of any known commercially available glass. This glass is ideal for the packaging, storage and application of injectable and parenteral solutions requiring utmost purity. Serum bottles have a high resistance to thermal and mechanical shock. Kimble serum bottles meet or exceed U.S.P. Specifications for Type I Glass Containers.

Kimble Article No.	Capacity (mL)	O.D. (mm)	Length (mm)	GPI Neck Finish	Case Qty.	Case Price
61000G-5	5	23	47	20A	288	114.86
61000G-10	10	25	52	20A	288	159.30
61000G-20	20	33	59	20A	288	194.06
61000G-30	30	37	66	20A	288	241.06
61000G-50	50	43	75	20A	288	299.52
61000G-60	60	40	90	20A	144	168.78
61000G-100	100	52	94	20A	144	230.10
61000G-125	125	54	106	20A	144	253.05
61000G-200	200	65	114	20A	24	81.52

Serum, Amber RN-3 Borosilicate Glass, Aluminum Seal, without Closure

Kimble Article No.	Capacity (mL)	O.D. (mm)	Length (mm)	GPI Neck Finish	Case Qty.	Case Price
61020G-50	50	43	75	20A	288	399.35

Solution (Carboy), Heavy-Duty

KIMAX bottle with sloping shoulders of the carboy-style. Neck is tooled for a uniform fit with a #12 rubber stopper. The 5 gallon size is designed from Federal Specification DD-B-597.

Kimble Article No.	Capacity Liters - Gallons	Approx. Dia. (mm)	Approx. Height (mm)	Case Qty.	Case Price
14950-25	9.5 - 2.5	222	392	1	139.04
14950-35	13.2 - 3.5	257	448	1	181.47
14950-500	19.0 - 5.0	294	502	1	275.36
14950-120	45.5 - 12.0	410	584	1	600.49



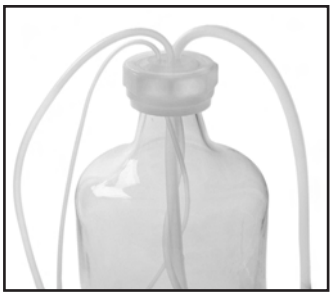
14950

Carboy Clamp and Silicone Stopper Assemblies

Kimble has developed a 3-port platinum cured stopper assembly, 14950S-321 and sanitary PVDF clamp, 14950-12, to provide sterile fluid transfer with no extractables as required in bio-tech and pharmaceutical applications. The stopper ports are designed to connect to 1/8", 1/4" (4-port Stopper has two 1/4" tubes) and 3/8" with 2' silicone tubing both ends, which are cut to length as end application requires. This assembly is specifically designed to fit all sizes of KIMAX® 14950 solution (carboy) bottles.

Kimble Article No.	Description	Case Qty.	Case Price
14950C-12	Clamp	1	38.71
14950S-321	Stopper, 3-port	1	196.15
14950S-2321	Stopper, 4-port	1	220.83

KYNAR is a registered trademark of Atoched North America for polyvinylidene fluoride.



14950C

Solution, Tooled Top, Narrow Mouth for Rubber Stopper

KIMAX bottles conform to ASTM E438, Type 1, Class A glass.

Kimble Article No.	Approx. Cap. (mL)	Approx. Neck I.D. at Top (mm)	Rubber Stopper Size	Approx. Dia. (mm)	Approx. Height (mm)	Case Qty.	Case Price
15093-1000	1000	27	6	110	200	6	85.80
15093-2000	2000	27	6	136	250	4	281.64
15093-5000	5000	42	10	183	320	1	156.13
15093-10000	10000	58	11.5	230	400	1	227.79
15093-20000	20000	58	11.5	290	495	1	332.47



15093

Solution, Narrow Mouth, with Color-Coded PTFE ⅌ Flathead Stopper

KIMAX bottles conform to ASTM E438, Type I, Class A glass. Bottle necks are ⅌ ground to accept flathead color-coded PTFE stoppers. **Replacement stoppers are 41941.**

Kimble Article No.	Approx. Cap. (mL)	Approx. Dia. (mm)	Approx. Height with Stopper (mm)	Stopper ⅌ Size	Stopper Color	Shelf-Pack Qty.	Case Qty.	Case Price
15097-100	100	53	110	14	Red	-	1	19.30
15097-250	250	72	145	19	Grey	1	6	124.02
15097-500	500	89	180	24	Blue	1	6	149.04
15097-1000	1000	110	215	29	Green	1	6	244.98
15097-2000	2000	136	265	29	Green	1	4	394.96



15097



15123R

Specific Gravity, Pycnometer, Serialized

KIMAX bottle is supplied with a special medium length ⅋ 10/18 thermometer with a range of 14 to 38 degrees C in 0.2 degrees. Retested for accuracy within ± 0.2 degrees C. Cap for the side tube is medium length ⅋ 5/12 and has a small vent near the top. Body is conical for maximum stability, and capacity is within 10 percent of nominal shown on the flask. Each flask body is numbered for ready identification. The 50 mL size is used to obtain the specific gravity of pigments (ASTM D153).

Kimble Article No.	Capacity (mL)	Approx. Assembled Height (mm)	Approx. Assembled Weight (grams)	Case Qty.	Case Price
15123R-10	10	168	31	1	164.83
15123R-25	25	175	35	1	164.83
15123R-50	50	186	47	1	171.41

Kimble Article No.	Description	Price
15123T-1025	Thermometer Only ⅋ 10/18, size 10 or 25	96.90

Procedure for Use of 15123R Bottle

1. Thoroughly clean, dry, assemble, and weigh the empty pycnometer and record.
2. Fill with recently boiled, distilled water at a temperature a degree or two below the determination temperature.
3. Insert thermometer into the bottle, forcing water through the overflow tube.
4. Place in a constant temperature bath and when the desired temperature is reached, wipe off excess water from the overflow tube tip and cap.
5. Remove from bath, wipe dry, reweigh and record.
6. Weight difference is that of the water in the flask - the volume of the pycnometer may be calculated.
7. Repeat process with liquid of an unknown specific gravity and record the weight difference.

Calculation:

$$\text{Specific Gravity} = \frac{\text{(weight of liquid of unknown S.G.)}}{\text{(weight of water at same temperature)}}$$

Specific Gravity, Hubbard

KIMAX bottle used in the determination of specific gravity for a large variety of semi-solid materials and emulsions, such as road oils, road tars, soft tar pitches, and asphalt cements (ASTM D70); drying oils, varnishes, resins, and related materials (ASTM D1963); water and brine (ASTM D1429); and insulating varnishes (ASTM D115). Short length stopper is conical on the underside and has a hole approximately 1.6 mm in diameter to allow air to escape.

Kimble Article No.	Approx. Capacity (mL)	Approx. O.D. (mm)	Approx. Assembled Height (mm)	Approx. Weight (grams)	Joint	Shelf-Pack Qty.	Case Qty.	Case Price
15110-24	24	27	82	35	24/12	2	12	943.80



15110

Specific Gravity, Hubbard-Carmick

KIMAX conical-shaped bottle offering greater stability. Used in the determination of specific gravity for a large variety of semi-solid materials and emulsions, such as road oils, road tars, soft tar pitches, and asphalt cements (ASTM D70); drying oils, varnishes, resins, and related materials (ASTM D1963); water and brine (ASTM D1429); and insulating varnishes (ASTM D115). Short length stopper is conical on the underside and has a hole approximately 1.6 mm in diameter to allow air to escape.

Kimble Article No.	Approx. Capacity (mL)	Approx. O.D. (mm)	Approx. Assembled Height (mm)	Approx. Weight (grams)	Joint	Shelf-Pack Qty.	Case Qty.	Case Price
15113-25	25	40	55	35	24/12	2	12	989.04



15113

Specific Gravity, Le Chatelier, Class A, Serialized

KIMAX bottle used in the determination of the specific gravity of cement, sand, and other fine materials (ASTM C188). Designed for a 64 gram sample. Body holds approximately 250 mL, and the smaller neck bulb holds 17mL. Below the neck bulb, the neck is graduated from 0 to 1.0 mL and has two extra 0.1 mL lines both above 1.0 mL and below 0.0 mL. Above the neck bulb, the neck is graduated from 18 to 24 mL in 0.1 mL subdivisions. All markings are durable white enamel. Supplied with serial number. Designed from ASTM Specification E694 and complies with C188. **Replacement stopper is 41900R.**

Kimble Article No.	Approx. Capacity (mL)	±Tol. (mL)	Approx. Bulb Dia. (mm)	Approx. Height (mm)	Joint	Shelf-Pack Qty.	Case Qty.	Case Price
15115-24	24	0.05	90	285	13	1	2	216.42



15115



14395

GL 45 Storage / Media with Blue Polypropylene Cap

KIMAX® bottles have enhanced graduations and marking spot are permanent white enamel. This general use bottle is provided with wide opening (approx. 30 mm ID) GL 45 screw thread and supplied with linerless autoclavable (140°C max) polypropylene blue cap. Bottle design includes a clear (natural) drip free polypropylene pour ring which is replaceable.

Kimble Article No.	Capacity (mL)	Graduations (mL) Range	Graduations (mL) Interval	Approx. (mm) (Unassembled) OD - HT	Case Qty.	Case Price
14395-100	100	20-80	10	56 - 100	10	79.10
14395-250	250	50-200	25	70 - 138	10	87.90
14395-500	500	100-400	50	86 - 176	10	105.10
14395-1000	1000	100-900	50	101 - 225	10	127.80
14395-2000	2000	400-1800	100	136 - 262	4	134.68
14395-5000	5000	1000-4000	250	186 - 355	1	111.45
14395-10000	10000	2000-8000	500	234 - 435	1	192.41
Replacement Caps and Pour Rings						
14395C-45	Blue Cap				10	27.90
14395P-45	Pour Ring				10	9.80



14396

GL 45 Storage / Media without Caps

Save 15% if you already have plenty of caps and only want bottles. Or build your own bottle / cap combinations with these bottles and our separate caps. These are the same, high-quality, KIMAX® bottles as our 14395-series. A replaceable, clear (natural), drip-free, polypropylene, pour ring is included on each bottle.

Kimble Article No.	Capacity (mL)	Graduations (mL) Range	Graduations (mL) Interval	Approx. (mm) (Unassembled) OD - HT	Case Qty.	Case Price
14396-100	100	20-80	10	56 - 100	10	67.20
14396-250	250	50-200	25	70 - 138	10	74.70
14396-500	500	100-400	50	86 - 176	10	89.30
14396-1000	1000	100-900	50	101 - 225	10	108.70
14396-2000	2000	400-1800	100	136 - 262	4	114.48
14396-5000	5000	1000-4000	250	186 - 355	1	94.73
14396-10000	10000	2000-8000	500	234 - 435	1	163.55

Red Tinted Glassware Blocks Harmful UV



14399

GL 45 Storage / Media, RAY-SORB® with Blue Polypropylene Cap

The RAY-SORB® process provides a shield to protect light sensitive products. As chart shows less than 1% transmission below 400 nm and reduced (5%) from 400-600 nm as compared to untreated clear borosilicate glass. Bottles are provided with enhanced graduation scale; cap and drip-free pour ring included.

Kimble Article No.	Capacity (mL)	Graduations (mL) Range	Graduations (mL) Interval	Approx. (mm) (Unassembled) OD - HT	Case Qty.	Case Price
14399-500	500	100-400	50	86 - 176	1	38.32
14399-1000	1000	100-900	50	101 - 225	1	44.45
14399-2000	2000	400-1800	100	136 - 262	1	64.34
14399-5000	5000	1000-4000	250	186 - 355	1	214.69
14399-10000	10000	2000-8000	500	234 - 435	1	319.49
Replacement Caps and Pour Rings						
14395C-45	Blue Cap				10	27.90
14395P-45	Pour Ring				10	9.80

See additional RAY-SORB® products in the *RAY-SORB®* section.

GL 45 Storage / Media, Safety Coated with Blue Polypropylene Cap

KIMAX® bottle has enhanced graduations and marking spot is permanent white enamel. This general use bottle is provided with a wide opening (approx. 30 mm ID) GL 45 screw thread and is supplied with linerless autoclavable (140°C max) polypropylene blue cap. Bottle design includes a clear (natural) drip-free polypropylene pour ring which is replaceable.

Kontes Article No.	Capacity (mL)	Graduations Range (mL)	Interval (mL)	Approx. OD (Unassembled) (mm)	Approx. Height (mm)	Case Qty.	Case Price
321000-0100	100	20-80	10	56	100	10	213.20
321000-0250	250	50-200	25	70	138	10	253.00
321000-0500	500	100-400	50	86	176	10	270.06
321000-1000	1000	100-900	50	101	225	10	375.22
321000-2000	2000	400-1800	100	136	262	4	255.83

Replacement Caps and Pour Rings

14395C-45	Blue Cap	10	27.90
14395P-45	Pour Ring	10	9.80



321000

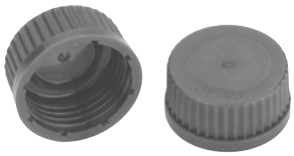
See additional safety products in the *SAFETYWARE* section.

Screw Thread, GL 45, Color Caps

Solid top polypropylene GL 45 caps with internal molded seal rings.

Kimble Article No.	Description	Temperature Range	Case Qty.	Case Price
14395C-45	Blue Cap	140°C	10	27.90
14395C-451	White Cap	140°C	10	28.00
14395C-453	Orange Cap	140°C	10	28.00

Available in BLUE, WHITE & ORANGE



14395C

Screw Thread, GL 45, with PTFE Blue Membrane Cap

This cap is designed with a 0.2 micron PTFE membrane (sealed in) as a barrier to allow pressure equilibrium during low temperature (140° C max) autoclaving.

Kimble Article No.	Description	Case Qty.	Case Price
14395M-45	Membrane Cap	10	43.50



14395M

High Temperature, GL 45, Red Cap, 180° C Applications

PBT (Polybuthyleneteraphthalate) cap with PTFE faced silicone liner. Good chemical resistance to alcohols, ethers, hydrocarbons, and dilute or strong acids.

Kimble Article No.	Description	Case Qty.	Case Price
14395H-452	High Temp Cap, Red	10	93.90



14395H

Pour Ring, GL 45, Clear and Red High Temperature

(For 14395, 14397, 14399 Bottles & 26720 Flasks)

Pour rings are made up of clear drip free polypropylene or red ETFE. Designed for use with 14395 series bottles and 26720 series flasks. 14395E-452 high temperature ring is recommended for use with 14395H-452 high temperature cap.

Kimble Article No.	Description	Max. Temp. Rating	Case Qty.	Case Price
14395P-45	Polypropylene, Clear	140° C	10	9.80
14395E-452	ETFE, Red, High Temperature	180° C	10	22.00



14395P

Storage / Media with Closures

Screw thread storage / media bottles are molded from KG-35 borosilicate glass. Like Kimble Brand serum bottles, Type I borosilicate storage / media bottles are autoclavable. They offer compatability, neutrality and protection of product. Storage / media bottles, in the most preferred sizes, are available plain and graduated with a white marking spot. All sizes are molded with a convenient 33 mm pour-out neck finish while the 1000 mL is also available with a larger 38 mm pour-out opening. Finger indents are molded into the side walls of 1000 mL bottles for safety. Case quantities were designed for protection and ease in handling.

Whether mixing, storing, or transporting culture media, chemicals or solvents, Kimble Brand storage / media bottles are suited to your needs.



61110R
61111R

Storage / Media, KG-35 Borosilicate Glass, Screw Thread, with Black Phenolic, White Rubber-Lined Closure, Attached

Screw thread graduated media/storage bottles come assembled with phenolic white rubber-lined closures. With a large white marking spot.

Kimble Article No.	Capacity (mL)	Subdivision (mL)	O.D. (mm)	Approx. Height (mm)	GPI Thread Finish	Case Qty.	Case Price
61110R-125	125	25	55	123	33-430	48	171.79
61110R-250	250	25	70	150	33-430	48	222.41
61110R-500	500	50	88	192	33-430	24	168.17
61110R-1000	1000	50	102	225	38-430	12	104.65
61111R-1000	1000	50	102	226	33-430	12	106.87



61110T
61111T

Storage / Media, KG-35 Borosilicate Glass, Screw Thread, with Black Phenolic PTFE-Faced White Rubber-Lined Closure, Attached

Screw thread graduated media/storage bottles come assembled with phenolic PTFE-faced white rubber-lined closures. With a large white marking spot.

Kimble Article No.	Capacity (mL)	Subdivision (mL)	O.D. (mm)	Approx. Height (mm)	GPI Thread Finish	Case Qty.	Case Price
61110T-125	125	25	55	123	33-430	48	183.60
61110T-250	250	25	70	150	33-430	48	230.46
61110T-500	500	50	88	192	33-430	24	181.97
61110T-1000	1000	50	102	225	38-430	12	112.11
61111T-1000	1000	50	102	226	33-430	12	113.47



61110P
61111P

Storage / Media, KG-35 Borosilicate Glass, Screw Thread, with Black Polypropylene Closure Welded to PTFE / Silicone Liner, Closure Attached

Screw thread graduated media/storage bottles come assembled with polypropylene closures welded to PTFE/Silicone liners. Closures are ideal for repeated autoclaving. The PTFE/Silicone liner also eliminates the possibility of glue contamination. With a large white marking spot.

Kimble Article No.	Capacity (mL)	Subdivision (mL)	O.D. (mm)	Approx. Height (mm)	GPI Thread Finish	Case Qty.	Case Price
61110P-125	125	25	55	123	33-430	48	187.03
61110P-250	250	25	70	150	33-430	48	248.48
61110P-500	500	50	88	192	33-430	24	174.93
61110P-1000	1000	50	102	225	38-430	12	109.24
61111P-1000	1000	50	102	226	33-430	12	110.56

Storage / Media, KG-35 Borosilicate Glass, Screw Thread, without Closure

Screw thread storage / media bottle.

Kimble Article No.	Capacity (mL)	O.D. (mm)	Approx. Height (mm)	GPI Thread Finish	Case Qty.	Case Price
61100-125	125	55	119	33-430	48	92.44
61100-250	250	70	147	33-430	48	153.55
61100-500	500	88	188	33-430	24	117.02
61100-1000	1000	102	222	33-430	12	76.43
61100A-1000	1000	102	222	38-430	12	76.43
Accessory Closures						
73802-33430	Closure, Phenolic, with PTFE-Faced Rubber liner, 33-430				144	176.26
73802-38430	Closure, Phenolic, with PTFE-Faced Rubber liner, 38-430.				144	202.81
73803-33430	Closure, Phenolic, with Rubber liner, 33-430.				144	92.26
73803-38430	Closure, Phenolic, with Rubber liner, 38-430				144	118.15
73808-33430	Closure, MICROLINK® Screw Thread PP with PTFE/Silicone, 33-430				48	41.84
73808-38430	Closure, MICROLINK® Screw Thread PP with PTFE/Silicone, 38-430				48	45.95
Accessory						
24900-2	Filling Attachment				1	54.80



61100(A)

Storage / Media, KG-35 Borosilicate Glass, Screw Thread, Graduated, without Closure

Screw thread graduated storage / media bottle with a large white marking spot.

Kimble Article No.	Capacity (mL)	Subdivision (mL)	O.D. (mm)	Approx. Height (mm)	GPI Thread Finish	Case Qty.	Case Price
61110-125	125	25	55	119	33-430	48	132.00
61110-250	250	25	70	147	33-430	48	191.31
61110-500	500	50	88	188	33-430	24	144.38
61110-1000	1000	50	102	222	33-430	12	91.76
61110A-1000	1000	50	102	222	38-430	12	91.76
Accessory Closures							
73802-33430	Closure, Phenolic, with PTFE-Faced Rubber liner, 33-430					144	176.26
73802-38430	Closure, Phenolic, with PTFE-Faced Rubber liner, 38-430.					144	202.81
73803-33430	Closure, Phenolic, with Rubber liner, 33-430.					144	92.26
73803-38430	Closure, Phenolic, with Rubber liner, 38-430					144	118.15
73808-33430	Closure, MICROLINK® Screw Thread PP with PTFE/Silicone, 33-430					48	41.84
73808-38430	Closure, MICROLINK® Screw Thread PP with PTFE/Silicone, 38-430					48	45.95



61110(A)

MICROLINK® is a reg. trademark of Loctite VSI, Inc., Canton Biomedical Division.



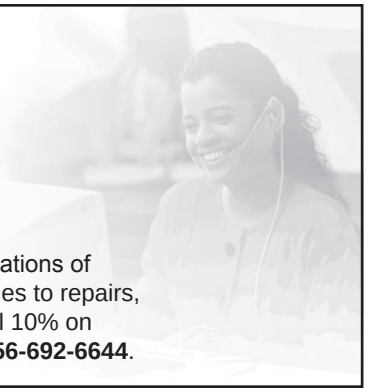
73802
73803
73808



- **Custom Fabrications**
- **Quality Repairs**
- **Modifications of All Kinds**
- **No Order Too Small**
- **Quick Turnaround**

KONTES
custom glass shop
*call toll-free **800-682-6644***
customglass@kimble-chase.com

Contact the **Kontes Custom Glass Shop** at KIMBLE CHASE for modifications of standard products or fabrication of your unique designs. And when it comes to repairs, we can save you up to 75% of the cost of a new item. Save an additional 10% on repairs of Kontes or Kimble Brand products. Fax your requirements to **856-692-6644**.

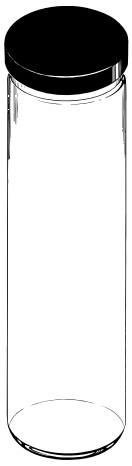


TCLP Extraction Bottles

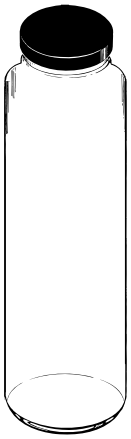
These procedures are used to identify wastes which are hazardous and thus subject to regulation under Subtitle C of the Resource Conservation and Recovery Act (RCRA). The EPA recommends that borosilicate glass bottles be used instead of other materials, especially when organics are of concern.

Plastic-coating provides added safety should breakage occur, as well as providing a slip-resistant surface. Bottles are autoclavable at 121°C for 15 minutes. Single cap bottles have a radius bottom for added strength and durability.

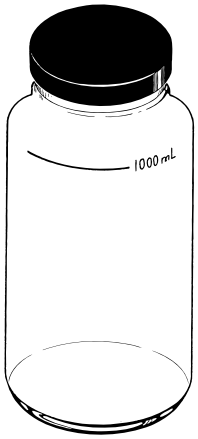
Reference: SW-846, EPA Method 1310 Extraction Procedure, Toxicity (EP-TOX); EPA Method 1311, Toxic Characteristic Leaching Procedure (TLCP); and EPA Method 1312, Synthetic Precipitation Leaching Procedure (SPLP).



332100-0221



332140



332200

Plastic-Coated for Collar-Style Rotators

Bottles are plastic-coated for safety. Designed for use in commercially available collar-style rotators. Made from heavy-wall borosilicate glass. Complete with polypropylene caps 410112 and PTFE liners 410135.

Kontes Article No.	Capacity (L)	GPI Thread	Approx. Overall Height x O.D. (mm)	Case Qty.	Case Price
332100-0221	2.2	100-400	325 x 110	1	148.47

Disposable for Collar-Style Rotators

Designed for use in commercially available collar-style rotators. Made from borosilicate glass. Complete with a PTFE/rubber lined black phenolic cap, 410121-5100.

Kontes Article No.	Capacity (L)	GPI Thread	Approx. Overall Height x O.D. (mm)	Case Qty.	Case Price
332140-0251	2.5	51-400	355 x 110	1	60.83

Wide-Mouth Sample

Heavy-wall borosilicate bottle used to collect sub-surface oil and/or grease samples. Large 70 mm opening facilitates sample collection. 1000 mL reference mark is provided on each bottle. Polypropylene cap has a silicone backed PTFE liner.

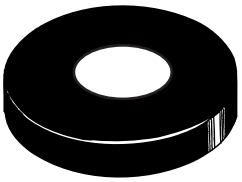
Kontes Article No.	Capacity (L)	GPI Thread	Approx. Overall Height x O.D. (mm)	Case Qty.	Case Price
332200-1000	1.0	70-400	170 x 100	1	130.87
Replacement Part					
410125-7000	Polypropylene Cap with PTFE / Silicone Liner			6	37.96

Reference: Standard Methods for the Examination of Water and Wastewater, 1989, 17th Edition, Method 5520 Oil and Grease, pp. 5-41.

Cap, Blue Polypropylene

Recommended for use with Kontes TCLP bottles. Available with a solid top (410112-0000) or an open-top (410113-0000). Liners are sold separately.

Kontes Article No.	Top	GPI Thread	Approx. Hole Diameter (mm)	Case Qty.	Case Price
410112-0000	solid	100-400	-	6	49.08
410113-0000	open	100-400	12.7	6	54.89

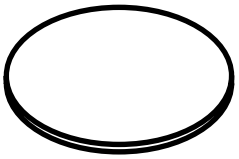


410113

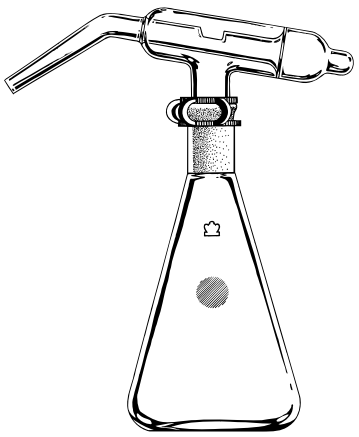
Cap Liners

The size 51 liner (410135-0051) is recommended for use with the KONTES disposable TCLP bottle (332140-0251). The porous PTFE liner (410133-0100) is recommended for use with the 100-400 cap (410113-0000) to provide out-gassing during TCLP procedures.

Kontes Article No.	Fits Thread Cap Size (mm)	Liner Material	Thickness (inches)	Case Qty.	Case Price
410133-0100	100	Pourous PTFE	.050	6	42.11
410134-0100	100	PTFE/Silicone	.060	6	82.07
410135-0051	51	PTFE	.015	10	28.72
410135-0100	100	PTFE	.030	6	21.96



410133
410134
410135



759300

Tilting, Fixed Volume, Dispensing

All glass apparatus with a fixed volume dispensing head. 675300 polyacetal ⧟ clamp (one included) secures flask and head.

Kontes Article No.	Head Cap. (mL)	Reservoir Cap. (mL)	⧟ Joint	Approx. Height x Width (mm)	Case Qty.	Case Price
759300-0005	5	250	24/40	175 x 215	1	149.78
759300-0010	10	500	24/40	185 x 260	1	152.40
759300-0015	15	500	24/40	200 x 260	1	155.03
759300-0020	20	1000	29/42	205 x 290	1	161.60
759300-0025	25	1000	29/42	215 x 290	1	165.55
759300-0030	30	1000	29/42	225 x 290	1	168.16
759300-0040	40	2000	29/42	240 x 355	1	183.94
759300-0050	50	2000	29/42	250 x 355	1	191.82
759300-0060	60	2000	29/42	260 x 355	1	199.71
759300-0100	100	2000	29/42	275 x 355	1	211.53

Component Parts

759301-0005	Dispenser Head, ⧟ 24/40, 5 mL	1	120.21
759301-0010	Dispenser Head, ⧟ 24/40, 10 mL	1	120.21
759301-0015	Dispenser Head, ⧟ 24/40, 15 mL	1	123.16
759301-0020	Dispenser Head, ⧟ 29/42, 20 mL	1	127.77
759301-0025	Dispenser Head, ⧟ 29/42, 25 mL	1	131.39
759301-0030	Dispenser Head, ⧟ 29/42, 30 mL	1	136.63
759301-0040	Dispenser Head, ⧟ 29/42, 40 mL	1	141.91
759301-0050	Dispenser Head, ⧟ 29/42, 50 mL	1	149.78
759301-0060	Dispenser Head, ⧟ 29/42, 60 mL	1	156.35
759301-0100	Dispenser Head, ⧟ 29/42, 100 mL	1	169.50
617000-0424	Flask, ⧟ 24/40, 250 mL	1	24.15
617000-0624	Flask, ⧟ 24/40, 500 mL	1	25.32
617000-0729	Flask, ⧟ 29/42, 1000 mL	1	33.37
617000-0829	Flask, ⧟ 29/42, 2000 mL	1	42.25
675300-0024	Polyacetal Clamp, ⧟ 24/40, 1 Supplied, Pkg./12	12	39.53
675300-0029	Polyacetal Clamp, ⧟ 29/42, 1 Supplied, Pkg./12	12	40.77



14975

Toxin, Povitsky, Rectangular

KIMAX bottle has a rectangular cross section with an offset neck. Used in the preparation of toxins and for general tissue culture work.

Kimble Article No.	Capacity (liters)	Cross-section (mm)	Approx. Height (mm)	Rubber Stopper Size	Case Qty.	Case Price
14975-5	5	114 x 152	454	10	1	161.22



15066

Unsaturation Bottle, Gasoline

KIMAX bottle used in the determination of unsaturated hydrocarbons in gasoline. Body of the bottle (approximately 45 mL capacity) is a “reaction vessel” whereby an accurately measured sample is pipetted into the bottle; excess reagent is added and after the reaction is complete, more reagent is added to raise the “fat column” into the calibrated neck of the bottle where results are read directly as a percentage of fat in the sample.

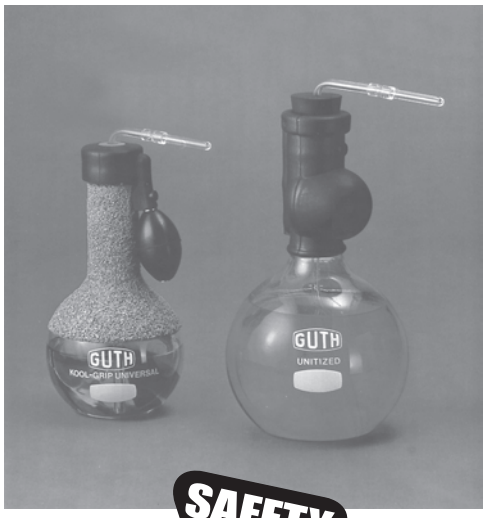
Kimble Article No.	Neck Capacity (%)	Subdivision (%)	±Tol. (%)	Approx. Base O.D. (mm)	Approx. Height (mm)	Shelf-Pack Qty.	Case Qty.	Case Price
15066-10	100 (10 mL)	2	1	37	164	6	12	312.60

Wash, Kontes / Guth

Automatically pump a continuous, forceful jet of washing or rinsing liquid that may be instantly stopped as needed. Guth Sanitary Washbottles feature easy one-handed operation, either hand, leaving the other hand free for other needs. Crystal clear glass flasks permit quick inspection of the contents.

KONTES/GUTH Unitized® Washbottles are recommended for use at normal temperatures.

KONTES/GUTH Universal® Washbottles feature a Kool-Grip jacket and may be used at elevated temperatures (boiling) as well as normal temperatures. Both sanitary automatic washbottles feature borosilicate glass flasks and neoprene parts for improved solvent resistance.



1051 1011

SAFETY 1st

Universal Washbottles

Kontes Article No.	Description	Case Qty.	Case Price
1051-500	Universal Washbottle, KOOL-GRIP, 500 mL	1	99.82
1051-1000	Universal Washbottle, KOOL-GRIP, 1 L	1	116.48

Unitized Washbottle

Kontes Article No.	Description	Case Qty.	Case Price
1011	Unitized Washbottle	1	140.94

Replacement Parts

Kontes Article No.	Description	Case Qty.	Case Price
1011-A	Unitized Washbottle Service Kit	1	22.84
1011-D	Unitized Rubber Bulb and Valves	1	70.37
1011-G	Unitized Washbottle Delivery Tube Kit	1	12.92
1011-R	Unitized Washbottle, Flask Only 1 L	1	33.93
1051-B	Aspirator Bulb/Valve	1	9.93
1051-D	Feak Stopper Only	1	38.40
1051-G	Unitized Washbottle Delivery Tube Kit 500	1	14.36
1051-500	Guth Universal Washbottle 500 mL	1	99.82
1051-1000	Guth Universal Washbottle 1 L	1	116.48
1051-R-500	Universal Washbottle Flask Only 500 mL	1	44.49
1051-R-1000	Universal Washbottle Flask Only 1 L	1	52.74
1055	Guth Feak Fitting 500 mL & 1L	1	54.95
1055-1000	Guth Feak Fitting 1000 mL	1	54.95

See the *SAFETYWARE* section for more safety products.



- **Custom Fabrications**
- **Quality Repairs**
- **Modifications of All Kinds**
- **No Order Too Small**
- **Quick Turnaround**

KONTES
custom glass shop
*call toll-free **800-682-6644***
customglass@kimble-chase.com

Contact the **Kontes Custom Glass Shop** at KIMBLE CHASE for modifications of standard products or fabrication of your unique designs. And when it comes to repairs, we can save you up to 75% of the cost of a new item. Save an additional 10% on repairs of Kontes or Kimble Brand products. Fax your requirements to **856-692-6644**.



15145

Weighing, Cylindrical, Tall & Regular, Short Length ⅋ Joints

KIMAX bottle with a plug-style, closed bottom stopper that fits into an internally ground body. Designed from Federal Specification NNN-B-1493, Type I, Style I requirements.

Kimble Article No.	Approx. I.D. and Height (mm)	⅋ Joint	Approx. Assembled Height (mm)	Approx. Capacity to Neck Base (mL)	Approx. Weight (grams)	Shelf-Pack Qty.	Case Qty.	Case Price
15145-1550	15 x 50	14/10	68	7	9	6	24	333.84
15145-2540	25 x 40	24/12	62	12	18	6	24	329.28
15145-2550	25 x 50	24/12	72	16	21	6	24	358.80
15145-3060	30 x 60	29/12	85	30	30	6	18	322.20
15145-4050	40 x 50	40/12	76	45	52	6	12	297.12
15145-4080	40 x 80	40/12	106	70	67	6	12	287.16
15145-5060	50 x 60	50/12	88	85	78	-	6	185.70



15165

Weighing, Cylindrical, Low Form, Short Length ⅋ Joints

Low form KIMAX bottle with a plug-style stopper that fits into internally ground body. Stopper has a closed bottom.

Kimble Article No.	Approx. I.D. and Height (mm)	Approx. Assembled Height (mm)	⅋ Joint	Approx. Capacity to Neck Base (mL)	Approx. Weight (grams)	Shelf-Pack Qty.	Case Qty.	Case Price
15165-5030	50 x 30	60	50/12	35	53	2	6	192.54
15165-6030	60 x 30	58	60/12	50	71	2	6	221.40
15165-7033	70 x 33	60	71/15	82	111	2	6	251.34



15157

Weighing, Stackable, Cylindrical, Parr, Short Length ⅋ Joints

A special size KIMAX bottle, originally developed for use in weighing small samples of coal. Cap-style closure fits over externally ground body. **A 15182 cap-style stopper may be used as a replacement.** However, it does not have a marking spot.

Kimble Article No.	Approx. Body I.D. and Height (mm)	Approx. Assembled Height (mm)	⅋ Joint	Approx. Capacity to Neck Base (mL)	Approx. Weight (grams)	Shelf-Pack Qty.	Case Qty.	Case Price
15157-2024	20 x 24	35	24/12	4	13	6	12	249.72



15146

Weighing, Cylindrical, Tall & Regular, Short Length ⅋ Joints

KIMAX bottle with a cap-style closure that fits over externally ground body. The 7.5 x 15 mm size is suitable for general micro work and as a container for hygroscopic materials where the bottle containing the sample is dropped into the reaction flask. **The 40 x 80 size accommodates 1" x 3" micro TLC plates and serves as a micro developing tank.** Designed from Federal Specification NNN-B-1493, Type I, Style II requirements. **Replacement stopper is 15180 series, below. A 15182 stopper may also be used.** However, it does not have a marking spot.

Kimble Article No.	Approx. Body I.D. and Height (mm)	Approx. Assembled Height (mm)	⅋ Joint	Approx. Capacity to Neck Base (mL)	Approx. Weight (grams)	Shelf-Pack Qty.	Case Qty.	Case Price
15146-2540	25 x 40	52	29/12	12	20	6	18	325.26
15146-2550	25 x 50	62	29/12	16	23	6	18	325.26
15146-3060	30 x 60	72	34/12	30	32	6	18	366.84
15146-4050	40 x 50	64	45/12	45	55	6	12	307.68
15146-4080	40 x 80	94	45/12	70	72	6	12	320.64
15146-40100	40 x 100	114	45/12	92	83	6	12	348.60

Replacement Parts

15180-2912	Stopper Only, Cap Style, 33 x 24 mm, ⅋ 29/12	14.82
15180-3412	Stopper Only, Cap Style, 39 x 24 mm, ⅋ 34/12	18.01
15180-4512	Stopper Only, Cap Style, 50 x 26 mm, ⅋ 45/12	19.81



15180

OUR ASSURANCE TO YOU

Since 1920, Kimble Glass has worked closely with the U.S. Department of Commerce, National Bureau of Standards (NBS) in developing and refining methods of calibration for a wide variety of volumetric glassware. Through this close relationship with NBS, Kimble developed a reputation as the leading manufacturer of high precision volumetrically accurate glassware. NBS, as the governing body determining calibration procedures, created and published Circular 602, "Testing of Glass Volumetric Apparatus".

In 1974, NBSIR 74-461, "The Calibration of Small Volumetric Laboratory Glassware", replaced Circular 602. Shortly thereafter, a transfer was made from NBS to ASTM as the governing body to maintain or modify methods for calibration procedures. At that time, ASTM E542, "Standard Practice for Calibration of Volumetric Ware", was created by incorporating NBSIR 74-461. Today, all Kimble Brand volumetric glassware is manufactured in compliance with ASTM E542.

There are a multitude of specifications applicable to glassware. Examples include E694 which pertains to dimensional specifications for volumetric glassware and E438 which specifies types of glass used in manufacturing laboratory apparatus. ***The methods listed below are for volumetric tolerances of specific products.***

E288	Standard Specifications for Volumetric Flasks.
E969	Standard Specifications for Volumetric (Transfer) Pipets.
E1293	Standard Specifications for Glass Measuring (MOHR) Pipets.
E287	Standard Specifications for Burets.
E1272	Standard Specifications for Graduated Cylinders.

The "standards" manufactured for production of volumetric glassware utilize gravimetric procedures to correlate weight to mass and ultimately to volume. Many variables must be considered in this process as noted in E542. Our standards are volumetrically calibrated glass instruments made in compliance with ASTM methodology and using equipment traceable to National Institute of Standards and Technology (NIST) formerly NBS.

The Class A designation on glassware refers to meeting specific requirements for the volumetric tolerances in the methods listed above. A serial number on each piece of Kimble Brand Class A serialized glassware provides an easy way for a laboratory to track which specific items are used during analytical testing. This traceability provides the ultimate control for your quality process. In addition, the certificate supplied with Kimble Brand serialized glassware is "our assurance" to you that these products are made to all appropriate ASTM Specifications.

Methods and specifications can be obtained by contacting :
ASTM
100 Barr Harbor Drive
West Conshohocken, PA 19428-2959
Phone: (610) 832-9585 Fax: (610) 832-9555

A serial number on each piece of Kimble Brand Class A glassware provides an easy way for a laboratory to track which specific items are used during analytical testing. This traceability provides the ultimate control for your quality process.


CERTIFICATE OF GRADUATION ACCURACY

Buret 17084F-50 (T.D.) Serial Number: 3824

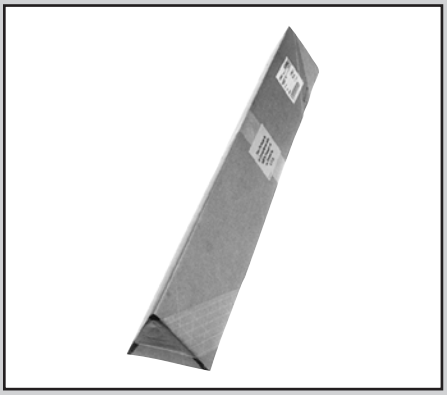
KIMBLE certifies that the design and calibration accuracy conforms to ASTM E287 - Standard Specification for Burets.
Capacity: 50 mL Tolerance: ±0.05 mL

KIMBLE volumetric standards are traceable to the National Institute of Standards and Technology (NIST).
KIMBLE master calibration weight set number traceable to NIST is test #40674.

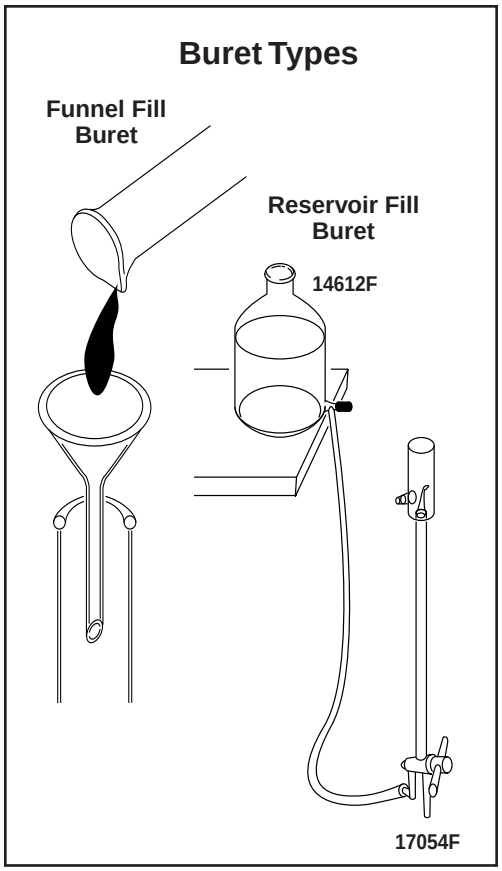
Dale A. Laugeholm 5/20/04
Certified By Certification Date

KIMBLE CHASE is dedicated to supporting your ISO-9000 programs as well as providing you with products that live up to our own rigid quality standards.

After graduations are applied, all Class A serialized glassware is subjected to further retesting/verification procedures by highly trained and qualified personnel. Precision volumetric standards and equipment, traceable to NIST, are utilized for the calibration of all KIMBLE Brand serialized glassware. This further insures that stated volumetric accuracies are being maintained. A "Certificate of Graduation Accuracy" referencing applicable ASTM product specifications is provided.



The packaging secures the buret to insure that it arrives unbroken.



BURETS

KIMBLE CHASE offers unmatched quality in materials and craftsmanship. Our selection of burets reflects many notable innovations. All have a high resistance to both chemical attack and mechanical shock. Only the finest accurate-gauge or precision-bore heavy-walled tubing is used to insure precise calibration and long service. Colored markings, large numerals and sharp, fine-line divisions make these burets easy to read; markings on scales are permanently fused. Most burets are supplied with KIM-KAP dust caps.

Careful study of the complete line will enable you to realize full economy. For example, you may buy general purpose burets without polytetrafluoroethylene (PTFE) stopcock plugs thus permitting a savings.

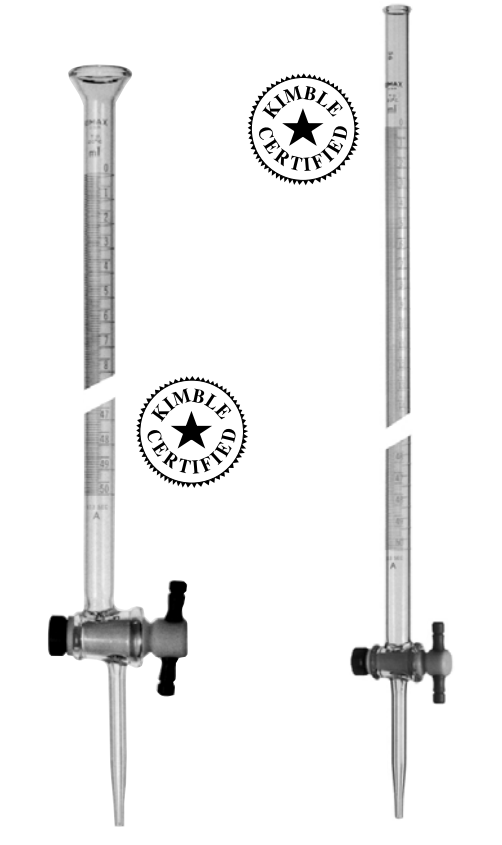
Stopcocks accepting glass plugs have a 1:10 standard taper and satin finished surfaces (ASTM E675). PTFE plugs have a 1:5 taper and are engineered with a mirror finish barrel to assure leakproof seating, smooth turning, and correct alignment (ASTM E911). PTFE plugs are self lubricating, non-contaminating and will not freeze in the stopcock barrel, even after repeated use with strong alkali solutions. When not in use or for prolonged storage, loosen plug to prevent cold flow distortion into the glass barrel.

Burets with side filling tubes use 1/4 inch I.D. flexible tubing. Delivery end of pinch clamp style burets accept 5/16 inch I.D. tubing except for 17081 dispensing burets which utilize 3/8 inch I.D. tubing.

When you need a buret, KIMBLE CHASE has exactly what you need.

Stopcocks with Polytetrafluoroethylene (PTFE) Plugs

- Airtight fit to prevent leakage.
- 1:5 taper to prevent binding over a wide temperature range.
- Smooth barrel finish to provide for easy turning without grease — a source of possible contamination.
- Non-freezing feature due to the chemical inertness of PTFE, particularly valuable with alkaline solutions.
- Sturdy threads fine enough to permit easy adjustment.
- Rubber washer between the PTFE washer and nut to maintain uniform tension.
- Stopcocks are designed to comply with ASTM Specification E911.



17094F 17027F

Class A, Serialized and Certified, Straight Bore PTFE Stopcock, with Dust Cap

KIMAX precision bore buret is permanently marked with an individual serial number. Supplied with a Certificate of Graduation Accuracy. Designed from ASTM Specification E287, Class A requirements. KIM-KAP dust cap is included. Delivery stem of the 10 mL size is 115 mm long to meet requirements of potentiometric titration burets (ASTM D664). PTFE plug for all sizes is ℒ 2. **Scale is a durable white ceramic enamel. Replacement stopcock is 41500F-2.**

Kimble Article No.	Capacity (mL)	Subdivision (mL)	±Tol. (mL)	Approx. Length (mm)	KIM-KAP Size (mm)	Case Qty.	Case Price
17027F-10	10	0.05	0.02	664	13	1	166.19
17027F-25	25	0.10	0.03	614	13	1	177.13
17027F-50	50	0.10	0.05	745	16	1	183.06
17027F-100	100	0.20	0.10	791	20	1	203.25

Serialized and Certified, with Diagonal PTFE Stopcock, Class A

KIMAX precision bore buret is permanently marked with an individual serial number. Supplied with a Certificate of Graduation Accuracy. With a diagonal bore stopcock and a funnel top. **Scale is durable white enamel.** Designed from ASTM Specification E287, Class A requirements.

Kimble Article No.	Capacity (mL)	Subdivision (mL)	±Tol. (mL)	Approx. Length (mm)	ℒ Stopcock Size	Case Qty.	Case Price
17094F-50	50	0.1	0.05	746	2	1	158.66

Straight Bore PTFE Stopcock, with Dust Cap, Class B

KIMAX buret with a size 2 PTFE plug. KIM-KAP dust cap is included. Scale is durable black ceramic enamel. Designed from ASTM Specification E287, Class B requirements. **Replacement stopcock plug is 41500F-2.**

Kimble Article No.	Capacity (mL)	Subdivision (mL)	±Tol. (mL)	Approx. Length (mm)	KIM-KAP Size (mm)	Case Qty.	Case Price
17026F-10	10	0.05	0.04	518	13	1	101.56
17026F-25	25	0.10	0.06	571	13	1	101.56
17026F-50	50	0.10	0.10	738	16	1	111.03
17026F-100	100	0.20	0.20	765	20	1	128.31

Replacement Parts

17026G-50	Buret Only, with a LUBRI-FLO Stopcock barrel	1	74.74

RAY-SORB®, Straight Bore PTFE Stopcock, with Dust Cap, Class B

KIMAX buret with a size 2 PTFE plug. RAY-SORB processed to protect liquids sensitive to light of shorter wave lengths. KIM-KAP dust cap is included. Scale is durable, opaque white ceramic enamel. **Replacement stopcock is 41500F-2.**

Kimble Article No.	Capacity (mL)	Subdivision (mL)	±Tol. (mL)	Approx. Length (mm)	KIM-KAP Size (mm)	Case Qty.	Case Price
17033F-50	50	0.10	0.10	738	16	1	153.28

See additional RAY-SORB® products in the *RAY-SORB®* section.

Straight Bore Glass Stopcock, with Dust Cap, Class B

KIMAX buret with a size 2 stopcock. A KIM-KAP dust cap is included. Scale is durable black ceramic enamel. Designed from ASTM Specification E287, Class B requirements.

Kimble Article No.	Capacity (mL)	Subdivision (mL)	±Tol. (mL)	Approx. Length (mm)	KIM-KAP Size (mm)	Case Qty.	Case Price
17026-50	50	0.10	0.10	738	16	1	87.37



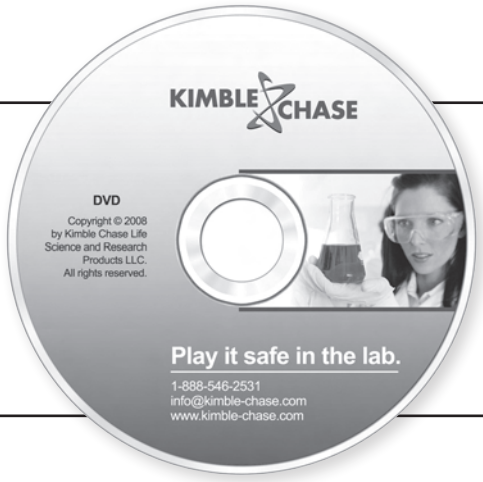
17026F



17033F



17026



Safety Program - *Play it safe in the lab.*

Our Safety Program discusses the ten basic safety rules of handling glassware as well as the technical properties and physics of glass. Available as a DVD.

Kimble Article No.	Format	Case Qty.	Case Price
99991D-99	DVD	1	23.99

See more safety products in the *SAFETYWARE* section.



354000



17080F

Dispensing, with Straight Bore PTFE Stopcock

Large size KIMAX buret used for dispensing. PTFE stopcock for all sizes is # 4. Scale is durable white ceramic enamel. **Replacement stopcock is 41500F-4.**

Kimble Article No.	Capacity (mL)	Subdivision (mL)	±Tol. (mL)	Approx. O.D. and Length (mm)	Shelf-Pack Qty.	Case Qty.	Case Price
17080F-250	250	1	2.0	36 x 544	1	2	276.56
17080F-500	500	5	2.5	43 x 646	1	2	306.48
17080F-1000	1000	10	5.0	52 x 780	1	2	365.28

Dispensing, Class B, For Pinch Clamp

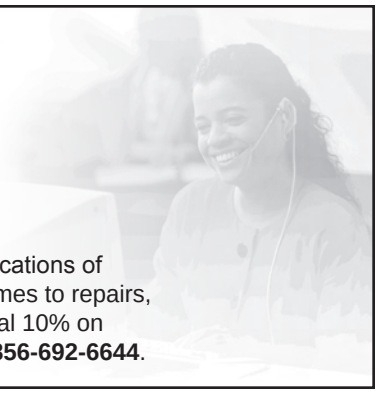
Laboratory-grade buret for use with a variety of laboratory solvents or solutions in clinical or industrial applications. Supplied complete with tip but without connecting material.

Kontes Article No.	Capacity (mL)	Subdiv. (mL)	Hose Connection	Approx. Overall Height x O.D. (mm)	Case Qty.	Case Price
354000-0250	250	1	#2	455-505 x 35	1	110.70
354000-0500	500	5	#2	555-605 x 45	1	128.76
354000-1000	1000	10	#3	670-720 x 54	1	164.22



- **Custom Fabrications**
- **Quality Repairs**
- **Modifications of All Kinds**
- **No Order Too Small**
- **Quick Turnaround**

KONTES
custom glass shop
*call toll-free **800-682-6644***
customglass@kimble-chase.com



Contact the **Kontes Custom Glass Shop** at KIMBLE CHASE for modifications of standard products or fabrication of your unique designs. And when it comes to repairs, we can save you up to 75% of the cost of a new item. Save an additional 10% on repairs of Kontes or Kimble Brand products. Fax your requirements to **856-692-6644**.

Educational Grade, Straight Bore Glass Stopcock

This buret is ideal for use in educational institutions and for many general laboratory procedures. Stopcock for all sizes is ⚧ 2. A KIM-KAP dust cap is included. Scale is durable black ceramic enamel. Educational grade.

Kimble Article No.	Capacity (mL)	Subdivision (mL)	Approx. Length (mm)	KIM-KAP Size (mm)	Case Qty.	Case Price
17030K-50	50	0.10	738	16	12	459.96

Threaded Closure Fit, Straight Bore PTFE Stopcock, with Dust Cap

Economical and versatile, this KIMAX buret is composed of four replaceable components and incorporates use of a threaded closure which eliminates accidental dislodging of stopcock assembly during use. The accurately graduated tube has a reinforced top with a lower end accurately tooled to provide precise I.D. fit with a PTFE stopcock assembly. **Assembly should be wetted before installation** and is provided with a cap to secure with a positive closure to the threaded buret body. A ground tip fits into lower end of PTFE stopcock assembly. A KIM-KAP dust cap is included. The short length of 25 mL size fits most student laboratory drawers.

Kimble Article No.	Capacity (mL)	Graduated Interval (mL)	Approx. Assembled Length (mm)	KIM-KAP Size (mm)	Case Qty.	Case Price
17121H-25	25	0.1	420	16	1	68.77
17121H-50	50	0.1	725	16	1	71.65

Replacement Parts

41007F-2	PTFE Stopcock Assembly, with Threaded Connector for 17121H burets and 29053H Funnels	1	56.74
17034H-99	Buret tip for 17021H and 17121H	6	33.06

Straight Bore PTFE Stopcock, Dark Scale, with Dust Cap

Economical, versatile, KIMAX buret composed of four replaceable components. The graduated barrel has a reinforced top and a lower end ruggedly constructed and accurately tooled to provide precise fit with a PTFE stopcock assembly. **Assembly should be wetted before installation.** A ground tip fits into lower end of PTFE stopcock assembly. A KIM-KAP dust cap is included. The short length of 25 mL size fits most student laboratory drawers. The 25 mL size has permanent brown stained scale and the 50 mL has durable printed black ceramic enamel.

Kimble Article No.	Capacity (mL)	Graduated Interval (mL)	Approx. Assembled Length (mm)	KIM-KAP Size (mm)	Case Qty.	Case Price
17021H-25	25	0.1	420	16	6	412.32
17021H-50	50	0.1	725	16	6	425.40

Replacement Parts

17021J-25	Buret Only, Supplied without Stopcock Assembly, Tip or Cap, 25 mL	6	136.80
17021J-50	Buret Only, Supplied without Stopcock Assembly, Tip or Cap, 50 mL	6	136.62
41006F-2	PTFE Stopcock Assembly for 17021H, 17800 and 29050H	1	50.78
17034H-99	Buret Tip for 17021H and 17121H	6	33.06

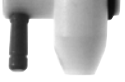
41007F


17034H


17030K

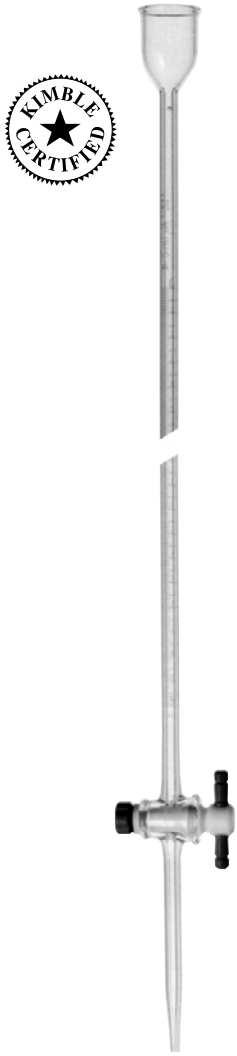

17121H


17021H


41006F


17021J


17034H



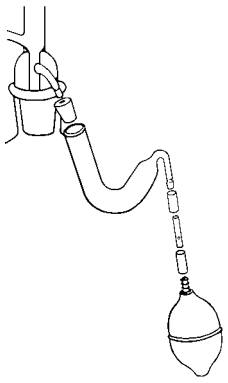
17110F

Micro, with Straight Bore PTFE Stopcock, Class A, Serialized and Certified

KIMAX precision bore buret is permanently marked with an individual serial number. Supplied with a Certificate of Graduation Accuracy. Funnel top accepts a one-hole #3 rubber stopper. Short length of glass tubing aids in filling the buret through the tip by vacuum if desired. Stopper and tubing are not supplied. Stopcock for all sizes is ℙ 2. Scale is durable white ceramic enamel. Designed from Federal Specification NNN-B-789, Type I, Style I, Class A requirements. **Replacement stopcock is 41500F-2.**

Kimble Article No.	Capacity (mL)	Subdivision (mL)	±Tol. (mL)	Approx. Length (mm)	Case Qty.	Case Price
17110F-5	5	0.01	0.01	790	1	257.21
17110F-10	10	0.02	0.02	810	1	257.21

Procedure for Using Automatic Buret 17124F



Place the one-holed rubber stopper, large end first, on the lower tubulation of the buret.

Add the U-shaped drying tube, prefilled with drying medium, over the small end of the stopper.

Join the drying tube to the connecting tube and then the rubber squeeze bulb with the rubber tubing.

To fill the buret, turn the stopcock to connect, filling tube to the buret. Squeeze the rubber bulb several times while closing the vent hole in the connecting tube with your finger.

As liquid rises and overflows from the tip above the buret, turn the stopcock to off and remove your finger from the vent hole of the connecting tube.

If air is trapped in the stopcock or tip, discharge the air and repeat the filling operation to automatic zero at overflow tip.

Serialized and Certified, Three Way PTFE Stopcock, with Dust Cap, Class A

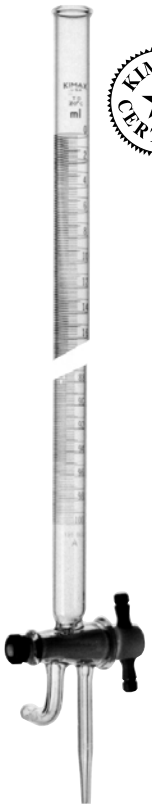
KIMAX precision bore buret is permanently marked with an individual serial number. Supplied with a Certificate of Graduation Accuracy. Filling tube accepts 1/4 inch I.D. flexible tubing. Filling is through the stopcock. KIM-KAP dust cap is included. Scale is durable white enamel. Designed from ASTM Specification E287, Class A requirements. **Replacement stopcock is 41530F-2.**

Kimble Article No.	Capacity (mL)	Subdivision (mL)	±Tol. (mL)	Approx. Length (mm)	KIM-KAP Size (mm)	Case Qty.	Case Price
17052F-25	25	0.1	0.03	617	13	1	147.98
17052F-50	50	0.1	0.05	748	16	1	155.97
17052F-100	100	0.2	0.10	794	20	1	199.82

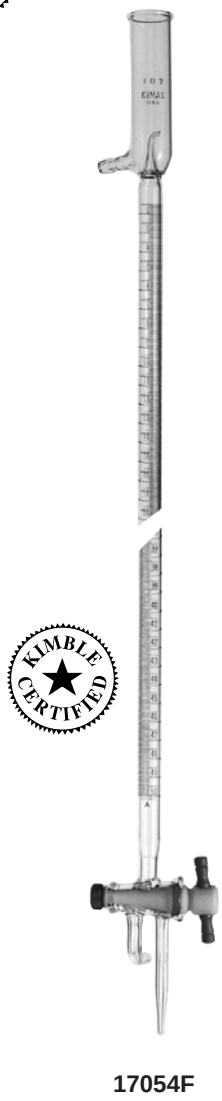
Serialized and Certified, Automatic Zero, with PTFE Stopcock, Class A

KIMAX buret is permanently marked with an individual serial number. Supplied with a Certificate of Graduation Accuracy. Filling tube and overflow tube at the top of the buret accept 1/4 inch I.D. flexible tubing. Filling is through stopcock. Buret is self-zeroing style. Stopcock for all sizes is ℔ 2. Scales are durable black enamel. Designed from ASTM E287, Class A requirements. **Replacement stopcock is 41530F.**

Kimble Article No.	Capacity (mL)	Interval Grad. (mL)	Subdivision (mL)	±Tol. (mL)	Approx. Length	Case Qty.	Case Price
17054F-10	10	0.5 to 10	0.05	0.02	520	1	185.16
17054F-25	25	1.0 to 25	0.10	0.03	580	1	185.28
17054F-50	50	1.5 to 50	0.10	0.05	740	1	191.42
17054F-100	100	3.0 to 100	0.20	0.10	770	1	227.04



17052F

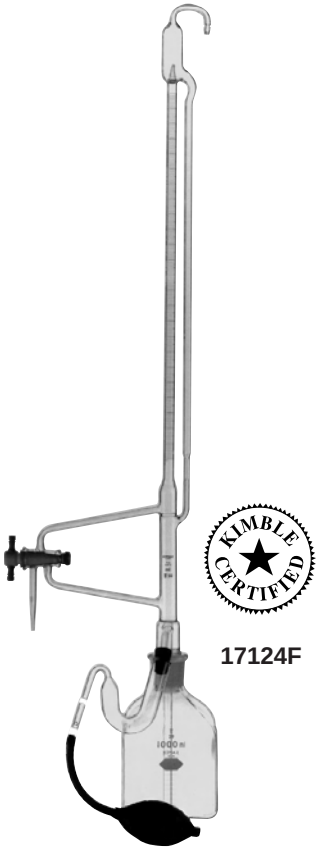


17054F

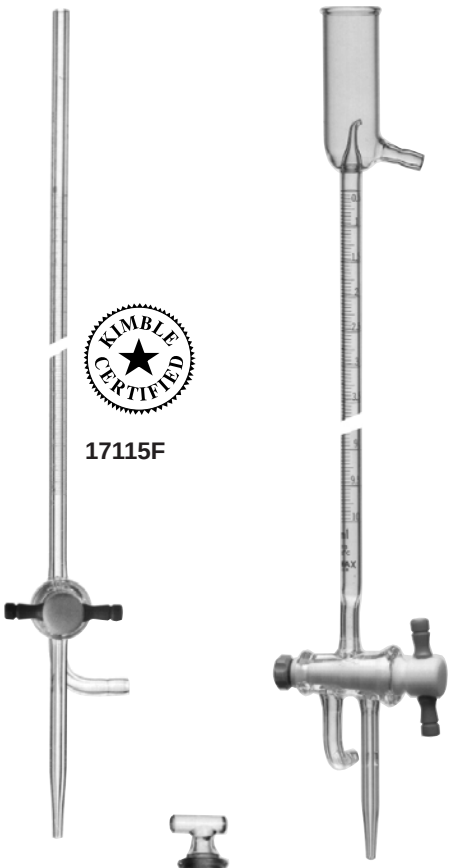
Automatic, Three Way PTFE Stopcock, with Reservoir Bottle, Class A, Serialized and Certified

KIMAX precision bore buret is permanently marked with an individual serial number. Supplied with a Certificate of Graduation Accuracy. Packed complete with a reservoir bottle, U-shaped drying tube, vented connecting tube, rubber squeeze bulb, # 1 one-holed rubber stopper and 1/4 inch I.D. rubber tubing. Stopcock for all sizes is ℔ 2. Scale is durable black ceramic enamel. Calibrated to the accuracy requirements found in ASTM Specification E694. **Replacement stopcock is 41530F-2.**

Kimble Article No.	Cap. (mL)	Interval Grad. (mL)	Subdivision (mL)	Approx. Assembled Length (mm)	±Tol. (mL)	℔ Stopper Size Between Buret and Bottle	Reservoir Capacity (mL)	Case Qty.	Case Price
17124F-10	10	0.5 to 10	0.05	765	0.02	29	1000	1	548.95
17124F-25	25	1.0 to 25	0.10	858	0.03	29	1000	1	548.91
17124F-50	50	1.5 to 50	0.10	1045	0.05	34	2000	1	570.43
17124F-100	100	3.0 to 100	0.20	1090	0.10	34	2000	1	741.58

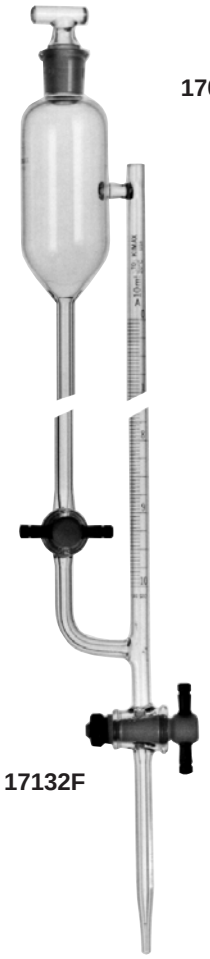


17124F



17115F

17051F



17132F

Automatic, with Three-Way PTFE Stopcock, Class B

KIMAX buret with a filling tube and overflow tube at the top of the buret that accepts 1/4 inch I.D. flexible tubing. Filling is through stopcock. Buret is self-zeroing style. Stopcock for all sizes is ℰ 2. Scale is durable black ceramic enamel. Designed from ASTM Specification E287, Class B requirements. **Replacement stopcock is 41530F-2.**

Kimble Article No.	Capacity (mL)	Interval Grad. (mL)	Subdivision (mL)	±Tol. (mL)	Approx. Length (mm)	Case Qty.	Case Price
17051F-10	10	0.5 to 10	0.05	0.04	515	1	167.26
17051F-25	25	1.0 to 25	0.10	0.06	577	1	157.34
17051F-50	50	1.5 to 50	0.10	0.10	735	1	157.34
17051F-100	100	3.0 to 100	0.20	0.20	765	1	191.35

Serialized and Certified, Micro, with Three-Way PTFE Stopcock, Class A

KIMAX precision bore buret is permanently marked with an individualized serial number. Supplied with a Certificate of Graduation Accuracy. Filling tube accepts 1/4 inch I.D. flexible tubing. Filling is through the stopcock. Stopcock for all sizes is ℰ 2. Scale is durable white ceramic enamel. **Replacement stopcock is 41530F-2.**

Kimble Article No.	Capacity (mL)	Subdivision (mL)	±Tol. (mL)	Approx. Length (mm)	Case Qty.	Case Price
17115F-5	5	0.01	0.01	761	1	289.99
17115F-10	10	0.02	0.02	781	1	257.21

Straight PTFE Stopcock, Class A

KIMAX precision bore buret has a side filling tube with a separate stopcock to control liquid within the permanently attached reservoir, approximately 70 mL in capacity. Reservoir stopper is medium length ⅋ 14/20. Stopcocks are ℰ 2. Scale is durable white ceramic enamel. Calibrated to the accuracy requirements found in ASTM Specification E694. **Replacement stopcock is 41500F-2.**

Kimble Article No.	Capacity (mL)	Subdivision (mL)	±Tol. (mL)	Approx. Length with Stopper (mm)	Case Qty.	Case Price
17132F-2	2	0.01	0.01	590	1	269.19
17132F-5	5	0.01	0.01	815	1	292.54
17132F-10	10	0.05	0.02	620	1	278.57

Schellbach Burets

Schellbach burets employ a blue line on a broader white band running vertically behind the scale to create an optical effect which causes the meniscus to assume an apparent form. The meniscus is read at the narrowest point of the blue line just above the true meniscus. **See Figure 1.** The meniscus of automatic zero burets must be read at the narrowest point of the blue line as shown in figure 1. Conventional Shellbach burets can be read using either the true or apparent meniscus, however, the same method must be used for both initial and final settings.

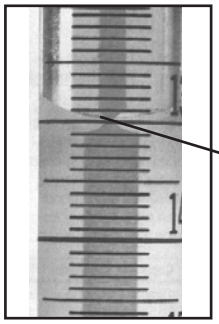


Figure 1

Schellbach, Straight Bore PTFE Stopcock, with Dust Cap

KIM-KAP dust cap is included. Scale is durable black ceramic enamel. **Replacement stopcock is 41500F-2.**

Kimble Article No.	Capacity (mL)	Subdivision (mL)	±Tol. (mL)	Approx. Length (mm)	KIM-KAP Size (mm)	Case Qty.	Case Price
17150F-25	25	0.10	0.06	571	13	1	87.41
17150F-50	50	0.10	0.10	738	16	1	89.94



17150F

Schellbach, Automatic Zero, with Three-Way PTFE Stopcock

KIMAX buret with a filling tube at the stopcock and an overflow tube at the top of the buret that accept 1/4 inch I.D. flexible tubing. An automatic or self-zeroing buret must be read only at the apparent meniscus for which it has been calibrated when volumes are dispensed from zero to any other point. Use of true meniscus in this case would result in a lesser volume being dispensed than between any two other points of the same nominal volume. For greater accuracy, however a “buret reader” should be used to eliminate the exaggerated parallax problems. Stopcock for all sizes is ℔ 2. Scale is durable black ceramic enamel. **Replacement stopcock is 41530F-2.**

Kimble Article No.	Capacity (mL)	Interval Grad. (mL)	Subdivision (mL)	±Tol. (mm)	Approx. Length (mm)	Case Qty.	Case Price
17170F-25	25	1.0 to 25	0.1	0.06	594	1	190.74
17170F-50	50	1.5 to 50	0.1	0.10	754	1	205.18



17170F

Tutwiler, Gas

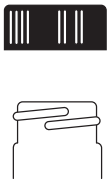
This buret is designed for use with high sulfur content gas streams. All tubing connections are of large I.D. to reduce “clogging”: which occurs when sulfur precipitates out and deposits on the inside of connectors. Supplied with glass stopcock and stopper.

Kimble Article No.	Capacity (mL)	Tolerance Reservoir (mL)	Tolerance Buret (mL)	Approx. Length (mm)	℔ Stopcock Size Top	℔ Stopcock Size Bottom	Case Qty.	Case Price
30034A-100	100	0.15	0.2	480	2	4	1	803.46

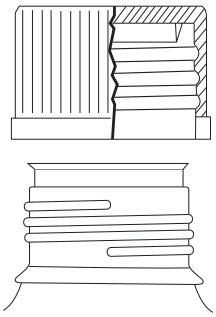


30034A

Screw Threads

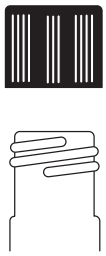

400


410

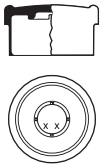

GL-45

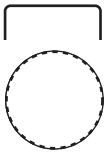

415

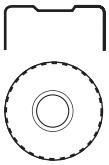

425

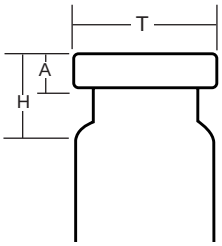

430

Aluminum Seals

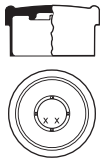

Flip Off Cap


Center Tear


Open Top



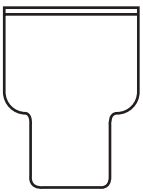

Complete Tear Off


Tear Off Cap

Stoppers

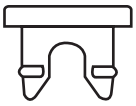

Straight
Plug Style


2 Leg Lyophilization
13mm


Sleeve Style


3 Leg Lyophilization
20mm


Snap-On
Style


2 Leg Lyophilization
20mm

Aluminum Seal, One Piece, Unlined Tear-Out Style

Allows for easy access to septa.

Kimble Article No.	Fits GPI Aluminum Seal Finish	Color	Shelf-Pack Qty.	Case Qty.	Case Price
73820-13	13	Natural	-	1000	66.65
73820-20	20 or 20A	Natural	100	1000	68.12



73820 Series

Aluminum Seal, One Piece, Unlined, Tear-Off Style

Allows for easy access to vial contents.

Kimble Article No.	Fits GPI Aluminum Seal Finish	Color	Shelf-Pack Qty.	Case Qty.	Case Price
73821-13	13	Natural	100	1000	58.60
73821-20	20 or 20A	Natural	100	1000	60.17



73821 Series

Button Top, Unlined Flip Off, Color Coded

Kimble Article No.	Fits GPI Aluminum Seal Finish	Color	Case Qty.	Case Price
73843A-20	20	white	1000	173.16
73843C-20	20	red	1000	173.16



73843 series

Aluminum Seal, One Piece, with PTFE-Faced Tan Silicone Rubber Liner

Medium durometer PTFE / silicone construction. Allows for good resealability, core resistance, multiple injections, and easy penetration.

Kimble Article No.	Fits GPI Aluminum Seal Finish	Thickness, Inches PTFE	Thickness, Inches Silicone Rubber	Shelf-Pack Qty.	Case Qty.	Case Price
N73824-13	13	.002	.060	-	144	125.51
N73824T-20	20 or 20A	.002	.060	-	100	102.82



N73824 Series



73827

Stopper for Aluminum Seal Finish, Gray Butyl Rubber

Kimble Article No.	Fits GPI Aluminum Seal Finish	Approx. Case Qty.	Case Price
73827-13	13	1000	93.70
73827-21	20	1000	177.03



73828 series

Stopper for Aluminum Seal Finish, Gray Butyl Rubber, Lyophilization Style

Kimble Article No.	Fits GPI Aluminum Seal Finish	Number of Legs	Approx. Case Qty.	Case Price
73828-13	13	2	1000	96.58
73828A-21	20	2	1000	155.01



73811(T)

Stopper, Straight Sided Serum, Gray Chlorobutyl

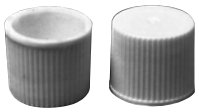
These high quality gray chlorobutyl stoppers are used for research and pharmaceutical packaging applications. Universal gray chlorobutyl formulation passes Japanese, European and United States pharmocepia testing for globally marketed pharmaceutical products. The formulation contains no plasticizers, 2-mercapto-benzothaizole, nitrosamine precursors or natural rubber latex. Formulation is applicable to aqueous solutions with a pH range of 2 to 10. Available with PTFE facing to improve chemical compatability and minimize surface interactions. Durometer 50.

Kimble Article No.	Description	Fits GPI Serum Finish	Approx. Case Qty.	Case Price
73811-21	Stopper, Straight Sided	20 mm	1000	190.49
73811T-21	Stopper, Straight Sided, PTFE-Faced	20 mm	100	73.83

White Polypropylene, Linerless, Economy, for Screw Thread Culture Tube

White polypropylene. Of one-piece construction with a seal achieved by a unique interior design. Will withstand repeated autoclavings, but closures should be removed or loosely applied as they may melt. Intended for use with 73750, 73760 and 73770 disposable culture tubes and 73785 disposable centrifuge tubes. Designed from ASTM Specification E982.

Kimble Article No.	GPI Thread Finish	Approx. Case Qty.	Case Price
73805-15415	15-415	1000	63.32

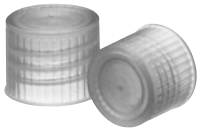


73805

Polypropylene, Linerless

Natural polypropylene. Of one-piece construction with a seal achieved due to a unique inner sealing ring. Autoclavable. Intended for use with 73750, 73760 and 73770 disposable culture tubes and 73785 disposable centrifuge tubes. Designed from ASTM Specification E982.

Kimble Article No.	GPI Thread Finish	Approx. Case Qty.	Case Price
73805B-13415	13-415	1000	63.12
73805B-15415	15-415	1000	63.32
73805B-18415	18-415	500	35.71



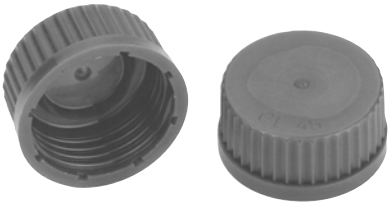
73805B

GL 45, Color Coded

Solid top polypropylene GL 45 caps with internal molded seal rings. Packaged 10 per case.

Kimble Article No.	Description	Maximum Temperature	Case Qty.	Case Price
14395C-45	Blue Cap	140°C	10	27.90
14395C-451	White Cap	140°C	10	28.00
14395C-453	Orange Cap	140°C	10	28.00

For an Open Top, GL 45 cap with PTFE Membrane, see 14395M-45



14395C

GL 45, High Temperature, Red Cap, 180° C Applications

PBT (Polybuthyleneteraphthalate) cap with PTFE faced silicone liner. Good chemical resistance to alcohols, ethers, hydrocarbons, and dilute or strong acids.

Kimble Article No.	Description	Case Qty.	Case Price
14395H-452	High Temp Cap, Red	10	93.90
953909-0000	High Temp Cap, Red	1	10.10



14395H
953909

Pour Ring, GL 45, Clear and Red High Temperature

(For 14395, 14397, 14399 Bottles & 26720 Flasks)

Pour rings are made up of clear drip free polypropylene. Designed for use with 14395 series bottles and 26720 series flasks. 14395E-452 high temperature ring is recommended for use with 14395H-452 high temperature cap.

Kimble Article No.	Description	Max. Temperature	Case Qty.	Case Price
14395P-45	Polypropylene, Clear	140° C	10	9.80
14395E-452	ETFE, Red, High Temperature	180° C	10	22.00



14395P
14395E



14255

Phenolic, with Rubber Liner

Black phenolic, rubber-lined closure for use with Kimble #14250. Closures have a cemented-in rubber liner and will withstand several repeated autoclavings. Replacement part for 14250, 14915 and 14925.

Kimble Article No.	GPI Thread Finish	Approx. Case Qty.	Case Price
14255-28	28-400	150	228.00



45066B

Phenolic, with White Rubber Liner

Cap is made of a special black phenolic material (mineral filled) to withstand the effects of repeated autoclaving. White rubber liner / cap bond was selected to retain its adhesive properties during autoclaving. This cap is threaded from the liner down approximately to half the total weight, except 38-430 which has full threads. The cap is identified in ASTM Specification E982, Class A requirements.

Kimble Article No.	Size	Approx. Cap Height (mm)	Case Qty.	Case Price
45066B-13	13-415	14	300	87.00
45066B-15	15-415	16	300	69.00
45066B-18	18-415	18	225	85.50
45066B-24	24-410	19	150	84.00
45066B-28	28-410	20	150	316.50
45066B-38	38-430	26	150	303.00

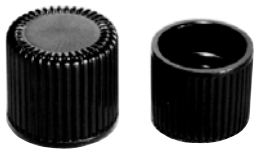


45066C

Phenolic, with PTFE-Faced Rubber Liner

Cap is made of a special black phenolic material (mineral filled) to withstand the effects of repeated autoclaving. With a PTFE-faced rubber liner. Liner/cap bond was selected to retain its adhesive properties during autoclaving. This cap is identified in ASTM Specification E982, Class B requirements.

Kimble Article No.	Size	Approx. Cap Height (mm)	Case Qty.	Case Price
45066C-13	13-415	14	300	228.00
45066C-15	15-415	16	300	228.00
45066C-18	18-415	18	225	216.00
45066C-24	24-410	19	150	244.50
45066C-28	28-410	20	150	738.00
45066C-38	38-430	26	50	284.00



73800

Phenolic, Cemented-In Rubber Liner

Closure is made of a special black phenolic material (wood filled) very resistant to the effects of temperature and steam encountered in autoclaving. A cemented-in rubber liner is provided, and the cement used has also been selected to retain its adhesive properties during autoclaving. Intended for use with 73750, 73760 and 73770 disposable culture tubes. May also be used with 73785 disposable centrifuge tubes. Designed from ASTM Specification E982.

Kimble Article No.	GPI Thread Finish	Approx. Case Qty.	Case Price
73800-13415	13-415	1000	90.49
73800-15415	15-415	1000	103.89
73800-18415	18-415	1000	128.58

Phenolic, with PTFE-Faced White Rubber Liner

Closure is made of a special black phenolic material (wood filled) very resistant to the effects of temperature and steam encountered in autoclaving. Cemented-in polytetrafluoroethylene (PTFE) faced rubber liner is provided. Cement used has also been selected to retain its adhesive properties during autoclaving. Packed in bags of 125 pieces, 4 bags per case. Sizes 13-415, 15-415 and 24-400 are intended for use with 73785 disposable centrifuge tubes. Designed from ASTM Specification E982.



73802

Kimble Article No.	GPI Thread Finish	Approx. inner Pack Qty.	Case Qty.	Case Price
73802-8425	8-425	-	144	36.09
73802-13415	13-415	125	500	78.31
73802-13425	13-425	-	144	55.93
73802-15415	15-415	125	500	83.55
73802-15425	15-425	-	144	60.65
73802-18400	18-400	-	144	83.37
73802-20400	20-400	-	144	113.67
73802-22400	22-400	-	144	118.35
73802-24400	24-400	-	144	119.64
73802-33430	33-430	-	144	176.26
73802-38430	38-430	-	144	202.81

White Urea, with PTFE-Faced Foam-Backed Rubber Liner



73802U

Kimble Article No.	GPI Thread Finish	Approx. inner Pack Qty.	Case Qty.	Case Price
73802U-8425	8-425	144	432	134.93
73802U-13425	13-425	144	432	126.19
73802U-15425	15-425	144	432	162.53
73802U-18400	18-400	144	432	172.46
73802U-20400	20-400	144	432	236.31
73802U-24400	24-400	144	432	435.20

Phenolic, Black, with White Rubber Liner



73803

Kimble Article No.	GPI Thread Finish	Case Qty.	Case Price
73803-33430	33-430	144	92.26
73803-38430	38-430	144	118.15

Polypropylene, Black, with Welded PTFE / Silicone Liner, Micro-Link, Patented,

Closures are ideal for repeated autoclaving. The welded liner also eliminates the possibility of glue contamination.



73808

Kimble Article No.	GPI Thread Finish	Case Qty.	Case Price
73808-13415	13-415	288	157.66
73808-15415	15-415	288	165.96
73808-18415	18-415	288	199.16
73808-24400	24-400	72	56.73
73808-24410	24-410	144	118.09
73808-28400	28-400	48	53.54
73808-28410	28-410	36	41.14
73808-33430	33-430	48	41.84
73808-38430	38-430	48	45.95

Phenolic, Cone-Shaped Taperseal Liner

Black phenolic cap has a securely mounted polyethylene cone-shaped liner which offers a two part seal. The closure forms a seal around the rim and the taperseal cone forms a seal against the inner diameter of the vial opening. The design has superior torque retention and excellent sample storage and re-sealing properties.



73809

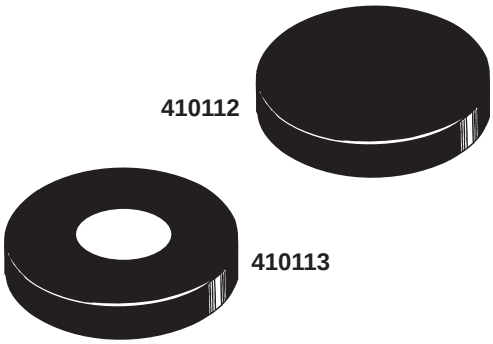
Kimble Article No.	GPI Thread Finish	Case Qty.	Case Price
73809-13425	13-425	144	46.90
73809-15425	15-425	144	51.29
73809-18400	18-400	144	52.75
73809-20400	20-400	144	49.83
73809-22400	22-400	144	54.22



410125

Polypropylene, White with PTFE / Silicone Liner

Kontes Article No.	GPI Thread Finish	Case Qty.	Case Price
410125-7000	70-400	6	37.96



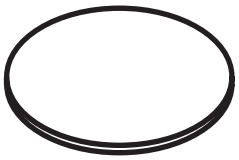
410112

410113

Blue Polypropylene, Open or Solid Top, for TCLP Bottles

Recommended for use with Kontes TCLP bottles. Available with a solid top (410112-0000) or an open-top (410113-0000). Liners are sold separately.

Kontes Article No.	GPI Thread Finish	Approx. Hole Diameter (mm)	Case Qty.	Case Price
410112-0000	100-400	-	6	49.08
410113-0000	100-400	12.7	6	54.89



410133
410134
410135

Liners for TCLP Bottle Caps

The size 51 liner (410135-0051) is recommended for use with the KONTES disposable TCLP bottle (332140-0251). The porous PTFE liner (410133-0100) is recommended for use with the 100-400 cap (410113-0000) to provide out-gassing during TCLP procedures.

Kontes Article No.	Fits Thread Cap Size (mm)	Liner Material	Thickness (inches)	Case Qty.	Case Price
410133-0100	100	Porous PTFE	.050	6	42.11
410134-0100	100	PTFE/Silicone	.060	6	82.07
410135-0051	51	PTFE	.015	10	28.72
410135-0100	100	PTFE	.030	6	21.96



774161

Septa, PTFE-Faced Silicone

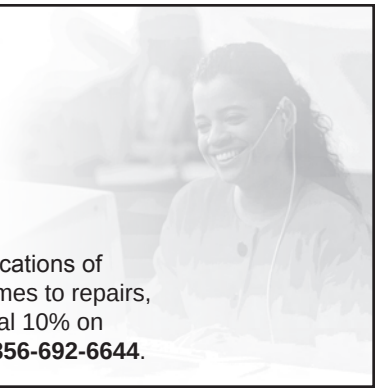
Used with open-top cap to access container with a syringe. PTFE facing maintains the integrity of the contents while the silicone rubber backing allows repeated puncturing through the seal. All septa are .065" thick (.005 PTFE/.060 silicone) except 774161-0924 which is .100" thick (.010 PTFE/.090 silicone).

Kontes Article No.	Fits Thread Cap Size	Case Qty.	Case Price
774161-0008	8	48	18.27
774161-0013	13	48	34.65
774161-0015	15	48	54.38
774161-0018	18	24	29.77
774161-0020	20	24	31.61
774161-0024	24	24	33.87
774161-0924	24	24	53.83



- **Custom Fabrications**
- **Quality Repairs**
- **Modifications of All Kinds**
- **No Order Too Small**
- **Quick Turnaround**

KONTES
custom glass shop
*call toll-free **800-682-6644***
customglass@kimble-chase.com



Contact the **Kontes Custom Glass Shop** at KIMBLE CHASE for modifications of standard products or fabrication of your unique designs. And when it comes to repairs, we can save you up to 75% of the cost of a new item. Save an additional 10% on repairs of Kontes or Kimble Brand products. Fax your requirements to **856-692-6644**.

White Urea, Cork-Backed Aluminum Foil Liner, for Scintillation Vials

Closure is made from white urea and has cork-backed aluminum foil liner. Closure is not autoclavable. Top is suitable for marking. Caps are packed 100 pieces per plastic bag, 10 bags per case.

Kimble Article No.	GPI Thread Finish	Approx. Case Qty.	Case Price
74520-15425	15-425	1000	101.16
74520-22400	22-400	1000	165.61

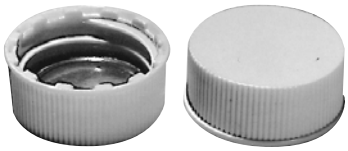


74520

White Polypropylene, Pulp-Backed Aluminum Foil Liner, for Scintillation Vials

Closure is made from white polypropylene and has a pulp-backed aluminum foil liner. Top is suitable for marking. Suitable for use with some strong oxidizing agent scintillation "cocktails". Closures are packed 100 pieces per plastic bag, 10 bags per case.

Kimble Article No.	GPI Thread Finish	Approx. Case Qty.	Case Price
74521-15425	15-425	1000	68.04
74521-22400	22-400	1000	113.38



74521

White Polyethylene, without Liner, for Scintillation Vials

Closure is made from white polyethylene and is linerless. Top is suitable for marking. Closures are packed 100 pieces per plastic bag, 10 bags per case.

Kimble Article No.	GPI Thread Finish	Approx. Case Qty.	Case Price
74522-22400	22-400	1000	103.82



74522

White Urea, Foamed Polyethylene Liner, for Scintillation Vials

Replacement cap for 58511 and 58511B. Cap is made from white urea and has a foamed polyethylene liner. Top is suitable for marking. Closures are packed 100 pieces per plastic bag, 10 bags per case.

Kimble Article No.	GPI Thread Finish	Approx. Case Qty.	Case Price
74524-22400	22-400	1000	109.86



74524

White Urea, Polyethylene Cone Liner, for Scintillation Vials

Cap is made from white urea and has a polyethylene cone-shaped liner. Top is suitable for marking. Closure is not autoclavable, as the liner may melt. Closures are packed 1000 pieces per plastic bag in a cardboard box.

Kimble Article No.	GPI Thread Finish	Approx. Case Qty.	Case Price
74525-22400	22-400	1000	232.90

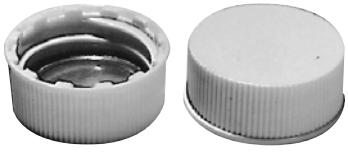


74525

White Urea, Foam Backed F-217 PTFE Liner, for Scintillation Vials

Replacement for 74504, 74512, 58501, 58504, and 58512. Closure is made from white urea and has a foam backed F-217 PTFE liner that resists attack from virtually all chemicals at room temperature and provides resilience for a tight seal. Top is suitable for marking. Suitable for long term sample storage. Closures are packed 100 pieces per plastic bag, 5 bags per case.

Kimble Article No.	GPI Thread Finish	Approx. Case Qty.	Case Price
74526-22400	22-400	500	266.36



74526

Blue Nylon, Open Top



410119

Glass-filled nylon cap with modified GPI thread finish to accommodate us with an o-ring seal. The 410119-1307 and 410119-2015 caps are used for the MICROFLEX® microscale chemistry kits. Temperature limit is 150 ºC.

Kontes Article No.	Modified GPI Thread	Approx. Hole Dia. (mm)	Case Qty.	Case Price
410119-1305	13-415	5.5	12	15.87
410119-1307	13-425	7	12	16.01
410119-1508	15-415	8.5	12	16.14
410119-2011	20-415	11.5	12	20.78
410119-2015	20-400	15	12	16.93
410119-2214	22-415	14.5	12	16.53
410119-2817	28-415	17.5	6	32.80
410119-3021	30-415	21	6	69.63
410119-3324	33-415	24	2	35.83
410119-3527	35-415	27	2	35.32

Phenolic, Black, Unlined



73804

Black, phenolic, open top, screw thread closures have excellent chemical resistance and are autoclavable.

Kimble Article No.	GPI Thread Finish	Hole I.D. (mm)	Case Qty.	Case Price
73804-15425	15-425	8.7	144	16.62
73804-18400	18-400	12	144	20.73
73804-20400	20-400	12	144	20.54
73804-24400	24-400	14	144	24.60

Polypropylene, GL 45, Blue with PTFE Membrane



14395M

This cap is designed with a 0.2 micron PTFE membrane (sealed in) as a barrier to allow pressure equilibrium during low temperature (140° C max) autoclaving.

Kimble Article No.	Description	Max. Temperature	Case Qty.	Case Price
14395M-45	Membrane Cap, Blue	140 °C	10	43.50

Septa, Flat Disc, PTFE-Faced Red Rubber



73816 Series

Low cost, good resealability. PTFE facing provides a barrier for product contact.

Kimble Article No.	Fits GPI Thread Size	Thickness, Inches PTFE	Thickness, Inches Red Rubber	Case Qty.	Case Price
73816-15	15-425	0.002	0.060	144	45.18
73816-18	18-400	0.002	0.060	144	50.85
73816-20	20-400	0.002	0.060	144	52.57
73816-24	24-400	0.002	0.060	144	59.72

Septa, Flat Disc, PTFE-Faced Silicone Rubber



73818 Series

Resists coring and is autoclavable. Recommended for use in all autosamplers using screw thread vials. Great for sample storage.

Kimble Article No.	Fits GPI Thread Size	Thickness, Inches PTFE	Thickness, Inches Silicone Rubber	Case Qty.	Case Price
73818-15	15-425	0.005	0.060	144	45.65
73818-18	18-400	0.005	0.060	144	59.48
73818X-18	18-400	0.005	0.090	144	177.44
73818-20	20-400	0.005	0.060	144	79.56
73818-24	24-400	0.005	0.060	144	97.23
73818X-24	24-400	0.010	0.090	144	170.18
73818A-24*	24-400	0.005	0.120	144	90.01

* 73818A-24 is white PTFE/Tan Silicone and is recommended for use with the 40 mL EPA vial.

Snap Cap, Yellow Polyethylene

Replacement part for 28000, 28005, 28007, 28008, 28010, 28010K and 28012 volumetric flasks. Provides an efficient closure at minimal cost.

Caution: These caps may not be usable with items lacking necks specially tooled to proper diameters and contours.



28150R

Kimble Article No.	Cap No.	Fits Flask Size (mL)	Case Qty.	Case Price
28150R-2	2	10, 25	6	12.48
28150R-3	3	50	6	11.22
28150R-4	4	100	6	12.48
28150R-5	5	200, 250, 500	6	16.32
28150R-6	6	1000	6	20.52

Snap Cap, White Polyethylene



73837

Kimble Article No.	Cap No.	Case Qty.	Case Price
73837-1	1	500	22.39
73837-2	2	500	22.39

KIM-KAP®, Polypropylene Closures, Autoclavable, Color-Coded - Natural, Red, Green, Yellow and Blue



73660

Kimble Article No.	Size (For tubes of OD, mm)	Color	Shelf -Pack Qty.	Case Qty.	Case Price
73660-13	13	Natural	100	1000	57.25
73660-16	16	Natural	100	1000	61.05
73660-18	18	Natural	100	1000	68.59
73660-20	20	Natural	100	500	58.63
73660-25	25	Natural	100	500	77.56
73660-38	38	Natural	50	250	81.19
73662-13	13	Red	100	1000	66.51
73662-16	16	Red	100	1000	69.00
73662-18	18	Red	100	1000	79.55
73662-20	20	Red	100	500	67.52
73662-25	25	Red	100	500	86.02
73663-13	13	Green	100	1000	66.51
73663-16	16	Green	100	1000	69.00
73663-18	18	Green	100	1000	79.55
73663-20	20	Green	100	500	67.52
73663-25	25	Green	100	500	86.02
73664-13	13	Yellow	100	1000	66.51
73664-16	16	Yellow	100	1000	69.00
73664-18	18	Yellow	100	1000	79.55
73664-20	20	Yellow	100	500	67.52
73664-25	25	Yellow	100	500	86.02
73665-13	13	Blue	100	1000	66.51
73665-16	16	Blue	100	1000	69.00
73665-18	18	Blue	100	1000	79.55
73665-20	20	Blue	100	500	67.52
73665-25	25	Blue	100	500	86.02

Plug Style, White Polyethylene



73835

Kimble Article No.	Accommodates Vials	Shelf Pack Qty.	Case Qty.	Case Price
73835-1	60831D-830 60831D-843 60835D-843	500	2000	108.22
73835-2	60831D-1231	500	2000	120.76
73835-3	60831D-1544 60835D-1544	500	2000	129.16



882910

CYTOSTIR® Stirred Bioreactor for Microcarrier Cell Culture

The CYTOSTIR line of double sidearm stirred bioreactors for microcarrier cell culture has been completely redesigned to improve performance and enhance interchangeability. CYTOSTIR bioreactors are available in nine sizes ranging from 100 mL to 36 liters. The borosilicate glass flasks have two large sidearms with screw cap closures that allow easy sampling. The dome in the center of the flask base prevents microcarriers from accumulating directly under the stirring blades. The large, height adjustable PTFE stirring blades are designed to provide maximum stirring efficiency to keep microcarriers in suspension at the slow stirring speeds required for tissue culture. During stirring, cultures contact only borosilicate glass and PTFE. All one liter and larger size flasks have anti-drip pour lips and polypropylene caps with sealing rings. All CYTOSTIR bioreactors and components are completely steam autoclavable.

Complete CYTOSTIR Bioreactor

Kontes Article No.	Volume (mL)	Approx. Dia. x Height (mm)	Cap Size, Top (mm)	Cap Size Side Arm (mm)	Case Qty.	Case Price
882910-0100	100	72 x 120	70	25	1	200.20
882910-0250	250	83 x 155	70	32	1	214.21
882910-0500	500	110 x 190	70	32	1	252.14
882910-1000	1000	130 x 215	100	45	1	299.58
882910-3000	3000	181 x 305	100	45	1	407.84
882910-6000	6000	203 x 392	100	45	1	526.50
882910-8000	8000	259 x 420	100	45	1	640.51
882910-1500	15000	294 x 451	100	45	1	788.12
882910-3600	36000	400 x 570	100	45	1	1,141.97

Replacement CYTOSTIR-Flask Only

Kontes Article No.	Volume (mL)	Cap Size, Top (mm)	Cap Size Side Arm (mm)	Case Qty.	Case Price
882911-0100	100	70	18	1	98.62
882911-0250	250	70	24	1	119.00
882911-0500	500	70	38	1	191.31
882911-1000	1000	100	45	1	207.62
882911-3000	3000	100	45	1	262.50
882911-6000	6000	100	45	1	315.89
882911-8000	8000	100	45	1	453.83
882911-1500	15000	100	45	1	565.05
882911-3600	36000	100	45	1	800.85

Replacement Stirrer Assembly (Complete) includes: center cap assembly, stirrer rod and paddle

Kontes Article No.	Volume (mL)	Cap Size, Top (mm)	Cap Size Side Arm (mm)	Case Qty.	Case Price
882912-0100	100	70	18	1	113.45
882912-0100	250	70	24	1	113.45
882912-0500	500	70	38	1	124.56
882912-1000	1000	100	45	1	166.11
882912-3000	3000	100	45	1	169.07
882912-6000	6000	100	45	1	237.31
882912-6000	8000	100	45	1	237.31
882912-1500	15000	100	45	1	252.14
882912-1500	36000	100	45	1	252.14

Component Parts for 882910-Series CYTOSTIRS

Glass Shafts - all CYTOSTIR replacement shafts are constructed entirely of Type I, Class A borosilicate glass.

Kontes Article No.	Size (mL)	Case Qty.	Case Price
882914-0100	100 - 250	1	12.47
882914-0500	500 - 1000	1	12.47
882914-3000	3000	1	12.92
882914-6000	6000 - 8000	1	12.92
882914-1500	15000 - 36000	1	12.92

Center Cap Assemblies - consists of center polypropylene cap, PTFE liner, and shaft adapter with compression fitting and o-ring.

Kontes Article No.	Size (mL)	Case Qty.	Case Price
882916-0100	100 - 500	1	45.38
882916-1000	1000	1	65.71
882916-3000	3000 - 8000	1	65.71
882916-1500	15000 - 36000	1	65.71

Specifications

Flasks: borosilicate glass

Stirrer Components:
(paddle, shaft, magnet coating and center cap fitting) PTFE

(stirring rod) borosilicate glass
(o-ring) food-grade FKM

Caps:
(center, all sizes) PTFE-lined polypropylene

(sidearms - 100, 250 & 500 mL) red PBT with PTFE-faced liner

(sidearms - 1, 3, 6, 8, 15 & 36 liter) blue polypropylene with sealing ring

Culture Dish, Petri, Set

KIMAX dishes have reinforced beaded edges to resist mechanical breakage and to help in centering the bottom inside the cover. Dishes remain clear after repeated use in wet or dry sterilization cycles. Covers have a fused-on bright red ceramic enamel marking spot and inscription, including “Cover”; Bottoms have a white ceramic enamel inscription, including “Bottom”. The combination of different colors and wording permits quick and easy identification of the parts when sorting, selecting and assembling pairs. Bottom also has a vertical arrow on the side to precisely locate serial dilution starting points. Shelf-packs contain twelve covers and twelve bottoms, which are packed in separate boxes. Designed from Federal Specification NNN-D-1478.



23060

Kimble Article No.	Approx. Dia. (mm)	Approx. Height (mm)	Shelf-Pack Qty.	Case Set Qty.	Case Price
23060-6015	60	15	12	72	416.16
23060-10010	100	10	12	72	389.52
23060-10015	100	15	12	72	393.84
23060-10020	100	20	12	72	329.76
23060-15020	150	20	12	24	304.08



23062

Replacement Parts

23062-6015	Dish Cover Only, 60 mm, Qty. 12	38.16
23062-10010	Dish Cover Only, 100 mm, Qty. 12	34.20
23062-10015	Dish Cover Only, 100 mm, Qty. 12	31.92
23062-10020	Dish Cover Only, 100 mm, Qty. 12	38.64
23062-15020	Dish Cover Only, 150 mm, Qty. 12	96.24
23064-6015	Dish Bottom Only, 60 mm, Qty. 12	37.56
23064-10010	Dish Bottom Only,100 mm, Qty. 12	35.88
23064-10015	Dish Bottom Only,100 mm, Qty. 12	31.92
23064-10020	Dish Bottom Only,100 mm, Qty. 12	40.56
23064-15020	Dish Bottom Only,150 mm, Qty. 12	96.24



23064

Culture Dish, with Lid

Flat bottom with ground cover. The top of the dish and underside of the cover are ground to effect a liquid seal with a light coating of a silicone lubricant. Cells grow uniformly on the flat base which can be observed with an inverted microscope.



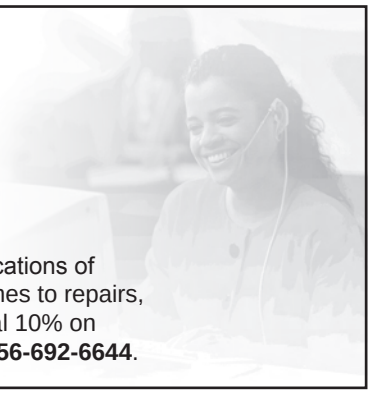
881500

Kontes Article No.	Approx. Dish I.D. x Depth (mm)	Approx. Overall Height x Width (mm)	Case Qty.	Case Price
881500-0021	31 x 12	16 x 41	1	22.60



- **Custom Fabrications**
- **Quality Repairs**
- **Modifications of All Kinds**
- **No Order Too Small**
- **Quick Turnaround**

KONTES
custom glass shop
*call toll-free **800-682-6644***
customglass@kimble-chase.com



Contact the **Kontes Custom Glass Shop** at KIMBLE CHASE for modifications of standard products or fabrication of your unique designs. And when it comes to repairs, we can save you up to 75% of the cost of a new item. Save an additional 10% on repairs of Kontes or Kimble Brand products. Fax your requirements to **856-692-6644**.



25615

Culture, Long Neck, with Capacity Scale

KIMAX flask has a thick-walled tubing neck with a plain fire polished finish, sealed to an Erlenmeyer-shaped body. Neck is long enough to accept a metal or plastic cap, or a cotton plug may be used if desired. All flasks have durable white ceramic enamel scales to indicate approximate volumes at various levels. Designed from ASTM Specification E1404, Type IV, Class 1 requirements.

Kimble Article No.	Cap. (mL)	Graduated Interval (mL)	Subdiv. (mL)	Approx. Widest Dia. (mm)	Approx. Height (mm)	Cap & O.D. of Neck (mm)	Shelf-Pack Qty.	Case Qty.	Case Price
25615-125	125	50 to 125	25	66	125	25	6	24	239.76
25615-250	250	50 to 225	25	82	142	38	6	24	262.80
25615-500	500	100 to 500	50	102	183	38	6	24	362.64
25615-1000	1000	250 to 1000	50	128	230	38	6	24	607.68
25615-2000	2000	600 to 2000	100	161	288	38	6	12	546.36



25630

Baffled Shake Flask

Designed for use with rotary and reciprocating shakers where baffle indents provide greater turbulance to improve oxygen transfer rates or aeration. Flask has a neck with a plain fire-polished finish and suitable for a plastic cap.

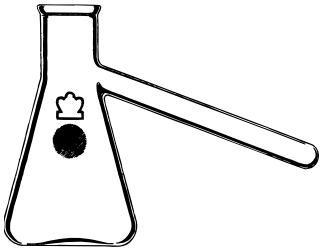
Kimble Article No.	Capacity (mL)	Base Diam. (mm)	Approx. Height (mm)	Approx. Neck O.D. (mm)	Case Qty.	Case Price
25630-125	125	66	125	25	6	97.26
25630-250	250	82	142	38	6	112.38
25630-500	500	102	183	38	6	122.16
25630-1000	1000	128	230	38	6	205.20
25630-2000	2000	161	288	38	6	323.28



73660

Closures for Culture Flasks, Polypropylene, Autoclavable, Natural and Colors, KIM-KAP®

— Natural —					— Colors —				
Kimble Article Number	Natural Case Price	Shelf Pack Qty.	Case Qty.	O.D. (mm)	Kimble Article Numbers Red	Green	Yellow	Blue	Colors Case Price
73660-25	77.56	100	500	25	73662-25	73663-25	73664-25	73665-25	86.02
73660-38	81.19	50	250	38	—	—	—	—	—



881750

Nephelo Culture Flask

Culture flask with a sidearm for insertion into a nephelometer. Bacterial or protein cell production can be monitored in situ.

Kontes Article No.	Flask Size (mL)	Approx. Sidearm O.D. x Length (mm)	Approx. Overall Height x Width (mm)	Case Qty.	Case Price
881750-0214	125	14 x 130	116 x 170	1	30.25
881750-0219	125	19 x 130	116 x 170	1	30.25
881750-0414	250	14 x 130	132 x 180	1	33.22

Cell Disruption Chamber, Mini-Bomb

Cell Disruption Without Heat Build-up From Friction

The KONTES Brand mini-bomb cell disruption chamber processes samples ranging in size from 1 to 15 mL. Cells are disrupted with this apparatus through the sudden depressurization of cell suspensions. First, the mini-bomb is loaded with 1 to 15 mL of a cell suspension. Next, it is pressurized with air, nitrogen or carbon dioxide (see Figure 1). After the cells have equilibrated, the pressure is released and the cells rupture. The result is a uniform homogenate of whole cells and sub-cellular components.

To avoid aerosols generated in this process, the gas escaping from the mini-bomb during decompression should be directed into a gas washing bottle as illustrated in Figure 2. The gas washing bottle should contain an acidic solution.

This method of cell disruption eliminates the heat build-up associated with mechanical and ultrasonic cell disruption. The cells are actually cooled by the expanding gas. Pressure and equilibration time can be varied to control the extent of cellular disruption. For example, a short treatment at moderate pressure will rupture the outer cell membranes leaving the nuclei intact. After separating these fractions a second treatment can be used to rupture the nuclei. Figure 3 shows the effect of pressure and number of pressurization cycles on various cell types.

The mini-bomb is fabricated from 304 stainless steel.



881455

Kontes Article No.	Description	Case Qty.	Case Price
881455-0000	Mini-bomb Cell Disruption Chamber, Supplied Complete with Fitting to Accept 881457 Connecting Tubing	1	2,261.69
Replacement Part			
758292-0013	O-Ring, EP, Size 013, Pkg./10 (1 Supplied)	10	37.69
758292-0017	O-Ring, EP, Size 017, Pkg./10 (1 Supplied)	10	40.23
881455-0488	Hose Connection with Knob	1	393.02
881455-0489	Carbide Ball 3/16"	1	17.05
881455-0491	Filter Retainer	1	44.48
881455-0492	Filter Adapter	1	177.98
881455-0493	Inlet Adapter	1	266.95
881455-0495	Swagelok Fitting	1	40.05
881455-0496	Swagelok SS-400	1	81.57
881455-0499	Cap Only	1	407.84
881455-0501	Body Only	1	1,357.01
881455-0505	PTFE Filter, Pkg./10 (1 Supplied)	10	103.47
881455-0506	Polyethylene Filter Pkg./10 (1 Supplied)	10	18.98
Accessory Part			
881457-0000	SS Connecting Tubing, 3 ft. (91 cm), with Swagelok® fittings	1	119.40

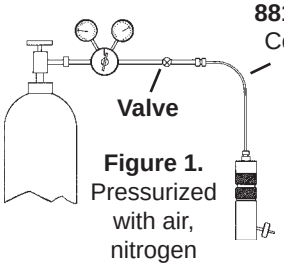


Figure 1. Pressurized with air, nitrogen or carbon dioxide.

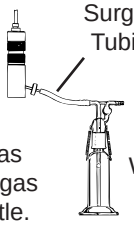


Figure 2. Escaping gas directed into gas washing bottle.

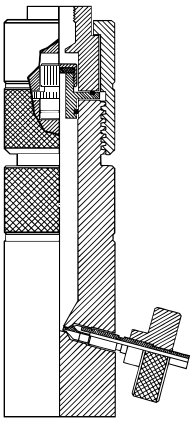


Figure 3.

Cell Type	Cell Suspension	No. Pounds Pressure	Cell No. Used/mL	No. Times Through	No. Cells Remaining/mL	No. Nuclei Remaining/mL	% Totally Broken
Animal:	KB	500	3.4×10^6	1	2.8×10^5	N.D.	93
Cell Culture	KB	500		2	2.0×10^3	N.D.	99.95
	KB	250	3.3×10^6	1	5.5×10^5	4.62×10^5	69.4
	KB	250		2	5.4×10^4	2.2×10^4	97.7
	KB	250		3	0	0	100
	KB	0	1.8×10^6	0	1.08×10^6	7.6×10^5	—
	KB	250		1	2.4×10^5	6.4×10^5	52.2
	KB	250		2	3.4×10^4	5.0×10^4	95.4
	KB	250		3	1.6×10^4	4.6×10^4	96.6
	Rat Liver	500	9.2×10^5	1	8.5×10^5	N.D.	7.8
		500		2	0		100
Blood:	Chicken Red Blood Cells	1000	5.6×10^9	1	9.6×10^8	N.D.	83
Bacteria:	Escherichia Coli	1500	1.3×10^{10}	1	1.2×10^{10}	N.D.	8
		1500		2	6.6×10^9	N.D.	50
	Escherichia Coli	1500	6.5×10^8	1	3.6×10^8	N.D.	45
		1500		2	3.3×10^8	N.D.	50



881300-0100

100 Watt Ultrasonic Homogenizer, with 1/8" Microprobe

- **Thumb Activated**
- **Digital LCD Display**
- **100 Watt Generator**
- **Load Monitoring**
- **Automatic Tuning**
- **Compact & Portable**
- **Economical Price**

The thumb activated Microson Sonicator incorporates revolutionary advances in circuitry design, power delivery and load monitoring in a compact, portable, economical ultrasonic homogenizer.

Equipped with a digital wattmeter and LCD display, the Microson accurately monitors the power delivered to the probe tip for greater intensity when processing difficult cells or other demanding applications. Automatic tuning and load monitoring improve efficiencies by maintaining the probe's frequency and amplitude under varying load conditions, such as changes in temperature, viscosity and sample volume.

The Microson has proven to be a powerful and versatile tool for processing small sample volumes from 200 µL to 100 mL. It is used in many analytical, biological and quality control labs.

The Microson's compact, portable design makes it ideal for use in mobile labs. Simple controls and lightweight, hand-held probes provide easy operation. An optional footswitch allows manual pulsing and hands-free operation.

UL listed and CE certified.

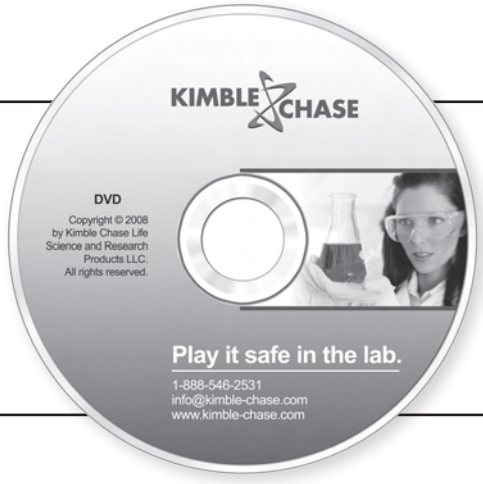
Dimensions: 13"L x 7.5"W x 7"H

Kontes Article No.	Description	Case Qty.	Case Price
881300-0100	100 Watt Ultrasonic Homogenizer with 1/8" Microprobe (Article No. K881350-0018) and Thumb-Activated Switch	1	3,089.26

Accessories

881365-0010	Cooling Cell, Jacketed, 0.5-10 mL	1	151.27
881338-0000	Jack Stand, 5.5" x 5.5", Jacks up to 12" high	1	333.69

See additional products listed under *ULTRASONICATOR*.

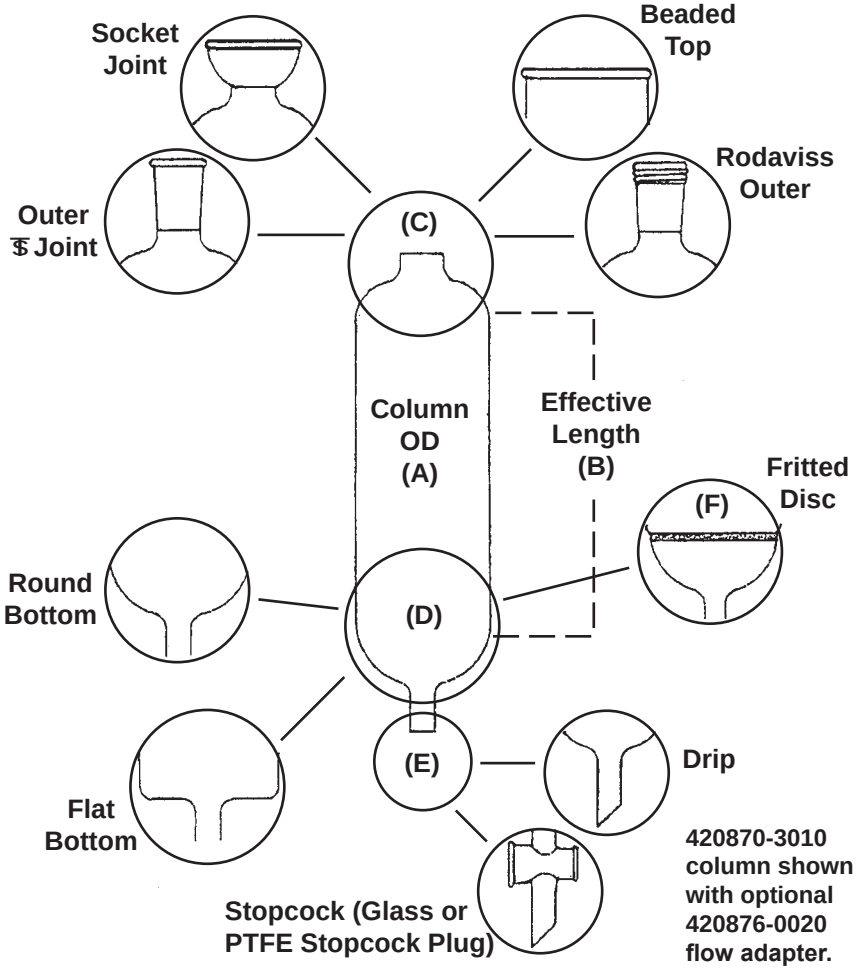


Safety Program - *Play it safe in the lab.*

Our Safety Program discusses the ten basic safety rules of handling glassware as well as the technical properties and physics of glass. Available as a DVD.

Kimble Article No.	Format	Case Qty.	Case Price
99991D-99	DVD	1	23.99

See more safety products in the *SAFETYWARE* section.



KONTES
custom glass shop
*call toll-free **800-682-6644***
customglass@kimble-chase.com

Contact the **Kontes Custom Glass Shop** at KIMBLE CHASE for modifications of standard products or fabrication of your unique designs. And when it comes to repairs, we can save you up to 75% of the cost of a new item. Save an additional 10% on repairs of Kontes or Kimble Brand products. Fax your requirements to **856-692-6644**.

- **Custom Fabrications**
- **Quality Repairs**
- **Modifications of All Kinds**
- **No Order Too Small**
- **Quick Turnaround**

Custom Column Specifications

The Kontes Custom Glass Shop has the ability to custom fabricate chromatography columns to your specifications. Columns are available with any standard taper, spherical or Rodaviss® joints. Consider the following issues when designing your columns.

A – Column OD: _____

Special columns will be constructed using medium wall tubing unless otherwise specified.

B – Column Effective Length: _____

Effective length is the length of the straight sides of the column prior to rounding off the tubing for sealing the top joint or the lower stopcock. On a fritted column, the effective length is measured to the fritted disk.

C – Top Joint Style and Size: _____

D– Lower Column Configuration: _____

Please specify round or flat bottom.

E – Stopcock Type and Size: _____

Please specify stopcock bore. PTFE, Glass or plain drip tip.

F – Fritted Disc Required: _____

Special columns will be constructed using a coarse porosity (40-60 micron) fritted disc unless otherwise specified.

G – Plastic Coated Column: _____

H – Volume: _____

I – Quantity: _____

CHROMAFLEX® Columns



420870-3010 shown with optional 420876-0020 flow adapter.

CHROMAFLEX Chromatography Columns have a unique design feature: PTFE shielded o-rings. Each end fitting has a thin PTFE layer that is curled over the o-ring to form a solvent resistant, leak free seal. CHROMAFLEX Columns can be used with all aqueous buffers without modification and with organic solvents when the optional PTFE bed supports are installed in the end fittings and flow adapters. CHROMAFLEX Columns are available in both standard and water jacketed versions.

Standard CHROMAFLEX Columns

Standard CHROMAFLEX Columns are available in three IDs (1.0, 2.5 and 4.8 cm) in five standard lengths (15, 30, 60, 100 and 120 cm). Each column is supplied with two PTFE end fittings with 20 µm porosity polyethylene bed supports, 5 feet PTFE tubing (1/16" OD tubing with 1.0 cm, 1/8" OD tubing with 2.5 & 4.8 cm), 2 flangeless tubing nuts and 2 flangeless ferrules.

Jacketed CHROMAFLEX Columns

Jacketed CHROMAFLEX Columns are provided with an acrylic water jacket to provide thermal control of temperature sensitive chromatographic separations. The acrylic jacket also acts as a safety shield. Jacketed columns are available in all of the standard CHROMAFLEX Column sizes and supplied with the same tubing, nuts and ferrules.

Flow Adapters

CHROMAFLEX Flow Adapters allow easy adjustment of the column bed volume. They are ideal for concentration and pH gradients, reverse flow separations, and gravity flow separations that require a high level of resolution and reproducibility. Flow adapters are available for all three standard ID columns.

Packing Reservoirs

The CHROMAFLEX Glass Reservoirs are ideal for packing gel slurries into columns and as buffer reservoirs for simple gravity flow chromatography. Each reservoir has been designed for easy mounting on all CHROMAFLEX Columns. The reservoir capacities are matched by column ID to take the amount of slurry required to pack the longest standard column. The reservoir end fitting has 1/4-28 threads for simple flangeless connection to a pump.

Flangeless 1/4-28 Fittings

All tubing connections to CHROMAFLEX Columns can be made with easy-to-use 1/4-28 flangeless fittings and either 1/16" OD, 1/8" OD or 1.8 mm OD tubing. Our complete line of fittings and adapters allow simple connection to any chromatography system.

Custom Length Columns

Certain applications may require a column length not found in our standard product offering. Please contact Kontes Customer Service for pricing and delivery details for custom length CHROMAFLEX Columns.

Specifications

Materials

Column Barrels:	Type I, Class A Borosilicate Glass
End Fitting:	Polytetrafluoroethylene (PTFE)
Bed Support:	High Density Polyethylene (HDPE)
Water/Safety Jacket:	Acrylic (jacketed columns only)
Jacket Sealing Rings:	Polypropylene (jacketed columns only)
Bed Support Porosity:	20 micron nominal (for standard bed support)
Maximum Pressure*:	1.0 cm ID Columns - 100 psi (6.9 bar) 2.5 cm ID Columns 75 psi (5.2 bar) 4.8 cm ID Columns - 50 psi (3.4 bar)
Temperature Range:	0 to 50 °C
Tubing Connections:	1/4-28 flangeless fittings
Sterilization:	Ethylene Oxide, 2N NaOH or 100% Ethanol (autoclaving is not recommended)

Column, Threaded, Standard, CHROMAFLEX®

Columns are supplied complete with glass barrel and 2 end fittings with 20 µm porosity HDPE bed supports. Each column is also supplied with 5 feet (1.5 m) of FEP PTFE tubing (1/16" OD with 1.0 cm; 1/8" OD with 2.5 and 4.8 cm), 2 flangeless tubing nuts and 2 flangeless ferrules.

Kontes Article No.	ID (cm)	Length (cm)	Volume (mL)	Pressure* (psi/bar)	Case Qty.	Case Price
420830-1500	1.0	15	12	100/6.9	1	175.99
420830-3000	1.0	30	24	100/6.9	1	182.02
420830-6000	1.0	60	47	100/6.9	1	197.04
420830-1000	1.0	100	79	100/6.9	1	228.65
420830-1200	1.0	120	95	100/6.9	1	248.20
420830-1510	2.5	15	74	75/5.2	1	206.09
420830-3010	2.5	30	147	75/5.2	1	218.11
420830-6010	2.5	60	295	75/5.2	1	236.17
420830-1010	2.5	100	491	75/5.2	1	285.82
420830-1210	2.5	120	589	75/5.2	1	315.90
420830-1520	4.8	15	271	50/3.4	1	260.26
420830-3020	4.8	30	543	50/3.4	1	276.78
420830-6020	4.8	60	1086	50/3.4	1	303.86
420830-1020	4.8	100	1810	50/3.4	1	368.54
420830-1220	4.8	120	2172	50/3.4	1	401.65

Replacement Parts

420831-1500	Glass Barrel Only, 1.0 x 15 cm	1	66.20
420831-3000	Glass Barrel Only, 1.0 x 30 cm	1	71.91
420831-6000	Glass Barrel Only, 1.0 x 60 cm	1	86.89
420831-1000	Glass Barrel Only, 1.0 x 100 cm	1	119.23
420831-1200	Glass Barrel Only, 1.0 x 120 cm	1	136.52
420831-1510	Glass Barrel Only, 2.5 x 15 cm	1	86.12
420831-3010	Glass Barrel Only, 2.5 x 30 cm	1	97.40
420831-6010	Glass Barrel Only, 2.5 x 60 cm	1	118.84
420831-1010	Glass Barrel Only, 2.5 x 100 cm	1	170.00
420831-1210	Glass Barrel Only, 2.5 x 120 cm	1	194.05
420831-1520	Glass Barrel Only, 4.8 x 15 cm	1	122.98
420831-3020	Glass Barrel Only, 4.8 x 30 cm	1	136.52
420831-6020	Glass Barrel Only, 4.8 x 60 cm	1	166.97
420831-1020	Glass Barrel Only, 4.8 x 100 cm	1	230.14
420831-1220	Glass Barrel Only, 4.8 x 120 cm	1	264.74
420832-2100	1.0 cm End Fitting w/ Bed Support	1	38.38
420832-2110	2.5 cm End Fitting w/ Bed Support	1	44.49
420832-2120	4.8 cm End Fitting w/ Bed Support	1	49.48
420811-2010	Bed Support, HDPE, 1.0 cm, 20 µm, 10/pkg.	10	44.49
420811-2020	Bed Support, HDPE, 2.5 cm, 20 µm, 10/pkg.	10	48.74
420811-2040	Bed Support, HDPE, 4.8 cm, 20 µm, 10/pkg.	10	53.89
420833-0000	Screw Cap, 1.0 cm	1	9.10
420833-0010	Screw Cap, 2.5 cm	1	9.93
420833-0020	Screw Cap, 4.8 cm	1	16.35

Accessories

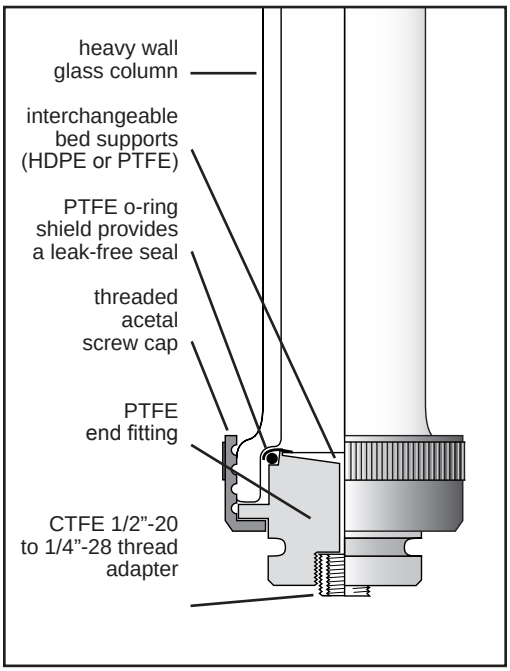
420809-0510	Bed Support, PTFE, 1.0 cm, 5 µm, 1/pkg.	1	21.18
420809-0520	Bed Support, PTFE, 2.5 cm, 5 µm, 1/pkg.	1	28.56
420809-0540	Bed Support, PTFE, 4.8 cm, 5 µm, 1/pkg.	1	57.29
420809-1010	Bed Support, PTFE, 1.0 cm, 10 µm, 1/pkg.	1	21.18
420809-1020	Bed Support, PTFE, 2.5 cm, 10 µm, 1/pkg.	1	28.56
420809-1040	Bed Support, PTFE, 4.8 cm, 10 µm, 1/pkg.	1	57.29
420809-2010	Bed Support, PTFE, 1.0 cm, 20 µm, 1/pkg.	1	21.18
420809-2020	Bed Support, PTFE, 2.5 cm, 20 µm, 1/pkg.	1	28.56
420809-2040	Bed Support, PTFE, 4.8 cm, 20 µm, 1/pkg.	1	57.29

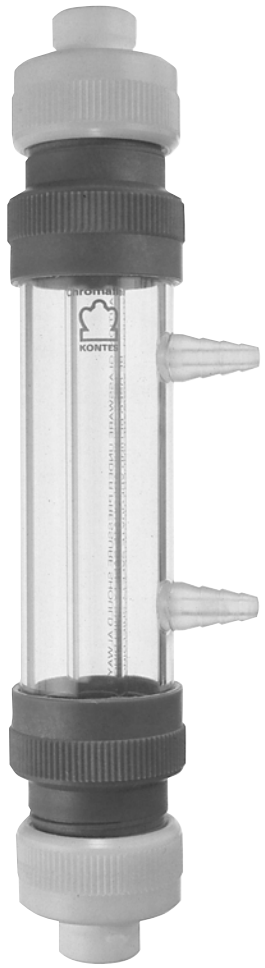
*** CAUTION**

Pressurized glassware should always be used with adequate safety shielding.



Chromaflex Standard Column Cross Section





420870

Column, Threaded, Jacketed, CHROMAFLEX®

Columns are supplied complete with glass barrel, water jacket and 2 end fittings with 20 µm porosity HDPE bed supports. Each column is also supplied with 5 feet (1.5 m) of FEP PTFE tubing (1/16" OD with 1.0 cm; 1/8" OD with 2.5 and 4.8 cm), 2 flangeless tubing nuts and 2 flangeless ferrules.

Kontes Article No.	ID (cm)	Length (cm)	Max. Volume (mL)	Max Pressure* (psi/bar)	Case Qty.	Case Price
420870-1500	1.0	15	12	100/6.9	1	239.18
420870-3000	1.0	30	24	100/6.9	1	267.76
420870-6000	1.0	60	47	100/6.9	1	303.86
420870-1000	1.0	100	79	100/6.9	1	355.01
420870-1200	1.0	120	95	100/6.9	1	395.62
420870-1510	2.5	15	74	75/5.2	1	332.44
420870-3010	2.5	30	147	75/5.2	1	371.56
420870-6010	2.5	60	295	75/5.2	1	418.18
420870-1010	2.5	100	491	75/5.2	1	494.90
420870-1210	2.5	120	589	75/5.2	1	550.55
420870-1520	4.8	15	271	50/3.4	1	583.64
420870-3020	4.8	30	543	50/3.4	1	630.28
420870-6020	4.8	60	1086	50/3.4	1	694.95
420870-1020	4.8	100	1810	50/3.4	1	789.73
420870-1220	4.8	120	2172	50/3.4	1	858.93

Replacement Parts

420831-1500	Glass Barrel Only, 1.0 x 15 cm	1	66.20
420831-3000	Glass Barrel Only, 1.0 x 30 cm	1	71.91
420831-6000	Glass Barrel Only, 1.0 x 60 cm	1	86.89
420831-1000	Glass Barrel Only, 1.0 x 100 cm	1	119.23
420831-1200	Glass Barrel Only, 1.0 x 120 cm	1	136.52
420831-1510	Glass Barrel Only, 2.5 x 15 cm	1	86.12
420831-3010	Glass Barrel Only, 2.5 x 30 cm	1	97.40
420831-6010	Glass Barrel Only, 2.5 x 60 cm	1	118.84
420831-1010	Glass Barrel Only, 2.5 x 100 cm	1	170.00
420831-1210	Glass Barrel Only, 2.5 x 120 cm	1	194.05
420831-1520	Glass Barrel Only, 4.8 x 15 cm	1	122.98
420831-3020	Glass Barrel Only, 4.8 x 30 cm	1	136.52
420831-6020	Glass Barrel Only, 4.8 x 60 cm	1	166.97
420831-1020	Glass Barrel Only, 4.8 x 100 cm	1	230.14
420831-1220	Glass Barrel Only, 4.8 x 120 cm	1	264.74
420832-4100	1.0 cm End Fitting w/ Bed Support	1	38.38
420832-4110	2.5 cm End Fitting w/ Bed Support	1	44.49
420832-4120	4.8 cm End Fitting w/ Bed Support	1	49.48
420811-2010	Bed Support, HDPE, 1.0 cm, 20 µm, 10/pkg.	10	44.49
420811-2020	Bed Support, HDPE, 2.5 cm, 20 µm, 10/pkg.	10	48.74
420811-2040	Bed Support, HDPE, 4.8 cm, 20 µm, 10/pkg.	10	53.89
420833-1000	Screw Cap, 1.0 cm	1	33.56
420833-1010	Screw Cap, 2.5 cm	1	39.87
420833-1020	Screw Cap, 4.8 cm	1	45.27

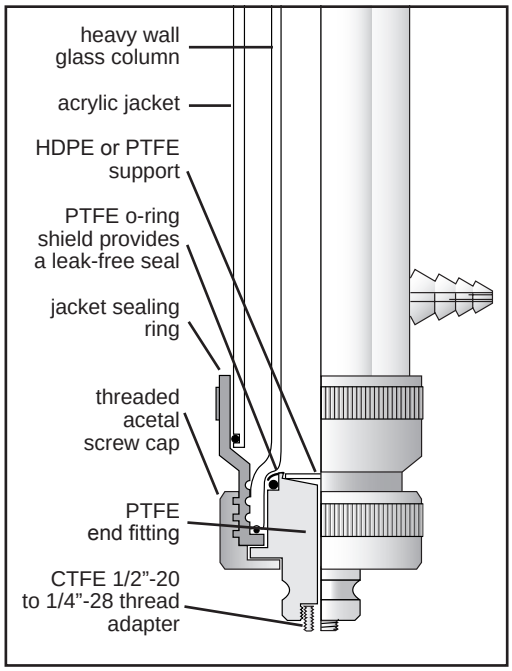
Accessories

420809-0510	Bed Support, PTFE, 1.0 cm, 5 µm, 1/pkg.	1	21.18
420809-0520	Bed Support, PTFE, 2.5 cm, 5 µm, 1/pkg.	1	28.56
420809-0540	Bed Support, PTFE, 4.8 cm, 5 µm, 1/pkg.	1	57.29
420809-1010	Bed Support, PTFE, 1.0 cm, 10 µm, 1/pkg.	1	21.18
420809-1020	Bed Support, PTFE, 2.5 cm, 10 µm, 1/pkg.	1	28.56
420809-1040	Bed Support, PTFE, 4.8 cm, 10 µm, 1/pkg.	1	57.29
420809-2010	Bed Support, PTFE, 1.0 cm, 20 µm, 1/pkg.	1	21.18
420809-2020	Bed Support, PTFE, 2.5 cm, 20 µm, 1/pkg.	1	28.56
420809-2040	Bed Support, PTFE, 4.8 cm, 20 µm, 1/pkg.	1	57.29

*** CAUTION**

Pressurized glassware should always be used with adequate safety shielding.

Chromaflex Column Cross Section



Flow Adapter, Threaded, Standard, CHROMAFLEX®

Flow Adapters improve chromatogram resolution by delivering the sample and buffer directly to the top of the gel bed. This protects the gel bed from disruption during sample loading and eliminates any dead volume above the gel bed. Flow adapters are recommended when using buffer gradients, during reverse flow applications, and for high resolution gravity flow separations. Each flow adapter is supplied with a 20 µm porosity HDPE bed support, TFE/propylene o-ring seal, stainless steel adjusting rod, PTFE body and 5 feet (1.5 meters) of FEP PTFE tubing. Use of aggressive organic solvents requires the accessory PTFE bed supports and FFKM o-rings listed below.

For Standard Columns

Kontes Article No.	Fits Column ID (cm)	Tubing OD	Case Qty.	Case Price
420836-0000	1.0	1/16"	1	153.43
420836-1620	2.5	1/16"	1	258.74
420836-0020	2.5	1/8"	1	258.74
420836-0040	4.8	1/8"	1	365.54

For Jacketed Columns

Kontes Article No.	Fits Column ID (cm)	Tubing OD	Case Qty.	Case Price
420876-0000	1.0	1/16"	1	153.43
420876-1620	2.5	1/16"	1	258.74
420876-0020	2.5	1/8"	1	258.74
420876-0040	4.8	1/8"	1	365.54

Flow Adapter Replacement Parts

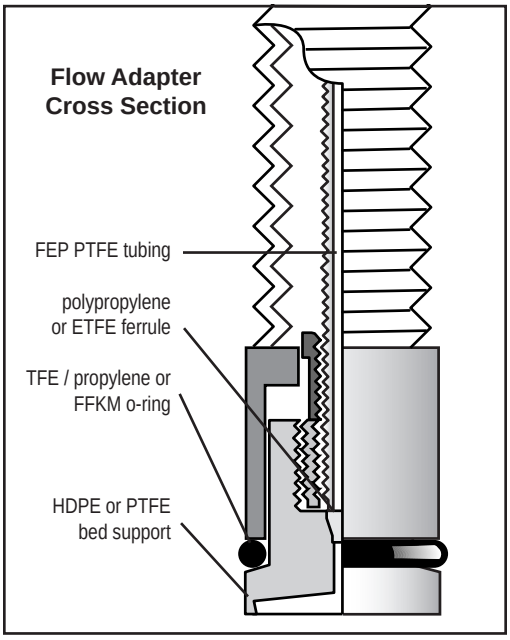
Kontes Article No.	Description	Fits Colums ID	Case Qty.	Case Price
420811-2011	Bed Support, HDPE, 20 µm porosity, Pkg./10	1.0 cm	10	44.49
420811-2020	Bed Support, HDPE, 20 µm porosity, Pkg./10	2.5 cm	10	48.74
420811-2040	Bed Support, HDPE, 20 µm porosity, Pkg./10	4.8 cm	10	53.89
758260-0010	O-ring, TFE/Propylene, Size 010	1.0 cm	1	12.17
758260-0116	O-ring, TFE/Propylene, Size 116	2.5 cm	1	14.30
758260-0222	O-ring, TFE/Propylene, Size 222	4.8 cm	1	19.42
420828-0116	Ferrule, Polypro, for 1/16" OD tubing	1.0/2.5	1	1.55
420828-0018	Ferrule, ETFE, for 1/8" OD tubing	2.5/4.8	1	1.55
420823-0116	Tubing, FEP PTFE, 1/16" OD x 10 feet	1.0/2.5	1	18.91
420823-0018	Tubing, FEP PTFE, 1/8" OD x 10 feet	2.5/4.8	1	29.28

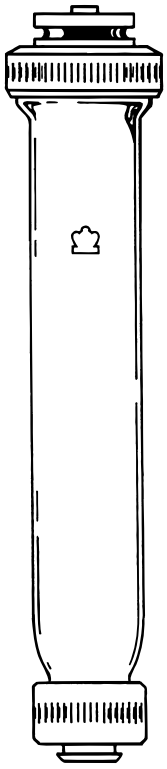
Flow Adapter Accessory Parts

Kontes Article No.	Description	Fits Colums ID	Case Qty.	Case Price
420809-0511	Bed Support, PTFE, 5 µm porosity	1.0 cm	1	21.18
420809-0520	Bed Support, PTFE, 5 µm porosity	2.5 cm	1	28.56
420809-0540	Bed Support, PTFE, 5 µm porosity	4.8 cm	1	57.29
420809-1011	Bed Support, PTFE, 10 µm porosity	1.0 cm	1	21.18
420809-1020	Bed Support, PTFE, 10 µm porosity	2.5 cm	1	28.56
420809-1040	Bed Support, PTFE, 10 µm porosity	4.8 cm	1	57.29
420809-2011	Bed Support, PTFE, 20 µm porosity	1.0 cm	1	21.18
420809-2020	Bed Support, PTFE, 20 µm porosity	2.5 cm	1	28.56
420809-2040	Bed Support, PTFE, 20 µm porosity	4.8 cm	1	57.29
758240-0010	O-ring, FFKM, Size 010	1.0 cm	1	42.74
758240-0116	O-ring, FFKM, Size 116	2.5 cm	1	75.07
758240-0222	O-ring, FFKM, Size 222	4.8 cm	1	195.76

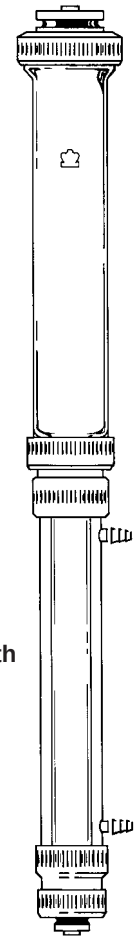


420870-3010 shown with optional 420876-0020 flow adapter.





420837



Jacketed Column with Packing Reservoir Attached

Packing Reservoir, Threaded, Standard, CHROMAFLEX®

The CHROMAFLEX Packing Reservoirs are ideal for packing gel slurries into columns. Each packing reservoir is designed for easy mounting on the CHROMAFLEX Columns. The capacities are matched to take the amount of gel slurry required to pack the longest column. The packing reservoirs may also be used as a buffer reservoir for gravity flow chromatography.

For Standard Columns Only

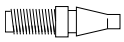
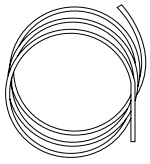
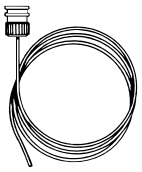
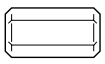
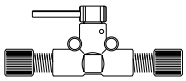
Kontes Article No.	Fits Colums ID (cm)	Nominal Volume	Case Qty.	Case Price
420837-0000	1.0	150 mL	1	151.94
420837-0020	2.5	500 mL	1	302.37
420837-0040	4.8	2000 mL	1	491.90

CHROMAFLEX Columns - Column bed height and approximate volume data.

Without Adapters			With One Adapter		With Two Adapters		Max. Pressure
ID (cm)	Length (cm)	Volume (mL)	Bed Height (cm)	Volume (mL)	Bed Height (cm)	Volume (mL)	(psi) (must use with safety jacket)
1	15	12	1-13	1-10	0-11	0-8	
1	30	24	16-28	12-22	2-26	2-20	
1	60	47	46-58	36-46	32-56	25-44	100
1	100	78	86-98	67-77	72-96	56-75	
1	120	94	106-118	83-93	92-116	72-91	
2.5	15	74	1-13	5-64	0-11	0-54	
2.5	30	147	16-28	78-137	2-26	10-128	
2.5	60	294	46-58	226-285	32-56	157-275	75
2.5	100	490	86-98	421-480	72-96	352-470	
2.5	120	589	106-118	520-579	92-116	451-569	
4.8	15	271	1-13	18-235	0-11	0-199	
4.8	30	543	16-28	289-506	2-26	36-470	
4.8	60	1085	46-58	832-1049	32-56	579-1013	50
4.8	100	1808	86-98	1555-1772	72-96	1302-1736	
4.8	120	2170	106-118	1917-2134	92-116	1664-2098	
10	15	1000					not rated (no safety jacket avail.)
10	30	2000					
10	60	5000					
10	100	7670					
10	120	9000					

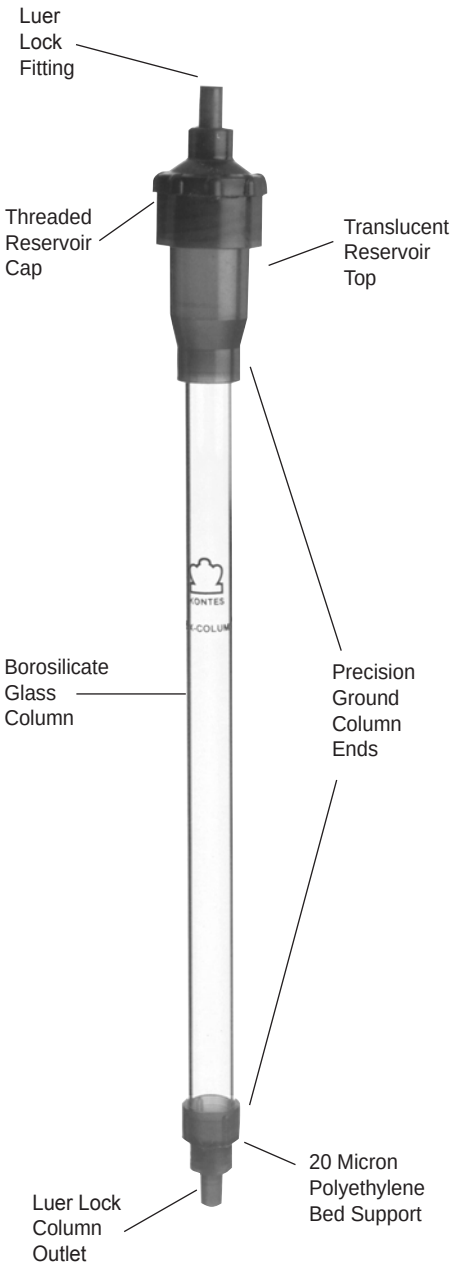
CHROMAFLEX FITTINGS

The following tubing nuts and ferrules are required to make the initial tubing connections to the end fittings of Chromaflex AQ and Chromaflex OR Columns.

Kontes Article No.		Description	Material	Case Qty.	Case Price
420826-0116		Tubing Nut, for 1/16" OD tubing	PEEK	1	21.18
420826-0018		Tubing Nut, for 1/8" OD tubing	PEEK	1	21.18
420827-0116		Ferrule, for 1/16" OD tubing	PEEK	1	8.38
420828-0116		Ferrule, for 1/16" OD tubing	Polypropylene	1	1.55
420827-0018		Ferrule, for 1/8" OD tubing	PEEK	1	8.38
420828-0018		Ferrule, for 1/8" OD tubing	Polypropylene	1	1.55
953918-2306		Adapter, M1/4-28 Thread to 1/16" Barb	ETFE	1	6.53
953918-2313		Adapter, M1/4-28 Thread to 1/8" Barb	ETFE	1	6.53
953918-2319		Adapter, M1/4-28 Thread to 3/16" Barb	ETFE	1	6.53
420821-0116		Flangeless Nut, 1/4-28 Thread, for 1/16" tubing	ETFE	1	3.56
420821-0018		Flangeless Nut, 1/4-28 Thread, for 1/8" and 1.8mm OD tubing	ETFE	1	3.56
420821-6116		Flangeless Nut, M6 Thread, for 1/16" tubing	Acetal	1	2.56
420821-0618		Flangeless Nut, M6 Thread, for 1/8" and 1.8mm OD tubing	Acetal	1	2.56
420822-0116		Flangeless Ferrule, for 1/16" OD tubing	ETFE	1	2.70
420822-2007		Flangeless Ferrule, for 1.8 mm OD tubing	ETFE	1	2.70
420822-0018		Flangeless Ferrule, for 1/8" OD tubing	ETFE	1	2.70
420823-0116		Tubing, 1/16" OD x 0.038" ID x 10 feet	FEP PTFE	1	18.91
420823-0018		Tubing, 1/8" OD x 0.062" ID x 10 feet	FEP PTFE	1	29.28
H90669-0005		Tubing, 1/16" OD x 5 feet, with integral F-Luer fitting, pkg./5	Tubing - PTFE Luer - CTFE	5	142.14
H88800-0000		Union, F1/4-28 to F1/4-28	CTFE	1	9.51
420818-0000		Union, F1/4-28 to F1/4-28	ETFE	1	7.25
420818-0600		Union, F1/4-28 to F-M6	ETFE	1	8.26
420818-0606		Union, F-M6 to F-M6	ETFE	1	12.36
953924-1300		Union, M1/4-28 to M1/4-28	CTFE	1	21.05
420817-2306		Valve, 1-way, 1/4-28 Threads, with 1/16" Flangeless Fittings	Valve - ETFE Fittings - ETFE	1	56.44
420817-2313		Valve, 1-way, 1/4-28 Threads, with 1/8" Flangeless Fittings	Valve - ETFE Fittings - ETFE	1	56.44
420817-3306		Valve, 1-way, 1/4-28 Threads, with 1/16" Flangeless Fittings	Valve - PEEK Fittings -PEEK/ ETFE	1	96.64
420817-3313		Valve, 1-way, 1/4-28 Threads, with 1/8" Flangless Fittings	Valve - PEEK Fittings -PEEK/ ETFE	1	96.64

See 953921, 420821, H90669, H88800, and 420817 for a complete listing of chromatography adapters, fittings, valves and tubing.

FLEX-COLUMN® Economy Columns



420400

FLEX-COLUMNS are economical, easy-to-use chromatography columns that are ideal for use with gel filtration, ion exchange, affinity and adsorption media. The columns are constructed of polypropylene reservoirs and column outlets permanently connected to a borosilicate glass barrel. The 20 µm porosity polyethylene bed supports are fixed in the column outlets. Luer lock inlets and outlets on the columns, along with a wide variety of adapters, valves and fittings provide simple and versatile tubing connections.

Standard Columns

Standard FLEX-COLUMNS are available in 30 different sizes with standard inside diameters of 0.7, 1.0, 1.5 and 2.5 cm and lengths ranging from 4 to 170 cm. All columns are fitted with translucent polypropylene reservoir tops, and bed supports that are permanently mounted in the polypropylene column outlet. Short columns are typically used for ion exchange chromatography, sample desalting and semidisposable applications, while the long columns are ideally suited for gel filtration and adsorption chromatography.

Jacketed Columns

Jacketed FLEX-COLUMNS are provided with an integral borosilicate glass water jacket to provide thermal control of temperature sensitive chromatographic separations. Jacketed columns are available with standard inside diameters of 0.7, 1.0 and 1.5 cm and lengths ranging from 15 to 50 cm.

Flow Adapters

FLEX-COLUMN Flow Adapters allow easy adjustment of the column bed volume. They are ideal for concentration and pH gradients, reverse flow separations, and gravity flow separations that require a high level of resolution and reproducibility. Flow adapters are available for 1.0, 1.5 and 2.5 cm ID columns.

Packing Reservoirs

The FLEX-COLUMN Glass Reservoirs are ideal for packing gel slurries into columns and as a buffer reservoir for simple gravity flow chromatography. The reservoirs can also be easily converted into a Mariotte constant pressure reservoir.

Luer Lock Fittings

The male luer lock fittings on all FLEX-COLUMNS along with our complete line of fittings, valves and adapters allow easy connection to any low pressure chromatography system.

Custom Length Columns

Certain applications may require a column length not found in our standard product offering. Please contact Customer Service for pricing and delivery details for custom length FLEX-COLUMNS. Call 888-546-2531.

Specifications

Materials:

Column Barrels:	Type I, Class A Borosilicate Glass
Cap, Reservoir & Column Outlet:	Polypropylene
Bed Support:	High Density Polyethylene (HDPE)
Bed Support Porosity:	20 micron nominal
Maximum Pressure:	1.0 bar (14.7 psi, 1.0 atm, 0.1 MPa)
Temperature Range:	0 to 50 °C
Tubing Connections:	Male Luer Locks
Sterilization:	2N NaOH or 100% Ethanol (Autoclaving is not recommended.)

Note: Polypropylene end fittings are NOT replaceable on FLEX-COLUMNS.

*** CAUTION**

Pressurized glassware should always be used with adequate safety shielding.

Column, Economy, FLEX-COLUMN®

Kontes Article No.	ID (cm)	Length (cm)	Cross Sectional Area (cm^3)	Max. Vol. (mL)	Case Qty.	Case Price
420400-0704	0.7	4	0.39	2	10	124.34
420401-0704	0.7	4	0.39	2	1	17.02
420400-0705	0.7	5	0.39	2	10	124.34
420401-0705	0.7	5	0.39	2	1	17.02
420400-0710	0.7	10	0.39	4	10	124.34
420401-0710	0.7	10	0.39	4	1	21.18
420400-0715	0.7	15	0.39	6	10	141.65
420401-0715	0.7	15	0.39	6	1	21.18
420400-0720	0.7	20	0.39	8	10	141.65
420401-0720	0.7	20	0.39	8	1	21.18
420400-0730	0.7	30	0.39	12	10	160.03
420401-0730	0.7	30	0.39	12	1	25.52
420400-0750	0.7	50	0.39	20	10	194.61
420401-0750	0.7	50	0.39	20	1	25.52
420400-1005	1.0	5	0.79	4	10	124.34
420401-1005	1.0	5	0.79	4	1	17.02
420400-1010	1.0	10	0.79	8	10	124.34
420401-1010	1.0	10	0.79	8	1	21.18
420400-1015	1.0	15	0.79	12	10	132.99
420401-1015	1.0	15	0.79	12	1	21.18
420400-1020	1.0	20	0.79	16	10	141.65
420401-1020	1.0	20	0.79	16	1	21.18
420400-1030	1.0	30	0.79	24	10	141.65
420401-1030	1.0	30	0.79	24	1	21.18
420400-1050	1.0	50	0.79	40	10	160.03
420401-1050	1.0	50	0.79	40	1	25.52
420401-1011	1.0	100	0.79	79	1	59.12
420400-1012	1.0	120	0.79	95	3	213.35
420401-1012	1.0	120	0.79	95	1	67.47

Replacement End Caps

Article No.	Case Qty.	Case Price
420169-0000	100	16.14

Kontes Article No.	ID (cm)	Length (cm)	Cross Sectional Area (cm^3)	Max. Vol. (mL)	Case Qty.	Case Price
420400-1505	1.5	5	1.77	9	5	88.32
420401-1505	1.5	5	1.77	9	1	25.52
420400-1510	1.5	10	1.77	18	5	97.68
420401-1510	1.5	10	1.77	18	1	29.70
420400-1515	1.5	15	1.77	27	5	97.68
420401-1515	1.5	15	1.77	27	1	29.70
420400-1520	1.5	20	1.77	35	5	106.68
420401-1520	1.5	20	1.77	35	1	34.61
420400-1530	1.5	30	1.77	53	5	106.68
420401-1530	1.5	30	1.77	53	1	33.74
420400-1550	1.5	50	1.77	89	5	141.65
420401-1550	1.5	50	1.77	89	1	42.40
420400-1575	1.5	75	1.77	124	3	160.03
420401-1575	1.5	75	1.77	124	1	76.06
420400-1511	1.5	100	1.77	177	3	185.98
420401-1511	1.5	100	1.77	177	1	84.34
420400-1512	1.5	120	1.77	230	3	213.35
420401-1512	1.5	120	1.77	230	1	92.98
420400-1517	1.5	170	1.77	301	2	213.35
420401-1517	1.5	170	1.77	301	1	126.50
420400-2505	2.5	5	4.91	25	5	108.84
420401-2505	2.5	5	4.91	25	1	33.60
420400-2510	2.5	10	4.91	49	5	124.34
420401-2510	2.5	10	4.91	49	1	33.74
420400-2515	2.5	15	4.91	74	5	126.15
420401-2515	2.5	15	4.91	74	1	37.61
420400-2520	2.5	20	4.91	98	5	132.64
420401-2520	2.5	20	4.91	98	1	38.06
420400-2530	2.5	30	4.91	147	5	134.44
420401-2530	2.5	30	4.91	147	1	48.57
420400-2550	2.5	50	4.91	246	3	132.64
420401-2550	2.5	50	4.91	246	1	59.12
420400-2575	2.5	75	4.91	344	2	106.68
420401-2575	2.5	75	4.91	344	1	76.06
420400-2511	2.5	100	4.91	491	2	160.03
420401-2511	2.5	100	4.91	491	1	100.92
420401-2512	2.5	120	4.91	638	1	117.86
420400-2512	2.5	120	4.91	638	2	177.31

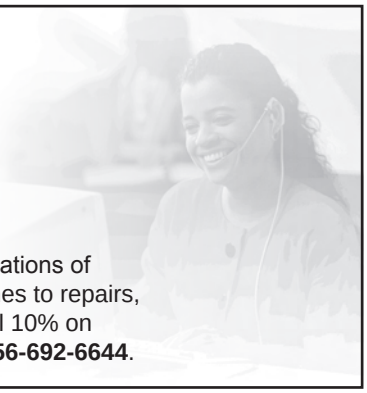
*** CAUTION**

Pressurized glassware should always be used with adequate safety shielding.

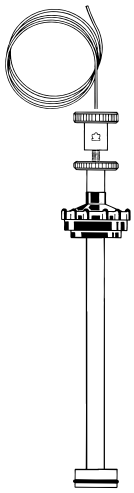


- **Custom Fabrications**
- **Quality Repairs**
- **Modifications of All Kinds**
- **No Order Too Small**
- **Quick Turnaround**

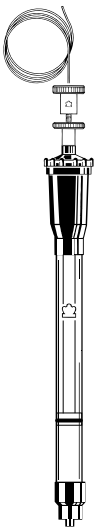
KONTES
custom glass shop
*call toll-free **800-682-6644***
customglass@kimble-chase.com



Contact the **Kontes Custom Glass Shop** at KIMBLE CHASE for modifications of standard products or fabrication of your unique designs. And when it comes to repairs, we can save you up to 75% of the cost of a new item. Save an additional 10% on repairs of Kontes or Kimble Brand products. Fax your requirements to **856-692-6644**.



420415



Column with Flow Adapter

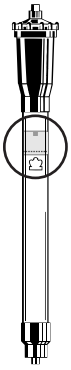
Flow Adapter, Economy, FLEX-COLUMN®

Flow adapters can significantly improve FLEX-COLUMN performance by protecting the gel bed from disruption during sample loading and by eliminating any dead volume above the gel bed. Flow adapters improve chromatogram resolution by delivering the sample and buffer directly to the top of the gel bed. Flow adapters are also recommended when using buffer gradients or when the columns are connected to a low pressure pump system. Flow adapters consist of 1/16" OD FEP PTFE tubing, a polyacetal body, a FKM o-ring seal and a 20 µm porosity HDPE bed support. One replacement bed support is supplied with each flow adapter.

Kontes Article No.	Description	Fits Column ID (cm)	Functional Length (cm)	Case Qty.	Case Price
420415-1000	Flow Adapter	1.0	14	1	126.50
420415-1500	Flow Adapter	1.5	14	1	126.50
420415-2500	Flow Adapter	2.5	14	1	126.50
Replacement Parts					
420415-1001	Bed Support, 1.0 cm			10	33.74
420415-1501	Bed Support, 1.5 cm			10	33.74
420415-2501	Bed Support, 2.5 cm			10	42.40
758252-0010	O-ring, FKM, Size 010			10	15.21
758252-0110	O-ring, FKM, Size 110			10	19.04
758252-0116	O-ring, FKM, Size 116			10	25.39
420828-0116	Ferrule, Polypropylene, 1/16" OD			1	1.55
420823-0116	Tubing, FEP PTFE, 1/16" OD x 0.038" ID			10 feet	18.91



420404

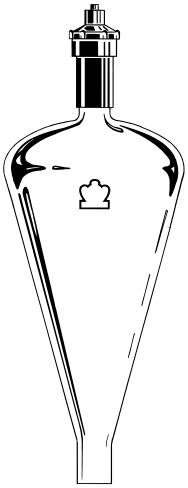


Column with Diffusion Disc

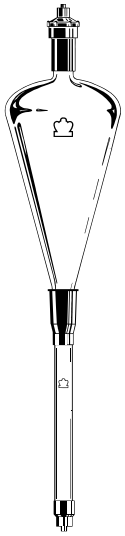
Sample Diffusion Disc, Economy, FLEX-COLUMN®

Sample diffusion discs protect the gel bed from being disrupted during sample application whenever a flow adapter is not used. A transparent acrylic ring is sealed to a 20 µm porosity HDPE disc which protects the top of the gel bed when the sample is manually applied. A cross bar on the top of the acrylic ring permits easy removal of the sample diffusion disc from the column.

Kontes Article No.	Description	Case Qty.	Case Price
420404-1000	Sample Diffusion Disc, 1.0 cm	1	14.40
420404-1500	Sample Diffusion Disc, 1.5 cm	1	15.71
420404-2500	Sample Diffusion Disc, 2.5 cm	1	17.88



420406

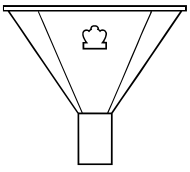


Column with Glass Reservoir

Packing Reservoir, Glass, Economy, FLEX-COLUMN®

The FLEX-COLUMN Glass Reservoirs are ideal for packing gel slurries into columns and as a buffer reservoir for gravity flow chromatography. A glass reservoir can be converted to a mariotte constant pressure reservoir by closing the top with a stopper containing a piece of glass tubing which extends into the reservoir. The reservoirs are available in 500 mL and 1000 mL capacities and have a removable polypropylene upper cap with a male luer lock fitting.

Kontes Article No.	Description	Fits Column ID (cm)	Case Qty.	Case Price
420406-0500	Glass Reservoir, 500 mL	0.7, 1.0, 1.5	1	167.21
420406-0525	Glass Reservoir, 500 mL	2.5	1	167.21
420406-1000	Glass Reservoir, 1000 mL	0.7, 1.0, 1.5	1	222.00
420406-1025	Glass Reservoir, 1000 mL	2.5	1	222.00



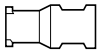
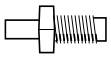
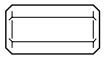
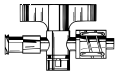
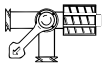
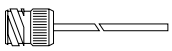
420405

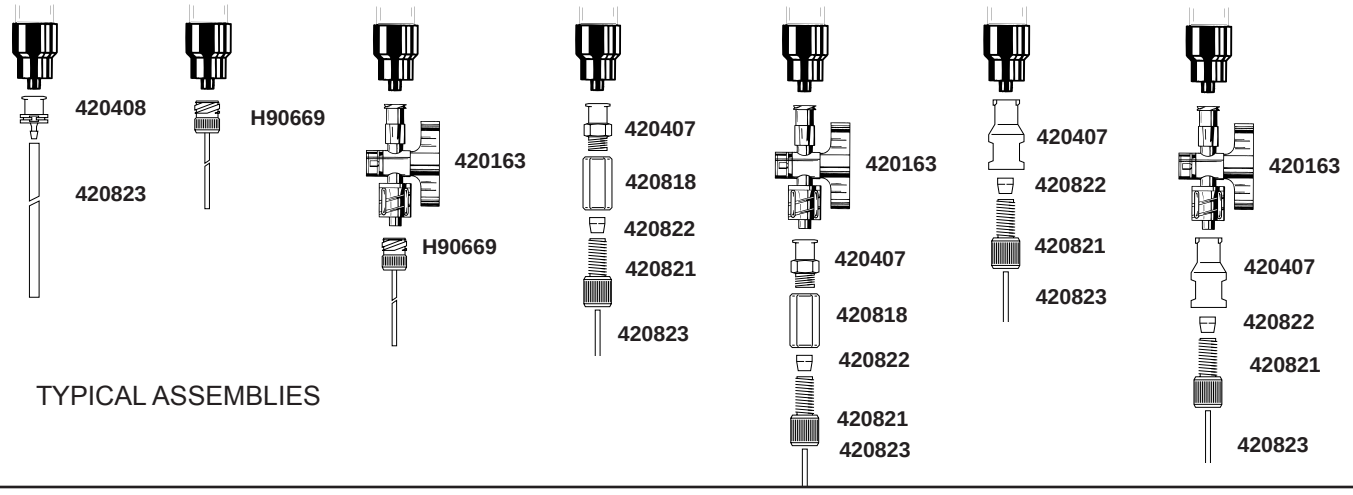
Packing Reservoir, Polypropylene, Economy, FLEX-COLUMN®

The funnels are manufactured from polypropylene and are available in two capacities: 100 mL for the 0.7, 1.0 and 1.5 cm ID columns and 700 mL for the 2.5 cm columns. The funnels are used for initial column packing and as a small buffer reservoir.

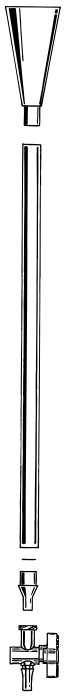
Kontes Article No.	Capacity (mL)	Case Qty.	Case Price
420405-0100	100	12	78.20
420405-0700	700	5	78.20

FLEX-COLUMN Fittings

Kontes Article No.		Description	Material	Case Qty.	Case Price
420408-0000		Barb for 1/16" I.D. tubing to female luer	polypropylene	10	**21.89**
420412-0000		Barb for 1/16" I.D. tubing to male luer	polypropylene	10	**21.05**
420411-0000		Female luer to female luer	polypropylene	10	**25.02**
420407-0000		Female luer to 1/4"-28 thread	polypropylene	10	**19.92**
420407-2003		Female luer to female 1/4"-28 thread	ETFE	1	**13.22**
420407-2113		Male luer to male 1/4"-28 thread	ETFE	1	**6.26**
H88800-0000		Union, 1/4-28 to 1/4-28	CTFE	1	**9.51**
420818-0000		Union, 1/4"-28 to 1/4"-28	ETFE	1	**7.25**
420818-0600		Union, 1/4"-28 to M-6	ETFE	1	**8.26**
420818-0606		Union, M-6 metric to M-6	ETFE	1	**12.36**
420163-0001		1-way stopcock female luer to male luer	body-nylon valve plug-polyethylene	10	**38.51**
420163-4503		3-way stopcock Two female luer to male luer	body-nylon valve plug-polyethylene	10	**46.77**
H90669-0005		5' PTFE tubing w/ integral luer lock	PTFE/CTFE	5	**142.14**
420823-0116		Tubing, 1/16" O.D. x 0.038" I.D. x 10'	FEP PTFE	1	**18.91**
420823-0018		Tubing, 1/8" O.D. x 0.062" I.D. x 10'	FEP PTFE	1	**29.28**
420821-0116		1/4"-28 tubing nut for 1/16" O.D. tubing	ETFE	1	**3.56**
420821-0018		1/4"-28 tubing nut for 1/8" O.D. tubing	ETFE	1	**3.56**
420822-0116		Ferrule for 1/16" O.D. tubing	ETFE	1	**2.70**
420822-0018		Ferrule for 1/8" O.D. tubing	ETFE	1	**2.70**
420822-2007		Ferrule for 1.8 mm O.D. tubing	ETFE	1	**2.70**



TYPICAL ASSEMBLIES



420160 Shown with Optional One-Way Valve

Column, Disposable, Polypropylene, DISPOSAFLEX®

The KONTES DISPOSAFLEX column is an inexpensive, multi-purpose column designed to satisfy a wide range of analytical separations using aqueous buffers. The disposable feature eliminates the possibility of cross contamination when using labeled compounds. A typical application of the Disposaflex column is the extraction of the cyclic nucleotides cAMP and cGMP from sample preparations using AG1-X8.

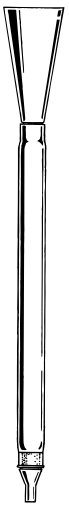
The 8 mm inner diameter of the polypropylene column is uniform, assuring reproducibility. The 200 mm length of the DISPOSAFLEX column can easily be cut to a shorter length. The polypropylene reservoir has a 9 mL capacity. The lower column fitting with a luer outlet is molded polypropylene with a specially designed recess to securely hold a porous polyethylene bed support or a glass wool plug.

Supplied unassembled with a column, polypropylene reservoir and lower column fitting. Polyethylene bed supports and on-off valves are available as accessories.

Specifications

Column I.D.: 8mm
Column Capacity: 8mL
Column Length: 200mm
Overall Length: 265mm
Reservoir Capacity: 9mL

Kontes Article No.	Description	Case Qty.	Case Price
420160-0000	DISPOSAFLEX Column Set, Unassembled, Pkg./100	100	108.12
Replacement Parts			
420164-0000	Reservoir Only, Pkg/100	100	48.15
420168-0000	Luer Fitting Only, Pkg/100	100	36.19
420168-1000	Luer Fitting Only, Pkg/50	50	20.03
Accessory Parts			
420162-0000	Polyethylene Bed Support, 30-50 Microns, Pkg./100	100	31.43
420162-0020	Polyethylene Bed Support, 20 Microns, Pkg./100	100	31.43
420163-0000	1-Way On-Off Valve, Polycarbonate/Polyethylene, Pkg./50	50	98.78
420163-0001	1-Way Valve, Polycarbonate/Polyethylene, Pkg./10	10	38.51
420163-4500	1-Way Valve, Nylon/Polyethylene, Pkg./50	50	198.36
420163-4503	3-Way Valve, Nylon/Polyethylene, Pkg./10	10	46.77
420169-0000	Column Outlet Cap, Pkg./100	100	16.14



420166

Column, Disposable, Glass, DISPOSAFLEX®

A multi-purpose glass column. Supplied assembled with a polypropylene reservoir, a lower column fitting with a luer outlet and a 20 micron polyethylene bed support.

Specifications

Column I.D.: 8mm
Column Capacity: 6mL
Column Length: 150mm
Overall Length: 215mm
Reservoir Capacity: 9mL

Kontes Article No.	Description	Case Qty.	Case Price
420166-0001	DISPOSAFLEX Column Set, Assembled, Pkg./50	50	350.05
420166-1001	DISPOSAFLEX Column Set, Assembled, Pkg./5	5	39.36
Replacement Parts			
420162-0020	Polyethylene Bed Support, 20 Microns, Pkg./100	100	31.43
Accessory Parts			
420162-0000	Polyethylene Bed Support, 30-50 Microns, Pkg./100	100	31.43
420163-0000	On-Off Valve, Polycarbonate/Polyethylene, Pkg./50	50	98.78
420163-0001	On-Off Valve, Polycarbonate/Polyethylene, Pkg./10	10	38.51
420163-4500	On-Off Valve, Polyethylene/Nylon, Pkg./50	50	198.36
420163-4503	On-Off Valve, Polyethylene/Nylon, Pkg./10	10	46.77
420169-0000	Column Outlet Cap, Pkg./100	100	16.14

Column, with All-PTFE Stopcock Assembly

Reinforced top and tooled lower end of this KIMAX column provide extra strength and a tight, leakproof fit with all-PTFE stopcock. An "O" ring has been added under the PTFE fitment to maintain a liquid tight seal over a large temperature range (0-100 °C). Liquid contacts only glass and PTFE. Stopcock is easily removed, providing easy access to column packing. Tip and stopcock assembly are available as replacement components. **Replacement stopcock for all sizes is 41006F-2.**

Kimble Article No.	Approx. Inside Dia. (mm)	Column Capacity (mL)	Approx. Length (mm)	Case Qty.	Case Price
17800-11300	11	25	300	1	67.45
17800-11500	11	45	500	1	74.92
17800-19300	19	80	300	1	81.21
17800-19500	19	135	500	1	87.17
17800-22300	22	120	300	1	84.28
17800-22500	22	200	500	1	91.12

Replacement Parts			
41006F-2	PTFE Stopcock Assembly for 17021H, 17800 and 29050H	1	50.78
17802-99	Column Tip, Only for 17800, 17810 and 29050H 6		50.34



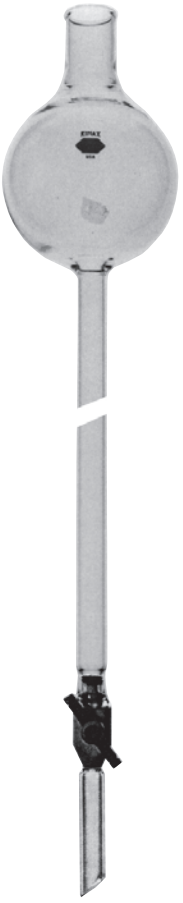
17800

Column, with Reservoir and All-PTFE Stopcock Assembly

KIMAX column with a 250 mL reservoir at the top of the column. Reinforced top and a tooled lower end of the column for extra strength and a tight, leakproof fit with an all-PTFE stopcock. An "O" ring has been added under the PTFE fitment to maintain a liquid tight seal over a large temperature range (0-100°C). Liquid contacts only glass and PTFE. Stopcock is easily removed, providing easy access to column packing. Tip and stopcock assembly are available as replacement components. **Replacement stopcock for all sizes is 41006F-2.**

Kimble Article No.	Approx. Inside Dia. (mm)	Approx. Column Length (mm)	Case Qty.	Case Price
17810-11300	11	300	1	74.89
17810-19300	19	300	1	75.50

Replacement Parts			
41006F-2	PTFE Stopcock Assembly for 17021H, 17800 and 29050H	1	50.78
17802-99	Column Tip, Only for 17800, 17810 and 29050H	6	50.34



17810



41006F

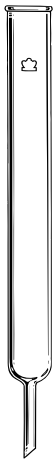


17082

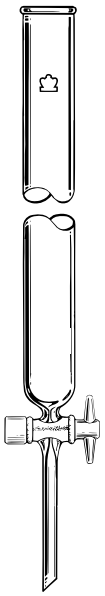
KONTES
custom glass shop
*call toll-free **800-682-6644***
customglass@kimble-chase.com

Contact the **Kontes Custom Glass Shop** at KIMBLE CHASE for modifications of standard products or fabrication of your unique designs. And when it comes to repairs, we can save you up to 75% of the cost of a new item. Save an additional 10% on repairs of Kontes or Kimble Brand products. Fax your requirements to **856-692-6644**.

- **Custom Fabrications**
- **Quality Repairs**
- **Modifications of All Kinds**
- **No Order Too Small**
- **Quick Turnaround**



420300



420530

Column, Plain

Basic column used for many separations in adsorption and ion exchange chromatography. Glass wool (not supplied) is used to support column packing.

Kontes Article No.	Column I.D. x Length (mm)	Nominal Column Vol. (mL)	Case Qty.	Case Price
420300-0021	22 x 250	95	1	21.18
420300-0022	22 x 300	110	1	26.42
420300-0023	22 x 400	150	1	36.11

Column, Plain, with PTFE Stopcock Plug

A general purpose column for analytical separations. A plug of glass wool can be used to support the column packing. Size 2 PTFE stopcock plugs, 821001-0002 and 821001-0004, control the flow rate.

Kontes Article No.	Column I.D. x Length (mm)	Nominal Column Vol. (mL)	Stopcock (mm)	Case Qty.	Case Price
420530-0211	11 x 150	10	2	1	92.03
420530-0212	11 x 200	15	2	1	92.03
420530-0213	11 x 250	20	2	1	81.38
420530-0214	11 x 300	25	2	1	84.93
420530-0125	13 x 250	28	2	1	80.40
420530-0130	13 x 300	34	2	1	87.41
420530-0150	13 x 500	66	2	1	110.38
420530-0221	15 x 200	30	2	1	89.90
420530-0222	15 x 250	40	2	1	92.03
420530-0225	15 x 500	80	2	1	104.84
420530-0220	19 x 200	51	2	1	73.70
420530-0226	19 x 250	56	2	1	80.40
420530-0232	19 x 300	80	2	1	99.14
420530-0233	19 x 400	113	2	1	105.55
420530-0234	19 x 500	140	2	1	110.51
420530-0241	22 x 300	110	2	1	105.55
420530-0242	22 x 350	130	2	1	108.37
420530-0244	22 x 500	190	2	1	117.26
420530-0320	25 x 200	90	2	1	92.84
420530-0325	25 x 250	100	2	1	104.96
420530-0330	25 x 300	136	2	1	117.08
420530-0350	25 x 500	245	2	1	140.37
420530-0251	30 x 350	220	2	1	115.13
420530-0252	30 x 400	250	2	1	119.75
420530-0253	30 x 500	300	2	1	127.92
420530-0255	30 x 700	440	2	1	156.33
420530-0265	34 x 700	630	2	1	177.65
420530-0420	38 x 200	227	2	1	92.84
420530-0425	38 x 250	280	2	1	105.28
420530-0430	38 x 300	340	2	1	115.13
420530-0450	38 x 500	567	2	1	135.01
420530-0273	41 x 500	650	2	1	144.97
420530-0275	41 x 700	900	2	1	207.51
420530-0414	49 x 600	1100	2	1	211.77
420530-0415	49 x 700	1300	2	1	216.05
420530-0520	50 x 200	360	2	1	99.53
420530-0525	50 x 250	470	2	1	114.53
420530-0530	50 x 300	589	2	1	127.92
420530-0550	50 x 500	981	2	1	156.33
420530-0560	50 x 600	1180	2	1	186.64
420530-0620	64 x 200	643	4	1	111.98
420530-0625	64 x 250	804	4	1	124.10
420530-0630	64 x 300	965	4	1	135.01
420530-0650	64 x 500	1608	4	1	177.65
420530-0660	64 x 600	1929	4	1	217.44
420530-0720	75 x 200	883	4	1	130.80
420530-0725	75 x 250	1004	4	1	149.94
420530-0730	75 x 300	1290	4	1	168.44
420530-0750	75 x 500	2149	4	1	224.56
420530-0760	75 x 600	2579	4	1	261.51

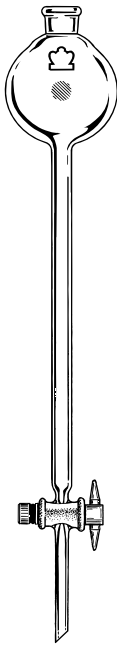
Replacement Parts

821001-0002	Stopcock Plug Only, 2mm	1	12.03
821001-0004	Stopcock Plug Only, 4mm	1	13.81

Column, Plain, with PTFE Stopcock Plug

A general purpose column with an integral reservoir for analytical separations. A plug of glass wool can be used to support the column packing. Size 2 PTFE stopcock plug, 821001-0002 and 821001-0004, control the flow rate. Top is tooled for rubber stopper.

Kontes Article No.	Reservoir Cap. (mL)	Column I.D.x Length (mm)	Approx.Overall Length (mm)	Stopcock (mm)	Stopper Size	Case Qty.	Case Price
420280-0213	200	11 x 250	450	2	2	1	93.46
420280-0222	250	15 x 250	460	2	2	1	102.69
420280-0232	250	19 x 300	505	2	2	1	110.51
420280-0242	300	22 x 350	560	2	3	1	119.75
420280-0252	500	30 x 400	625	2	3	1	141.07

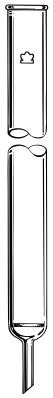


420280

Column, with Fritted Disc

Basic column used for many separations in adsorption and ion exchange chromatography. Coarse porosity fritted disc is sealed in.

Kontes Article No.	Column I.D. x Length (mm)	Nominal Column Vol. (mL)	Case Qty.	Case Price
420320-0213	11 x 300	20	1	50.90
420320-0224	19 x 400	110	1	56.27
420320-0233	22 x 300	110	1	60.11
420320-0234	22 x 400	150	1	62.55
420320-0245	25 x 500	250	1	66.66
420320-0256	41 x 600	790	1	80.30

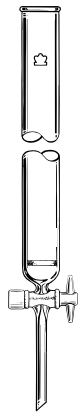


420320

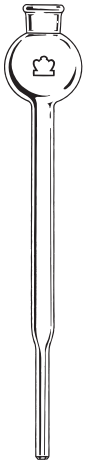
Column, with Fritted Disc and PTFE Stopcock Plug

Gravity chromatography column manufactured from medium wall tubing with 821000 PTFE stopcock similar in design to the 420530 series. These columns have a coarse porosity glass frit (40-60 micron pore size) at the lower end to act as a support for column packing material. Custom sizes and plastic safety coating are available upon request. Replacement stopcock plug is 821001.

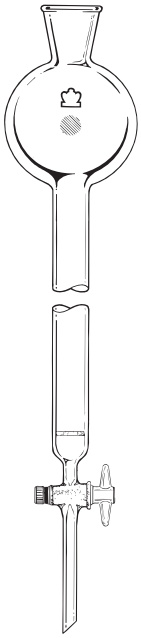
Kontes Article No.	Column I.D. x Length (mm)	Nominal Column Vol. (mL)	$\frac{8}{3}$ Plug Size (mm)	Case Qty.	Case Price
420540-0213	11 x 300	20	2	1	106.59
420540-0120	13 x 200	23	2	1	87.41
420540-0125	13 x 250	28	2	1	92.84
420540-0130	13 x 300	34	2	1	97.94
420540-0150	13 x 500	66	2	1	115.82
420540-0220	19 x 200	51	2	1	87.41
420540-0225	19 x 250	56	2	1	92.84
420540-0230	19 x 300	76	2	1	123.47
420540-0224	19 x 400	110	2	1	112.28
420540-0250	19 x 500	142	2	1	115.82
420540-0233	22 x 300	110	2	1	117.26
420540-0234	22 x 400	150	2	1	118.35
420540-0320	25 x 200	90	2	1	111.98
420540-0325	25 x 250	100	2	1	121.24
420540-0243	25 x 300	140	2	1	122.60
420540-0245	25 x 500	240	2	1	163.25
420540-0420	38 x 200	227	2	1	111.98
420540-0425	38 x 250	280	2	1	121.24
420540-0430	38 x 300	340	2	1	129.35
420540-0450	38 x 500	567	2	1	156.33
420540-0256	41 x 600	775	4	1	180.48
420540-2610	49 x 1000	1875	4	1	301.30
420540-0520	50 x 200	360	2	1	145.48
420540-0525	50 x 250	470	2	1	158.25
420540-0530	50 x 300	589	2	1	170.56
420540-0550	50 x 500	981	2	1	176.23
420540-0560	50 x 600	1180	2	1	229.06
420540-0620	64 x 200	643	4	1	152.82
420540-0625	64 x 250	804	4	1	164.62
420540-0630	64 x 300	965	4	1	171.98
420540-0650	64 x 500	1608	4	1	208.93
420540-0660	64 x 600	1929	4	1	241.63
420540-0720	75 x 200	883	4	1	197.47
420540-0725	75 x 250	1004	4	1	202.90
420540-0730	75 x 300	1290	4	1	223.32
420540-0750	75 x 500	2149	4	1	267.21
420540-0760	75 x 600	2579	4	1	305.57



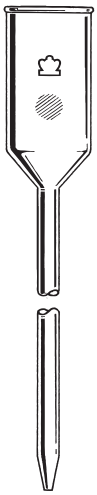
420540



420000



420290



420100
420125
420150

Column, with Fritted Disc and PTFE Stopcock Plug

Clean-up column for environmental samples containing non-volatile components. Coarse porosity fritted disc is sealed in. Top reservoir has a flared funnel for easy addition of eluting solvent. Size 2 PTFE plug, 821001-0002, controls the flow rate.

Kontes Article No.	Reservoir Cap. (mL)	Column I.D. x Length (mm)	Case Qty.	Case Price
420290-0000	250	19 x 400	1	200.40

Column, Plain

Plain column tapered to a 2 mm bore capillary tip. Column packing is supported by glass wool, not supplied. Top is tooled for a #2 rubber stopper.

Kontes Article No.	Reservoir Cap. (mL)	Column I.D. x Length (mm)	Approx. Overall Length (mm)	Case Qty.	Case Price
420000-0000	50	11.5 x 160	300	1	37.09

Column, General Purpose

General purpose column for quick separations. Column packing is supported by glass wool (not supplied). Funnel-shaped top permits easy filling and holds additional solvent.

Kontes Article No.	Reservoir Cap. (mL)	Column I.D. x Length (mm)	Approx. Overall Length (mm)	Case Qty.	Case Price
420100-0022	50	7 x 200	280	1	27.58
420100-0023	50	9 x 200	280	1	28.56
420125-0000	25	7 x 145	215	1	27.58
420150-0000	15	4 x 150	200	1	26.42

The Kontes Custom Glass Shop has the ability to custom fabricate chromatography columns to your specifications. Columns are available with any standard taper, spherical or Rodaviss® joints.

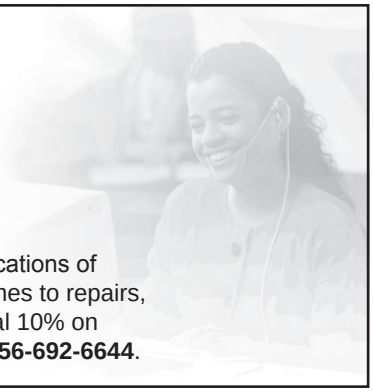
See Page 85 for our Custom Chromatography Columns specifications form.

See *PETROCHEMCIAL* for columns used in the separation and determination of aromatic and non-aromatic fractions from hydrocarbon mixtures.
Ref: ASTM D-2549.



- **Custom Fabrications**
- **Quality Repairs**
- **Modifications of All Kinds**
- **No Order Too Small**
- **Quick Turnaround**

KONTES
custom glass shop
*call toll-free **800-682-6644***
customglass@kimble-chase.com



Contact the **Kontes Custom Glass Shop** at KIMBLE CHASE for modifications of standard products or fabrication of your unique designs. And when it comes to repairs, we can save you up to 75% of the cost of a new item. Save an additional 10% on repairs of Kontes or Kimble Brand products. Fax your requirements to **856-692-6644**.

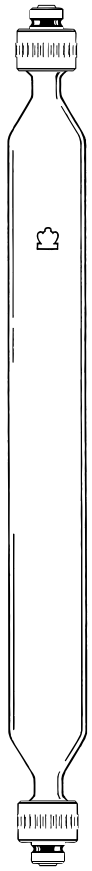
Column, Threaded, Tapered-End Style, CHROMAFLEX®

A modified version of our popular CHROMAFLEX® columns, these columns offer a higher performance level over traditional low pressure chromatography columns. The column barrels are manufactured from borosilicate glass. The PTFE end fittings have a 20µ polyethylene bed support and 1/4”-28 CTFE fittings. See listing of Optional 20µ PTFE bed supports.

Kontes Article No.	Column I.D. x Length (cm)	Nominal Column Vol. (mL)	Case Qty.	Case Price
420830-1540	10 x 15	820	1	469.33
420830-3040	10 x 30	2100	1	487.38
420830-6040	10 x 60	4650	1	521.99
420830-1040	10 x 100	7670	1	603.21
420830-1240	10 x 120	9700	1	639.30

Component Parts

420831-1540	Glass Barrel Only, 10 x 15 cm	1	329.44
420831-3040	Glass Barrel Only, 10 x 30 cm	1	347.48
420831-6040	Glass Barrel Only, 10 x 60 cm	1	382.08
420831-1040	Glass Barrel Only, 10 x 100 cm	1	463.31
420831-1240	Glass Barrel Only, 10 x 120 cm	1	500.90
420832-2100	PTFE End Fittings, for 3.8, 5.0 and 7.0 cm Columns	1	38.38
420832-2120	PTFE End Fittings, for 10 cm Columns	1	49.48
420833-0000	Screw Cap, for 3.8, 5.0 and 7.0 cm Columns	1	9.10
420833-0020	Screw Cap, for 10 cm Columns	1	16.35
420804-0001	CTFE Thread Adapter, 1/2”-20M to 1/4”-28F, 2 Required, Pkg./2	2	29.28

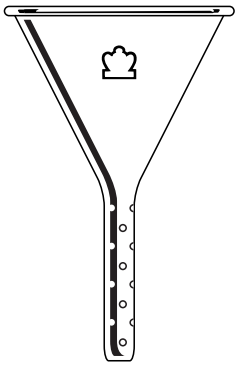


420830

Solvent Addition Funnel

Design permits addition of solvents to flash chromatography columns without disturbing the silica-gel / packing layer. Lower end of the funnel is closed and the stem has a series of small holes for solvent drainage. Funnel top is 75mm in diameter.

Kontes Article No.	Stem O.D. x Length (mm)	Case Qty.	Case Price
629500-0001	12 x 75	1	50.46
629500-0002	12 x 100	1	55.50
629500-0003	22 x 75	1	55.90
629500-0004	22 x 100	1	57.27
629500-0005	28 x 100	1	64.88
629500-0006	28 x 125	1	66.38



629500

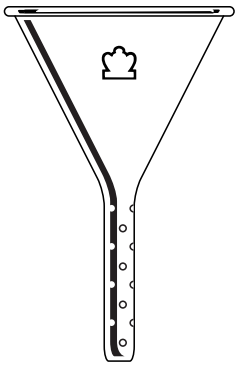
Solvent Addition Funnel, Polypropylene, Set of Five

Unbreakable, polypropylene solvent addition funnels for use with chromatography columns. The unique closed-end design facilitates gentle addition of solvent to the column. Perforated funnel stem permits solvent to pour down the column wall without disturbing the top layer of silica gel. Convenient assortment pack consists of five funnels for use with various column sizes. Approximate dimensions are provided below.

Funnel Dimensions

Funnel Size (mL)	Top O.D. (mm)	Stem O.D. (mm)	Stem Length (mm)	Approx. Overall Height (mm)
60	68	9	20	65
120	88	9	22	95
240	108	12	38	115
960	168	16	50	175
960	168	24	70	185

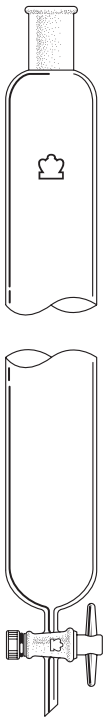
Kontes Article No.	Description	Case Qty.	Case Price
629050-0000	Funnel, Solvent Addition, Set of 5	5	63.40



629050

Column, with PTFE Stopcock Plug and Ⓢ Joint

These general purpose gravity chromatography columns feature a PTFE stopcock and standard taper joint and are manufactured from medium wall tubing. Glass wool (not supplied) may be used as a support for column packing material. These columns may be used alone or in combination with 420570 series reservoir and 420575 series flow control adapters. Custom sizes and plastic safety coating are available upon request.



420510

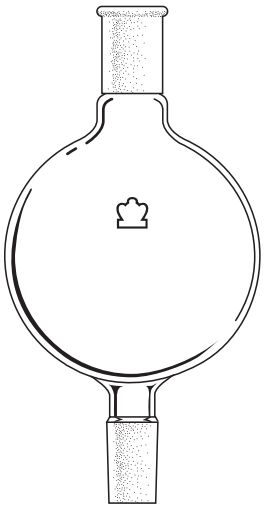
Kontes Article No.	Nominal Volume (mL)	Upper Ⓢ Joint	Column ID x Length (mm)	Stopcock Bore (mm)	Case Qty.	Case Price
420510-0120	23	24/40	13 x 200	2	1	90.96
420510-0125	28	24/40	13 x 250	2	1	93.80
420510-0130	34	24/40	13 x 300	2	1	102.34
420510-0150	66	24/40	13 x 500	2	1	125.37
420510-0220	51	24/40	19 x 200	2	1	90.96
420510-0225	56	24/40	19 x 250	2	1	93.80
420510-0230	76	24/40	19 x 300	2	1	102.34
420510-0250	142	24/40	19 x 500	2	1	125.37
420510-0320	90	24/40	25 x 200	2	1	113.70
420510-0325	100	24/40	25 x 250	2	1	122.22
420510-0330	136	24/40	25 x 300	2	1	132.18
420510-0350	245	24/40	25 x 500	2	1	162.08
420510-0420	227	24/40	38 x 200	2	1	115.82
420510-0425	280	24/40	38 x 250	2	1	122.22
420510-0430	340	24/40	38 x 300	2	1	130.76
420510-0450	560	24/40	38 x 500	2	1	159.18
420510-0520	360	24/40	50 x 200	2	1	148.67
420510-0525	470	24/40	50 x 250	2	1	162.08
420510-0530	590	24/40	50 x 300	2	1	170.56
420510-0550	980	24/40	50 x 500	2	1	190.46
420510-0560	1180	24/40	50 x 600	2	1	221.72
420510-0620	643	45/50	64 x 200	4	1	157.91
420510-0625	804	45/50	64 x 250	4	1	170.36
420510-0630	965	45/50	64 x 300	4	1	173.39
420510-0650	1600	45/50	64 x 500	4	1	210.34
420510-0660	1920	45/50	64 x 600	4	1	244.45
420510-0720	883	45/50	75 x 200	4	1	201.30
420510-0725	1004	45/50	75 x 250	4	1	217.90
420510-0730	1290	45/50	75 x 300	4	1	227.41
420510-0750	2140	45/50	75 x 500	4	1	272.87
420510-0760	2580	45/50	75 x 600	4	1	319.78
420510-5000	Column Start Up Kit, contains one each of the following Columns sizes 0230, 0330, 0350, 0430, 0450, 0550, one each of 420570-0524 and 420570-1024 Reservoirs, and two 420575-2440 Flow Adapters.				1	998.24

Replacement Parts

821001-0002	Stopcock Plug only, 2 mm	1	12.03
821001-0004	Stopcock Plug only, 4 mm	1	13.81

Packing Reservoir, with Ⓢ Joints

These heavy duty reservoirs are designed for use with 420510 and 420550 series chromatography columns with and without fritted glass supports or in combination with 420575 series flow control adapters. Reservoirs are available in a variety of sizes and joint configurations. Custom sizes and plastic safety coating are available upon request.



420570

Kontes Article No.	Upper Ⓢ Joint	Lower Ⓢ Joint	Capacity (mL)	Case Qty.	Case Price
420570-0124	100	24/40	24/40	1	49.74
420570-0224	250	24/40	24/40	1	58.26
420570-0524	500	24/40	24/40	1	62.55
420570-1024	1000	24/40	24/40	1	66.80
420570-2024	2000	24/40	24/40	1	109.43
420570-1045	1000	24/40	45/50	1	78.17
420570-2045	2000	24/40	45/50	1	120.81
420570-3045	3000	45/50	45/50	1	127.92
420570-5045	5000	45/50	45/50	1	139.28

Column, with Fritted Disc, PTFE Stopcock Plug and ⅋ Joint

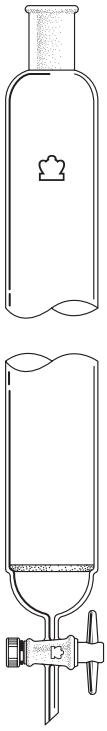
Gravity column manufactured from medium wall tubing with PTFE stopcock similar in design to the 420510 series. These columns have a coarse porosity glass frit (40-60 micron pore size) at the lower end to act as a support for column packing material. These columns may be used alone or in combination with 420570 series reservoir and 420575 series flow control adapters. Custom sizes and plastic safety coating are available upon request.

Kontes Article No.	Nominal Volume (mL)	Upper ⅋ Joint	Column ID x Length (mm)	Stopcock Bore (mm)	Case Qty.	Case Price
420550-0213	30	24/40	11 x 300	2	1	150.65
420550-0120	23	24/40	13 x 200	2	1	102.34
420550-0125	28	24/40	13 x 250	2	1	108.00
420550-0130	34	24/40	13 x 300	2	1	116.56
420550-0150	66	24/40	13 x 500	2	1	140.37
420550-0220	51	24/40	19 x 200	2	1	102.34
420550-0225	56	24/40	19 x 250	2	1	108.00
420550-0230	76	24/40	19 x 300	2	1	117.98
420550-0224	125	24/40	19 x 400	2	1	157.77
420550-0234	150	24/40	19 x 450	2	1	163.43
420550-0250	142	24/40	19 x 500	2	1	140.37
420550-0233	140	24/40	22 x 300	2	1	163.43
420550-0243	175	24/40	22 x 350	2	1	169.13
420550-0245	250	24/40	22 x 550	2	1	171.98
420550-0320	90	24/40	25 x 200	2	1	127.92
420550-0325	113	24/40	25 x 250	2	1	136.45
420550-0330	136	24/40	25 x 300	2	1	149.94
420550-0350	245	24/40	25 x 500	2	1	177.06
420550-0420	227	24/40	38 x 200	2	1	137.50
420550-0425	280	24/40	38 x 250	2	1	144.97
420550-0430	340	24/40	38 x 300	2	1	150.65
420550-0450	560	24/40	38 x 500	2	1	191.87
420550-0256	790	24/40	41 x 600	4	1	234.51
420550-0520	360	24/40	50 x 200	2	1	171.64
420550-0525	470	24/40	50 x 250	2	1	183.76
420550-0530	580	24/40	50 x 300	2	1	191.87
420550-0550	980	24/40	50 x 500	2	1	210.34
420550-0560	1175	24/40	50 x 600	2	1	239.66
420550-2610	1875	24/40	50 x 1000	4	1	373.79
420550-0620	643	45/50	64 x 200	4	1	188.23
420550-0625	804	45/50	64 x 250	4	1	198.75
420550-0630	960	45/50	64 x 300	4	1	204.66
420550-0650	1600	45/50	64 x 500	4	1	243.04
420550-0660	1920	45/50	64 x 600	4	1	277.14
420550-0720	883	45/50	75 x 200	4	1	230.35
420550-0725	1004	45/50	75 x 250	4	1	246.30
420550-0730	1280	45/50	75 x 300	4	1	255.83
420550-0750	2100	45/50	75 x 500	4	1	301.30
420550-0760	2550	45/50	75 x 600	4	1	348.21

420550-5000	Column Start Up Kit, contains one each of the following Columns sizes 0230, 0330, 0350, 0430, 0450, 0550, one each of 420570-0524 and 420570-1024 Reservoirs, and two 420575-2440 Flow Adapters.	1	1,149.78

Replacement Parts

821001-0002	Stopcock Plug only, 2 mm	1	12.03
821001-0004	Stopcock Plug only, 4 mm	1	13.81



420550

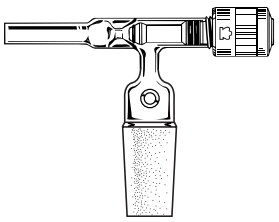
Flow Control Adapter, with ⅋ Joint

The flow control adapter features Kontes Hi-Vac® PTFE plug designed with a precision external thread for fine control. The accurately controlled valve seat and the extended tip on the PTFE plug allow semi-needle valve control for liquids. The FKM o-ring is shielded from direct exposure to liquids within the system by PTFE ring seals.

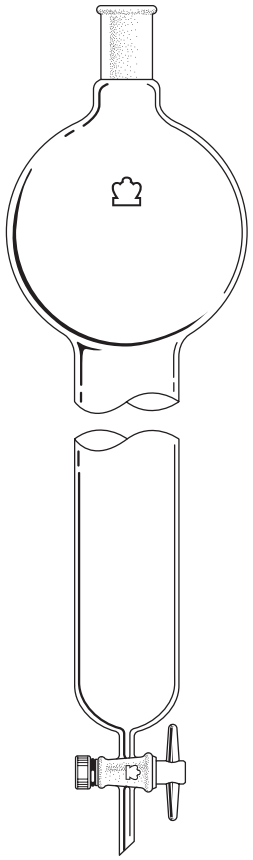
Article No. Kontes	⅋ Joint	Stopcock Bore (mm)	Case Qty.	Case Price
420575-2440	24/40	4	1	90.96
420575-4550	45/50	4	1	99.50

Replacement Plug

826411-0004	Valve Plug only, 4 mm	1	9.71



420575



420610

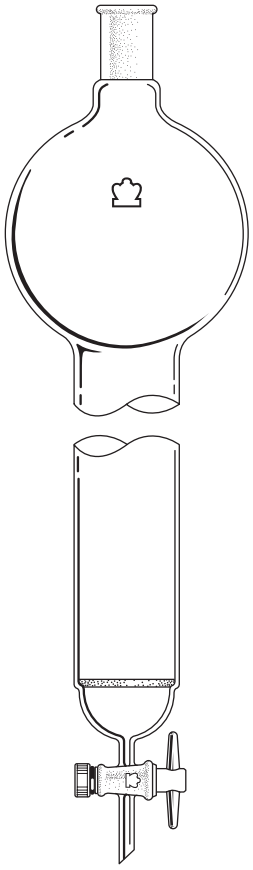
Column, with Reservoir and ⅋ 24/40 Joint

Gravity chromatography column manufactured from medium wall tubing with PTFE stopcock and in-line reservoir for containing liquid buffer. Glass wool (not supplied) may be used as a support for the packing material. These columns may be used alone or in combination with 420575-2440 flow control adapter. Custom sizes and plastic safety coating are available upon request.

Kontes Article No.	Nominal Volume (mL)	Column ID x Length (mm)	Reservoir Cap (mL)	Stopcock Bore (mm)	Case Qty.	Case Price
420610-0120	23	13 x 200	250	2	1	102.34
420610-0125	28	13 x 250	250	2	1	108.00
420610-0130	34	13 x 300	250	2	1	113.70
420610-0320	90	25 x 200	250	2	1	129.35
420610-0325	100	25 x 250	250	2	1	136.45
420610-0330	136	25 x 500	250	2	1	144.97
420610-0350	245	25 x 300	250	2	1	181.85
420610-0420	227	38 x 200	500	2	1	134.95
420610-0425	280	38 x 250	500	2	1	130.76
420610-0430	340	38 x 300	500	2	1	147.81
420610-0450	560	38 x 500	500	2	1	173.39
420610-0520	360	50 x 300	500	2	1	166.20
420610-0530	590	50 x 300	1000	2	1	193.29
420610-0550	980	50 x 500	1000	2	1	213.20
420610-0560	1180	50 x 600	1000	2	1	251.57
420610-0620	643	64 x 200	1000	4	1	181.85
420610-0630	965	64 x 300	1000	4	1	201.83
420610-0650	1600	64 x 500	2000	4	1	235.91
420610-0660	1920	64 x 600	2000	4	1	261.51
420610-0720	883	75 x 200	2000	4	1	239.26
420610-0730	1290	75 x 300	2000	4	1	231.65
420610-0750	2140	75 x 500	2000	4	1	312.70
420610-0760	2580	75 x 600	2000	4	1	338.26
420610-5000	Column Start Up Kit, contains one each of the following Columns sizes 0130, 0330, 0350, 0430, 0450, and two 420575-2440 Flow Adapters.				1	804.59

Replacement Parts

821001-0002	Stopcock Plug only, 2 mm	1	12.03
821001-0004	Stopcock Plug only, 4 mm	1	13.81



420620

Column, with Fritted Disc, Reservoir and ⅋ 24/40 Joint

Chromatography columns manufactured from medium wall tubing with PTFE stopcock and inline reservoir for containing liquid buffer. These columns have a coarse porosity glass frit (40-60 micron pore size) as a support for column packing material. These columns may be used alone or in combination with 420575-2440 flow control adapter. Custom sizes and plastic coating are available upon request.

Kontes Article No.	Nominal Volume (mL)	Column ID x Length (mm)	Reservoir Cap (mL)	Stopcock Bore (mm)	Case Qty.	Case Price
420620-0120	23	13 x 200	250	2	1	116.56
420620-0125	28	13 x 250	250	2	1	120.81
420620-0130	34	13 x 300	250	2	1	129.35
420620-0320	90	25 x 200	250	2	1	140.71
420620-0325	100	25 x 250	250	2	1	150.65
420620-0330	136	25 x 300	250	2	1	159.18
420620-0350	245	25 x 500	250	2	1	199.38
420620-0420	227	38 x 200	500	2	1	158.89
420620-0425	280	38 x 250	500	2	1	150.65
420620-0430	340	38 x 300	500	2	1	169.13
420620-0450	560	38 x 500	500	2	1	196.14
420620-0520	360	50 x 200	500	2	1	190.20
420620-0530	590	50 x 300	1000	2	1	214.62
420620-0550	980	50 x 500	1000	2	1	235.91
420620-0560	1180	50 x 600	1000	2	1	253.00
420620-0620	643	64 x 200	1000	4	1	215.40
420620-0630	965	64 x 300	1000	4	1	244.45
420620-0650	1600	64 x 500	2000	4	1	261.51
420620-0660	1920	64 x 600	2000	4	1	277.14
420620-0720	883	75 x 200	2000	4	1	268.31
420620-0730	1290	75 x 300	2000	4	1	292.79
420620-0750	2140	75 x 500	2000	4	1	341.11
420620-0760	2580	75 x 600	2000	4	1	366.70
420620-5000	Column Start Up Kit, contains one each of the following Columns sizes 0130, 0330, 0350, 0430, 0450, and two 420575-2440 Flow Adapters.				1	904.55

Replacement Parts

821001-0002	Stopcock Plug only, 2 mm	1	12.03
821001-0004	Stopcock Plug only, 4 mm	1	13.81

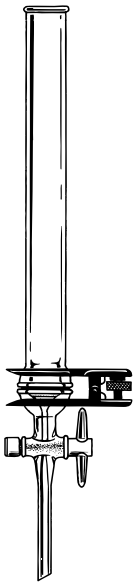
Column, with Removable Fritted Disc and PTFE Stopcock Plug

Column with a removable coarse fritted disc features minimal dead space to eliminate the possible remixing of eluted components. Complete set-up consists of a column barrel, a stopcock adapter with a size 2 PTFE plug, 821001-0002, two ethylene propylene (EP) o-rings and a pinch clamp.

Kontes Article No.	Column I.D. x Length (mm)	Nominal Column Vol. (mL)	O-Ring Size	Case Qty.	Case Price
422230-2512	12 x 250	25	116	1	174.81
422230-2520	20 x 250	75	120	1	190.46
422230-2525	25 x 250	110	124	1	190.46
422230-5012	12 x 500	25	116	1	177.65
422230-5020	20 x 500	150	120	1	193.29
422230-5025	25 x 500	225	124	1	197.57

Component Parts

422231-2512	Column Barrel Only, 12 x 250 mm	1		25.58
422231-2520	Column Barrel Only, 20 x 250 mm	1		28.56
422231-2525	Column Barrel Only, 25 x 250 mm	1		29.84
422231-5012	Column Barrel Only, 12 x 500 mm	1		28.56
422231-5020	Column Barrel Only, 20 x 500 mm	1		32.96
422231-5025	Column Barrel Only, 25 x 500 mm	1		36.11
422380-0012	Stopcock Adapter for 12 mm Column	1		98.07
422380-0020	Stopcock Adapter for 20 mm Column	1		102.69
422380-0025	Stopcock Adapter for 25 mm Column	1		102.69
952050-0012	Fritted Disc, Coarse Porosity, for 12 mm Column	1		32.96
952050-0020	Fritted Disc, Coarse Porosity, for 20 mm Column	1		38.24
952050-0025	Fritted Disc, Coarse Porosity, for 25 mm Column	1		38.24
675000-0028	Pinch Clamp, Size 28, for 12 mm Column	1		16.08
675000-0035	Pinch Clamp, Size 35, for 20 and 25 mm Columns	1		19.36
758292-0116	EP O-Ring, Size 116, for 12 mm Column, Pkg./10	10		40.23
758292-0120	EP O-Ring, Size 120, for 20 mm Column, Pkg./10	10		45.64
758292-0124	EP O-Ring, Size 124, for 25 mm Column, Pkg./10	10		47.87



422230

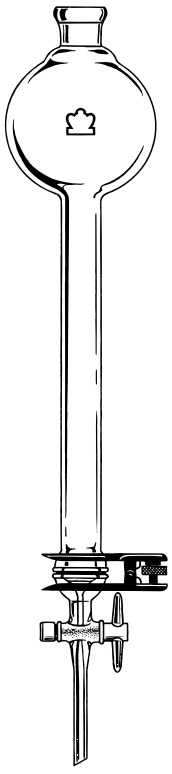
Column, with Reservoir and Removable Fritted Disc

Column with removable coarse fritted disc features minimal dead space to eliminate the possible remixing of eluted components. Integral, spherical reservoir at the top of the column for eluting solvent. Complete set-up consists of a column, a stopcock adapter with a size 2 PTFE plug, 821001-0002, two ethylene propylene (EP) o-rings and a pinch clamp.

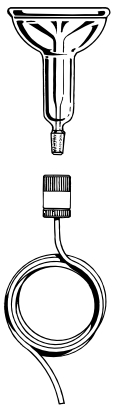
Kontes Article No.	Column I.D. x Length (mm)	Nominal Col. Vol. (mL)	Reservoir Cap. (mL)	O-Ring Size	Case Qty.	Case Price
422250-2512	12 x 250	25	125	116	1	206.07
422250-2520	20 x 250	75	250	120	1	220.31
422250-2525	25 x 250	120	500	124	1	223.14

Component Parts

422251-2512	Column Only, 12 x 250 mm	1		55.00
422251-2520	Column Only, 20 x 250 mm	1		60.11
422251-2525	Column Only, 25 x 250 mm	1		63.68
422380-0012	Stopcock Adapter for 12 mm Column	1		98.07
422380-0020	Stopcock Adapter for 20 mm Column	1		102.69
422380-0025	Stopcock Adapter for 25 mm Column	1		102.69
952050-0012	Fritted Disc, Coarse Porosity, for 12 mm Column	1		32.96
952050-0020	Fritted Disc, Coarse Porosity, for 20 mm Column	1		38.24
952050-0025	Fritted Disc, Coarse Porosity, for 25 mm Column	1		38.24
675000-0028	Pinch Clamp, Size 28, for 12 mm Column	1		16.08
675000-0035	Pinch Clamp, Size 35, for 20 and 25 mm Columns	1		19.36
758292-0116	EP O-Ring, Size 116, for 12 mm Column, Pkg./10	10		40.23
758292-0120	EP O-Ring, Size 120, for 20 mm Column, Pkg./10	10		45.64
758292-0124	EP O-Ring, Size 124, for 25 mm Column, Pkg./10	10		47.87



422250

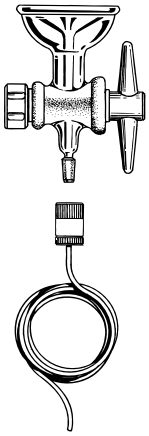


422370

Adapter, with Fritted Disc Ledge, Luer Joint

Adapter is useful in making transfers from various columns and for minimizing dead space. Adapter has a ledge for a 952050 fritted disc (not included). Luer joint on the delivery tip. Supplied with an ethylene propylene (EP) o-ring, and one female luer CTFE hub with a 5' length of .038" I.D. PTFE tubing.

Kontes Article No.	For Column I.D. (mm)	O-Ring Size	Approx. Overall Length (mm)	Case Qty.	Case Price
422370-0012	12	116	60	1	86.70
422370-0020	20	120	50	1	88.47
422370-0025	25	124	60	1	88.47
Replacement Parts					
422371-0012	Adapter Only, Size 12			1	59.26
422371-0020	Adapter Only, Size 20			1	61.39
422371-0025	Adapter Only, Size 25			1	61.39
H90669-0005	CTFE Hub and 5' of 0.038" I.D. PTFE Tubing, Pkg./5			5	142.14

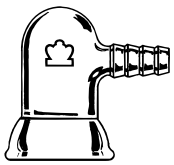


422390

Adapter, with Fritted Disc Ledge, Luer Joint, PTFE Stopcock Plug

Adapter is useful in making transfers from various columns and for minimizing dead space. Adapter has a ledge for a 952050 fritted disc (not included). Luer joint on delivery tip. Supplied with an ethylene propylene (EP) o-ring, and one female luer CTFE hub with a 5' length of .038" I.D. PTFE tubing. Size 2 PTFE plug, 821001-0002 controls flow.

Kontes Article No.	For Column I.D. (mm)	O-Ring Size	Stopcock Size	Approx. Overall Length (mm)	Case Qty.	Case Price
422390-0012	12	116	2	75	1	150.65
422390-0020	20	120	2	75	1	154.92
422390-0025	25	124	2	80	1	154.92
Replacement Parts						
422391-0012	Adapter Only, Size 12				1	116.20
422391-0020	Adapter Only, Size 20				1	119.75
422391-0025	Adapter Only, Size 25				1	126.15
H90669-0005	CTFE Hub and 5' of 0.038" I.D. PTFE Tubing, Pkg./5				5	142.14

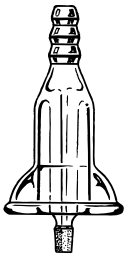


422420

Adapter, Column Top

Adapter with a hose connection for use at the top of the 422440 column extenders. One EP o-ring is included.

Kontes Article No.	For Column I.D. (mm)	Size	Stopcock Size	Approx. Overall Length (mm)	Case Qty.	Case Price
422420-0012	12	116	#1	40	1	32.96
422420-0020	20	120	#2	50	1	34.98
422420-0025	25	124	#2	50	1	34.98

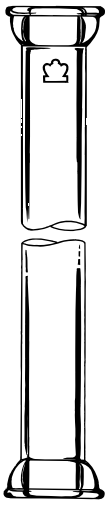


422425

Adapter, Column Top, Gradient Feed

Suitable for gradient feed into a closed system of columns such as 422440 when used with gradient elution apparatus 424000. Luer tip connects a PTFE needle to bring gradient directly to top surface of column. One EP o-ring is included.

Kontes Article No.	For Column I.D. (mm)	O-Ring Size	Hose Connection	Case Qty.	Case Price
422425-0012	12	116	#1	1	50.90
422425-0020	20	120	#1	1	53.89
422425-0025	25	124	#1	1	55.00



422440

Extender

Column extenders for 422230 and 422250 columns. Two EP o-rings are included.

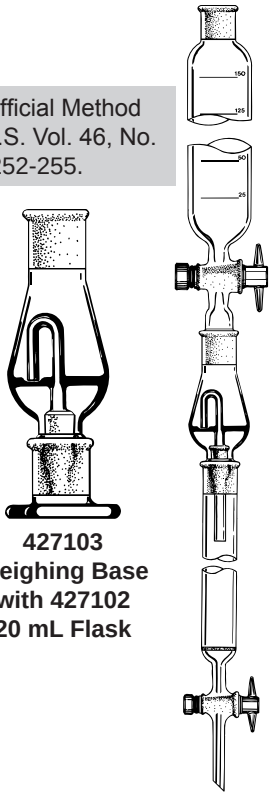
Kontes Article No.	Column I.D. x Length (mm)	O-Ring Size	Case Qty.	Case Price
422440-1512	12 x 150	116	1	45.63
422440-2512	12 x 250	116	1	46.46
422440-5012	12 x 500	116	1	48.74
422440-1520	20 x 150	120	1	48.74
422440-2520	20 x 250	120	1	50.90
422440-5020	20 x 500	120	1	55.00
422440-1525	25 x 150	124	1	50.90
422440-2525	25 x 250	124	1	51.87
422440-5025	25 x 500	124	1	57.29

Column, Neutral Oil and Loss

Apparatus for the determination of total neutral oil of natural fats and oils consisting of triglycerides and unsaponifiable matter. Unique design of the flask allows the transfer of the weighed sample directly onto the column. Free fatty acids and miscellaneous non-fat substances are removed by passing the sample through a column of activated alumina. Losses are then calculated. Supplied complete, as shown. Stopcocks have PTFE plugs and the column has a coarse porosity fritted disc. Joints are ⅋ 19/22 except for the extension tube which is ⅋ 7/25.

Kontes Article No.	Solvent Reservoir Cap. (mL)	Column I.D. x Length (mm)	Approx. Overall Height (mm)	Case Qty.	Case Price
427100-0000	175	19 x 270	320	1	371.83
Component Parts					
427101-0000	Solvent Reservoir, 175 mL			1	89.01
427102-0000	Flask, 20 mL			1	140.51
427103-0000	Weighing Base			1	19.18
427104-0000	Extension Tube			1	16.42
427105-0000	Column Only, 19 x 270 mm			1	122.52
Replacement Parts					
821001-0002	For 427105-0000			1	12.03
821001-0004	For 427101-0000			1	13.81

Ref: O.A.C.S. Official Method Ca9f-57, J.A.O.C.S. Vol. 46, No. 5, Pages 252-255.



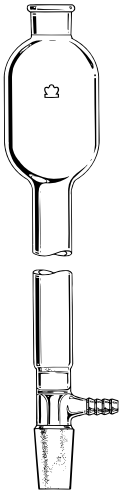
427103 Weighing Base with 427102 20 mL Flask

427100

Column, Pesticide Analysis with ⅋ Joint

For pesticide/herbicide residue analysis. Top is tooled for a #3 rubber stopper. Lower ⅋ 24/40 inner joint allows a variety of flasks for eluant collection. Vacuum connection for 3/8" I.D. tubing is provided on the lower end. Coarse fritted disc is sealed in.

Kontes Article No.	Column I.D. Length (mm)	Column Vol. (mL)	Reservoir Vol. (mL)	Approx. Overall Length (mm)	Case Qty.	Case Price
420600-0000	22 x 330	125	200	520	1	154.92

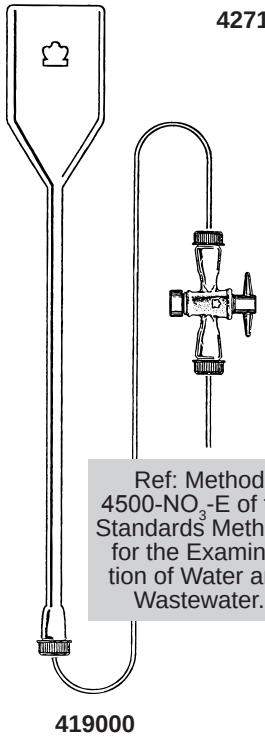


420600

Column, Cadmium Reduction, BEVEL-SEAL™ Connections

This column features all borosilicate glass construction with an 85 mL reservoir. The glass wool plug and PTFE tubing at the bottom of the column are held securely in place by a BEVEL-SEAL connection. This facilitates easy cleaning and assembly. The PTFE BEVEL-SEAL stopcock connector is included as a metering valve to control flow rate. Stopcock has a 821001-0002 plug (glass wool not included).

Kontes Article No.	Reservoir Capacity (mL)	Approx. Overall Height (mm)	Case Qty.	Case Price
419000-8505	85	350	1	138.89
Component Parts				
419001-8505	Cadmium Reduction Column Only		1	51.34
179740-0505	BEVEL-SEAL Stopcock Connector, 5 to 5 mm		1	84.98
420823-0018	FEP PTFE, 1/8", Pkg./10" (10" supplied)		1	29.28



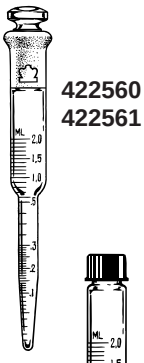
Ref: Method 4500-NO_3-E of the Standards Methods for the Examination of Water and Wastewater.

419000

Chromatography Sample Tube, with Flat Head ⅋ Stopper

Design allows total access to the sample via a microliter syringe needle. 422560 is supplied with an 850550-1018 flat head stopper. 422561 supplied without stopper.

Kontes Article No.	Capacity (mL)	⅋ Joint	Approx. Body O.D. (mm)	Grad. x Subdiv. (mL)	Approx. Overall Height (mm)	Case Qty.	Case Price
422560-0000	2	10/18	13	0-0.3 x 0.01,	118	1	60.11
Replacement Parts							
850550-1018	Stopper, ⅋ 10/18					1	11.35

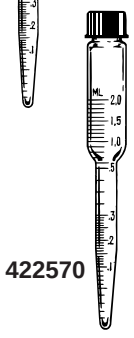


422560
422561

Chromatography Sample Tube, with Screw Cap

Design allows access to the sample via a microliter syringe needle through the hole in the PTFE-lined screw cap.

Kontes Article No.	Capacity (mL)	GPI Thread	Approx. Body O.D. (mm)	Grad.x Subdiv. (mL)	Approx. Overall Height(mm)	Case Qty.	Case Price
422570-0000	2	13-425	14	0-0.3 x 0.01	105	1	45.63
Replacement Parts							
410116-1325	Screw Cap					48	6.48



422570

ULTRA-WARE® HPLC Five Valve Cap Systems

HI-VAC™ VALVE
Easy to open vacuum valve. Provides higher solvent flow than standard stopcock. When closed, allows vacuum degassing of mobile phase.

SOLVENT PICKUP ADAPTER
Provides safe, in-line filtration that replaces the tedious pour-and-wait method of funnel filtration apparatus.

VACUUM / VENT VALVE
Vacuum valve during filtration; vent valve during sparging. When closed, allows the reservoir to be pressurized to helium "blanket" the mobile phase and improve pump check valve operation.

SPARGE VALVE
On-Off valve for helium sparge gas. Integral check valve in cap body prevents solvent backflow into helium gas line.

GLASS FILLED PTFE BODY
Solvent resistant; autoclavable; stronger threads than PTFE alone. Integral pressure release valve prevents the reservoir system from being accidentally over-pressurized.

1/4-28 TUBING CONNECTIONS
Allow simple, easy connection to any HPLC pump system. All of the connections are made in the back of the cap, reducing the typical "spaghetti" clutter of tubing at the reservoirs.

ULTRA-WARE RESERVOIR
Patented conical bottom design delivers virtually all of the mobile phase without dangerous reservoir tilting.



BEVEL-SEAL™ CONNECTOR
Quick and easy-to-use vacuum tight connection.

UPPER SCREW CLAMP
Clamps the solvent pickup adapter and a membrane filter to the five valve cap.

RECIRCULATION VALVE
Allows isocratic mobile phase to be recirculated directly into the reservoir while maintaining the helium sparged environment.

PUMP VALVE
Seals the reservoir between HPLC runs.

FILTER VALVE
Seals the filtered mobile phase away from atmospheric gases and particulates after filtration is complete.

FRITTED GLASS FILTER SUPPORT
Removable for easy cleaning and replacement.

LOWER SCREW CLAMP
Clamps the five valve cap to ULTRA-WARE reservoirs or any bottle with a GL 45-4 threaded neck. Allows the cap to be removed without twisting the connected tube.

PLASTIC SAFETY COATING
The autoclavable plastic coating absorbs virtually all UV up to 385 nm to preserve UV-sensitive mobile phase components. In case of an accident, the safety coating helps retain glass fragments and allows a reasonable amount of time for the safe disposal of the liquid contents.

Patent No. 5,397,467

Recirculates isocratic mobile phase directly into the reservoir while maintaining the helium sparged environment, reducing the cost of mobile phase purchase and disposal.

Filters directly into the reservoir, eliminating the transfer of mobile phase,therefore reducing particulates that can damage pump seals and clog column frits.

Uses standard 47 mm diameter filter membranes. Optional base adapter allows the use of 90 mm diameter filter membranes, providing four times faster filtration.

Helium-tight valves and connections maximize the effectiveness of helium sparging while eliminating exposure to ambient air containers.

Sparge port check valve prevents mobile phase from backing up into the sparging gas lines, eliminating possible cross contamination between reservoirs.

Pressure release valve prevents the reservoir from being accidentally over-pressurized.

1/4-28 flangeless fittings and supplied adapters allow simple, easy connection to any HPLC pump system.

Tubing connections are made on back of cap, reducing the typical “spaghetti” clutter at the reservoirs.

Supplied with a Five Valve Cap (with coarse porosity glass support frit), Solvent Pickup Adapter, Conical Bottom Reservoir, Fittings Kit and FEP PTFE Tubing.

Patent No. 5,397,467



953963

Five Valve Cap System
Recommended for most solvents used for HPLC mobile phase. Not recommended for tetrahydrofuran (THF), chlorinated hydrocarbons, ethers or ketones.

Kontes Article No.	Reservoir Capacity	Approx. Height x Dia.	Case Qty.	Case Price
953963-1002	1 liter	432 x 130 mm	1	1,101.66
953963-2002	2 liter	512 x 150 mm	1	1,169.50
953963-5002	5 liter	592 x 205 mm	1	1,309.59
953963-1003	10 liter	602 x 255 mm	1	1,706.31

Need THF resistant systems? Please call toll-free for a quote: 888-546-2531



Close-Up of Five Valve Cap

ULTRA-WARE® HPLC Four Valve Cap Systems

HI-VAC™ VALVE
Easy to open vacuum valve. Provides higher solvent flow than standard stopcock. When closed, allows vacuum degassing of mobile phase.

SOLVENT PICKUP ADAPTER
Provides safe, in-line filtration that replaces the tedious pour-and-wait method of funnel filtration apparatus.

VACUUM / VENT VALVE
Vacuum valve during filtration; vent valve during sparging. When closed, allows the reservoir to be pressurized to helium "blanket" the mobile phase and improve pump check valve operation.

SPARGE VALVE
On-Off valve for helium sparge gas. Integral check valve in cap body prevents solvent backflow into helium gas line.

GLASS FILLED PTFE BODY
Solvent resistant; autoclavable; stronger threads than PTFE alone. Integral pressure release valve prevents the reservoir system from being accidentally over-pressurized.

ULTRA-WARE RESERVOIR
Patented conical bottom design delivers virtually all of the mobile phase without dangerous reservoir tilting.



BEVEL-SEAL™ CONNECTOR
Quick and easy-to-use vacuum tight connection.

UPPER SCREW CLAMP
Clamps the solvent pickup adapter and a membrane filter to the four valve cap.

PUMP VALVE
Seals the reservoir between HPLC runs.

FILTER VALVE
Seals the filtered mobile phase away from atmospheric gases and particulates after filtration is complete.

FRITTED GLASS FILTER SUPPORT
Removable for easy cleaning and replacement.

LOWER SCREW CLAMP
Clamps the four valve cap to ULTRA-WARE reservoirs or any bottle with a GL 45-4 threaded neck. Allows the cap to be removed without twisting the connected tube.

1/4-28 TUBING CONNECTIONS
Allow simple, easy connection to any HPLC pump system. All of the connections are made in the back of the cap, reducing the typical "spaghetti" clutter of tubing at the reservoirs.

PLASTIC SAFETY COATING
The autoclavable plastic coating absorbs virtually all UV up to 385 nm to preserve UV-sensitive mobile phase components. In case of accident, the safety coating helps retain glass fragments and allows a reasonable amount of time for the safe disposal of the liquid contents.

Patent No. 5,397,467

Totally integrated systems for stepwise filtration, degassing, storage and delivery of HPLC mobile phases.

Filters directly into the reservoir, eliminating the transfer of mobile phase, therefore reducing particulates that can damage pump seals and clog column frits.

Uses standard 47 mm diameter filter membranes. Optional base adapter allows the use of 90 mm diameter filter membranes, providing four times faster filtration.

Helium-tight valves and connections maximize the effectiveness of helium sparging while eliminating exposure to ambient air containers.

Sparge port check valve prevents mobile phase from backing up into the sparging gas lines, eliminating possible cross contamination between reservoirs.

Pressure release valve prevents the reservoir from being accidentally over-pressurized.

1/4-28 flangeless fittings and supplied adapters allow simple, easy connection to any HPLC pump system.

Tubing connections are made on back of cap, reducing the typical “spaghetti” clutter at the reservoirs.

Supplied with a Four Valve Cap (with coarse porosity glass support frit), Solvent Pickup Adapter, Conical Bottom Reservoir, Fittings Kit and FEP PTFE Tubing.

Patent No. 5,397,467



953943

Four Valve Cap System

Recommended for most solvents used for HPLC mobile phase. Not recommended for tetrahydrofuran (THF), chlorinated hydrocarbons, ethers or ketones.

Kontes Article No.	Reservoir Capacity	Approx. Height x Dia.	Case Qty.	Case Price
953943-1002	1 liter	432 x 130 mm	1	1,042.68
953943-2002	2 liter	512 x 150 mm	1	1,109.03
953943-5002	5 liter	592 x 205 mm	1	1,250.60
953943-1003	10 liter	602 x 255 mm	1	1,645.83

Need THF resistant systems? Please call toll-free for a quote: 888-546-2531



Close-Up of Four Valve Cap

KONTES
custom glass shop
*call toll-free **800-682-6644***
customglass@kimble-chase.com

Contact the **Kontes Custom Glass Shop** at KIMBLE CHASE for modifications of standard products or fabrication of your unique designs. And when it comes to repairs, we can save you up to 75% of the cost of a new item. Save an additional 10% on repairs of Kontes or Kimble Brand products. Fax your requirements to **856-692-6644**.

- **Custom Fabrications**
- **Quality Repairs**
- **Modifications of All Kinds**
- **No Order Too Small**
- **Quick Turnaround**



953971
Sparging / Delivery



Filtration

Modular system that maximizes mobile phase preparation time at the lowest possible cost.

Separate caps for performing filtration and sparging/delivery.

Filtration/vacuum degassing can be performed at one central location with prepared mobile phase delivered directly to HPLC stations.

Filtration Cap is specially designed to filter HPLC mobile phase directly into the reservoir using 47 mm membrane filters.

Vacuum degassing is accomplished by closing the Hi-Vac valve on the Solvent Pickup Adapter.

Three Hole Cap is used to helium sparge and deliver the mobile phase to the pump system.

Helium tight seals maximize sparging efficiency.

1/4-28 fittings and adapters are supplied to allow simple, easy connection to any HPLC pump system.

Supplied with Filtration Cap (with coarse porosity glass support frit), standard Solvent Pickup Adapter, Three Hole Cap, Conical Bottom Reservoir, standard Fittings Kit and FEP PTFE Tubing.

Patent No. 5,397,467

Filtration / Delivery System

Recommended for most solvents used for HPLC mobile phase. Caps and solvent pickup adapter o-rings and solvent inlet filters must be changed when using tetrahydrofuran (THF) or other aggressive solutions.

Kontes Article No.	Reservoir Capacity	Approx. Height x Dia.	Case Qty.	Case Price
953971-1002	1 liter	400 x 130 mm	1	909.94
953971-2002	2 liter	480 x 150 mm	1	968.93
953971-5002	5 liter	560 x 205 mm	1	1,092.81
953971-1003	10 liter	570 x 255 mm	1	1,480.66

Specially designed to filter HPLC mobile phase directly into the reservoir using 47 mm membrane filters.

Optional Conversion Base allows the use of 90 mm membrane filters for large volume, preparative scale filtration or filtering mobile phase with high particulate loads.

Borosilicate glass and PTFE construction gives excellent chemical resistance to all HPLC mobile phases.

Cap body is constructed from glass-filled PTFE and is supplied with a TFE/propylene o-ring.

In-line filtration with Solvent Pickup Adapter that eliminates traditional pour-and-wait filtration.

1/4" PFA (perfluoroalkoxy resin) hose barb for easy connection to a vacuum source.

Vacuum degassing is accomplished by closing the Hi-Vac valve on the Solvent Pickup Adapter.

Supplied with a Filtration Cap (with coarse porosity glass support frit), standard Solvent Pickup Adapter and Conical Bottom Reservoir.

Patent No. 5,397,467



953976 Filtration

FILTRATION CAP SYSTEM

Recommended for most solvents used for HPLC mobile phase. O-rings in the solvent pickup adapter must be changed when using tetrahydrofuran (THF) or other aggressive organic solutions.

Kontes Article No.	Reservoir Capacity	Approx. Height x Dia.	Case Qty.	Case Price
953976-1002	1 liter	400 x 130 mm	1	578.10
953976-2002	2 liter	480 x 150 mm	1	647.43
953976-5002	5 liter	560 x 205 mm	1	786.06
953976-1003	10 liter	570 x 255 mm	1	1,227.01

FILTRATION CAP with PICKUP ADAPTER ONLY

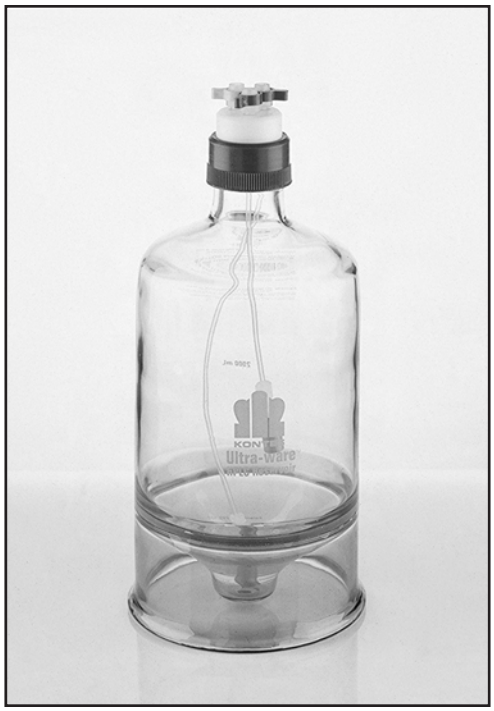
Same as above but without reservoir.

Kontes Article No.	Description	Case Qty.	Case Price
953915-1047	Standard Version without reservoir	1	442.44
953915-2047	THF-Resistant without reservoir	1	522.06



Close-Up of Filtration Cap without Solvent Pickup Adapter in place.

ULTRA-WARE® HPLC Three Valve Cap Systems



953925
953931



Close-Up of
Three Valve Cap

Provides on-off control for all three ports of the reservoir cap.

Helium-tight valves maintain the mobile phase in a sealed environment between runs.

Port on each valve and the connecting threads on the bottom of the cap use 1/4-28 fittings.

Cap body is manufactured from PTFE, while the color-coded valves are made of CTFE with TFE/propylene o-rings (standard version) or stainless steel with FFKM o-rings (THF-resistant version).

1/4-28 flangeless fittings and adapters are supplied to allow simple, easy connection to any HPLC pump system.

Filtration of the mobile phase directly into the reservoir requires the separate purchase of the Filtration Cap and appropriate Solvent Pickup Adapter.

Available in both standard and THF-resistant versions.

Supplied with a Three Valve Cap, Conical Bottom Reservoir, Fittings Kit and FEP PTFE Tubing.

Patent No. 5,397,467

Three Valve Cap System
Recommended for most solvents used for HPLC mobile phase. Not recommended for tetrahydrofuran (THF), chlorinated hydrocarbons, ethers or ketones.

Kontes Article No.	Reservoir Capacity	Approx. Height x Dia.	Case Qty.	Case Price
953925-1002	1 liter	305 x 130 mm	1	564.85
953925-2002	2 liter	385 x 150 mm	1	637.11
953925-5002	5 liter	465 x 205 mm	1	778.68

THF-Resistant Three Valve Cap System
Recommended when using tetrahydrofuran (THF), chlorinated hydrocarbons, ethers or ketones.

Kontes Article No.	Reservoir Capacity	Approx. Height x Dia.	Case Qty.	Case Price
953931-1002	1 liter	305 x 130 mm	1	1,039.71
953931-2002	2 liter	385 x 150 mm	1	1,113.45
953931-5002	5 liter	465 x 205 mm	1	1,255.03

Accessory Filtration Cap with Pickup Adapter Only

Kontes Article No.	Description	Case Qty.	Case Price
953915-1047	Standard Version without reservoir	1	442.44
953915-2047	THF-Resistant without reservoir	1	522.06

The most economical way to helium sparge and deliver HPLC mobile phase.

Borosilicate glass and PTFE construction give excellent chemical resistance to all HPLC mobile phases.

Connecting threads on top and bottom of the cap use 1/4-28 fittings.

Cap body is manufactured from PTFE and is supplied with a TFE/propylene o-ring. A FFKM o-ring is available when using aggressive organic solutions.

1/4-28 flangeless fittings and adapters are supplied to allow simple, easy connection to any HPLC pump system.

Filtration of the mobile phase directly into the reservoir requires the additional purchase of the Filtration Cap and appropriate Solvent Pickup Adapter.

Supplied with Three Hole Cap, Conical Bottom Reservoir, standard Fittings Kit and FEP PTFE Tubing.

Patent No. 5,397,467



953980



Close-Up of Three Hole Cap

Three Hole Cap System

Recommended for most solvents used for HPLC mobile phase. Cap o-ring and inlet filters must be changed when using tetrahydrofuran (THF) or other aggressive organic solutions.

Kontes Article No.	Reservoir Capacity	Approx. Height x Dia.	Case Qty.	Case Price
953980-0252	250 mL	245 x 85 mm	1	331.84
953980-0502	500 mL	255 x 105 mm	1	348.04
953980-1002	1 liter	290 x 130 mm	1	392.29
953980-2002	2 liter	370 x 150 mm	1	479.31
953980-5002	5 liter	450 x 205 mm	1	641.53
953980-1003	10 liter	460 x 255 mm	1	1,007.28
953980-2003	20 liter	540 x 315 mm	1	1,445.27

Accessory Filtration Cap with Pickup Adapter Only

Kontes Article No.	Description	Case Qty.	Case Price
953915-1047	Standard Version without reservoir	1	442.44
953915-2047	THF-Resistant without reservoir	1	522.06

ULTRA-WARE® HPLC Economy Cap Systems



Close-up of Economy Three Hole Cap

953930

The cap body is manufactured from PTFE and is supplied with a TFE/propylene o-ring and a polypropylene screw collar. The connecting threads on the top of the cap use standard 1/4-28 flangeless fittings. Two of the ports have 1/8" through holes, the third port has a 1/16" through hole. Assembly instructions included.

The ULTRA-WARE Flat Bottom Reservoirs are manufactured from Type I, Class A borosilicate glass with a plastic safety coating. The plastic coating also blocks virtually all UV light up to 385 nm, preventing photodegradation of light sensitive mobile phases.

Economy Three Hole Cap Systems are supplied with:

953913-5000	1 ea.	Economy 3-Hole Cap	420822-0018	2 ea.	Flangeless Ferrule, ETFE, 1/8"
953902-series	1 ea.	Ultra-Ware Flat Bottom Reservoir	953913-0001	1 ea.	Nut Plug, ETFE, 1/4-28
953916-3002	1 ea.	All PEEK Inlet/Sparge Filter, 2µm	420823-0018	1 ea.	FEP PTFE Tubing,
420821-0018	2 ea.	Flangeless Nut, ETFE, 1/4-28. 1/8"			1/8" O.D. x 1/16" I.D. x 10

Kontes Article No.	Description	Case Qty.	Case Price
953930-1002	Economy 3-Hole Cap System with 1 Liter Reservoir	1	197.62
953930-2002	Economy 3-Hole Cap System with 2 Liter Reservoir	1	221.21
953930-5002	Economy 3-Hole Cap System with 5 Liter Reservoir	1	379.02
953930-1003	Economy 3-Hole Cap System with 10 Liter Reservoir	1	474.87

Replacement Parts for Economy Three Hole Caps

953913-5000	Replacement Economy 3-Hole Cap	1	43.51
953913-5001	Body, PTFE	1	33.19
953913-5005	Screw Collar, Polypropylene	1	16.94

Fittings Kit

Kit consists of 20' of 1/8" OD FEP PTFE tubing, 20 CTFE ferrules and 20 (1/4"-28) ETFE nuts. Not pictured.

Kontes Article No.	Case Qty.	Case Price
953882-0000	1	208.93

SAFETY 1st



Safety System 3

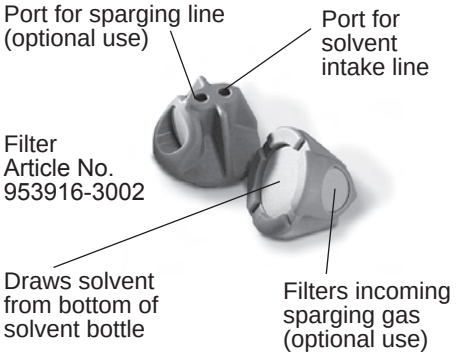
Eliminates the safety hazards of aluminum foil-wrapped solvent containers.

- This unique Solvent Bottle Adapter is made from PBT and converts ULTRA-WARE® GL-45 mobile phase caps to standard 4L solvent bottles for direct connection to your HPLC pump.
- ULTRA-WARE® Economy Three Hole Cap is manufactured from PTFE with a TFE/propylene o-ring and a polypropylene screw collar. Three connecting threads on top of the cap use standard 1/4-28 flangeless fittings. Two ports have 1/8" through-holes for connection to the inlet / sparge filter. The third port has a 1/16" through-hole used as a vent port during sparging.

Each Safety System 3 consists of the following:

953913-5000	1 ea.	Economy 3-Hole Cap, GL-45
953907-0000	1 ea.	Solvent Bottle Adapter, GL-45 (Systems available with or without adapter. See below.)
953916-3002	1 ea.	Combination Inlet / Sparge Filter, 2µm, PEEKTM
420821-0018	2 ea.	Flangeless Nut, ETFE, 1/4-28 x 1/8" (2 Req'd)
420822-0018	2 ea.	Flangeless Ferrule, ETFE, 1/8" (Optional - 2 Req'd)
953913-0001	1 ea.	Vent Port Plug, ETFE, 1/4-28 (1 Req'd)
420823-0018	1 ea.	Tubing, FEP PTFE, 1/8" O.D. x 1/16" I.D. x 10'

Kontes Article No.	Description	Price
953930-0000	Safety System 3 with GL-45 Bottle Adapter	158.51
953930-0001	Safety System 3 without GL-45 Bottle Adapter	107.11



Unique Filter Combines Functions to Increase Efficiency

Included with your Safety System 3 is the unique Bottom-of-the-Bottle™ Inlet / Sparge Filter. This component combines the functions of an inlet filter with a sparger in a single, convenient device. Sparging bubbles are prevented from entering the mobile phase stream while allowing the pump to draw all but a few milliliters of solvent from the reservoir or bottle. All PEEK construction makes it ideal for virtually all mobile phases. Supplied with 2µm porosity frits and connections for 1/8" O.D. tubing.

Reservoir, Conical Bottom, Plastic-Coated, ULTRA-WARE®

ULTRA-WARE Reservoirs have been specially designed for the preparation, storage and delivery of all liquid chromatography mobile phases. Each ULTRA-WARE Reservoir is manufactured from the most chemically inert glass available to prevent the leaching of any extractables into the mobile phase solvents. They are then externally coated with a safety plastic with an added ultraviolet (UV) blocking agent. In case of an accident, the plastic safety coating helps retain glass fragments and allows a reasonable amount of time for the safe disposal of the liquid contents. The plastic coating also blocks virtually all UV light up to 385 nm, preventing photo-degradation of light sensitive reagents.

ULTRA-WARE Reservoirs are recommended for use under vacuum for filtration and vacuum degassing of mobile phase solvents. ULTRA-WARE Reservoirs can also be used at internal pressures up to 6 psig for helium sparging and blanketing of the mobile phase. The conical bottom reservoirs deliver virtually all of the mobile phase without dangerous reservoir tilting. All ULTRA-WARE Reservoirs are supplied with GL 45-4 screw thread. *Patent No. Des. 292,824



953901

HPLC RESERVOIR, CONICAL BOTTOM, Without Graduations

Kontes Article No.	Capacity	Approx. Overall Height x Dia.	Case Qty.	Case Price
953901-0252	250 mL	203 x 85 mm	1	101.03
953901-0502	500 mL	230 x 105 mm	1	127.94
953901-1002	1 liter	275 x 130 mm	1	147.48
953901-2002	2 liter	319 x 150 mm	1	227.12
953901-5002	5 liter	373 x 205 mm	1	392.29
953901-1003	10 liter	433 x 255 mm	1	909.94
953901-2003	20 liter	578 x 315 mm	1	1,501.31

HPLC RESERVOIR, CONICAL BOTTOM, With Graduations

Kontes Article No.	Capacity	Approx. Overall Height x Dia.	Case Qty.	Case Price
953922-0252	250 mL	203 x 85 mm	1	106.18
953922-0502	500 mL	230 x 105 mm	1	132.73
953922-1002	1 liter	275 x 130 mm	1	162.23
953922-2002	2 liter	319 x 150 mm	1	233.01
953922-5002	5 liter	373 x 205 mm	1	398.19
953922-1003	10 liter	433 x 255 mm	1	921.74
953922-2003	20 liter	578 x 315 mm	1	1,511.65



953902

HPLC RESERVOIR, CONICAL BOTTOM, With Side Necks & Graduations

Side neck allows addition of filtered solvent without removing delivery cap.

Kontes Article No.	Capacity	Approx. Overall Height x Dia.	Case Qty.	Case Price
953910-2002	2 liter	319 x 150 mm	1	338.32
953910-5002	5 liter	373 x 205 mm	1	503.80
953910-1003	10 liter	433 x 255 mm	1	888.72
953910-2003	20 liter	578 x 315 mm	1	1,576.03

HPLC RESERVOIR, FLAT BOTTOM, Without Graduations

Kontes Article No.	Capacity	Approx. Overall Height x Dia.	Case Qty.	Case Price
953902-0252	250 mL	133 x 73 mm	1	59.43
953902-0502	500 mL	165 x 89 mm	1	73.14
953902-1002	1 liter	205 x 111 mm	1	102.13
953902-2002	2 liter	250 x 138 mm	1	130.53
953902-5002	5 liter	320 x 186 mm	1	292.01
953902-1003	10 liter	400 x 234 mm	1	412.93
953902-2003	20 liter	490 x 300 mm	1	861.25

HPLC RESERVOIR, FLAT BOTTOM, With Graduations

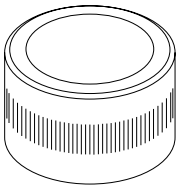
Kontes Article No.	Capacity	Approx. Overall Height x Dia.	Case Qty.	Case Price
953932-0252	250 mL	133 x 73 mm	1	66.37
953932-0502	500 mL	165 x 89 mm	1	88.49
953932-1002	1 liter	205 x 111 mm	1	110.62
953932-2002	2 liter	250 x 138 mm	1	135.68
953932-5002	5 liter	320 x 186 mm	1	302.35
953932-1003	10 liter	400 x 234 mm	1	423.28
953932-2003	20 liter	490 x 300 mm	1	870.12

Specifications
ULTRA-WARE HPLC Reservoirs

Materials:

Reservoir:	Type I, Class A, Borosilicate Glass
Plastic Coating:	PVC with UV blocking agent

Screw Thread: GL 45-4
Operating Pressure: -1.0 to 0.4 bar
UV Transmittance: <1% up to 385 nm



953908



953900

Vacuum / Pressure Bottle, 1000 mL

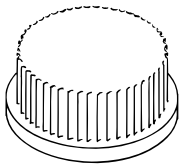
This laboratory bottle has been specially designed for use under vacuum and at pressures up to 1.5 bar (at a maximum of 140°C). This vacuum and pressure resistant bottle is manufactured from borosilicate glass with a GL 45 screw thread.

Kontes Article No.	Description	Case Qty.	Case Price
953900-0010	Bottle, Vacuum/Pressure, 1000 mL	1	34.81

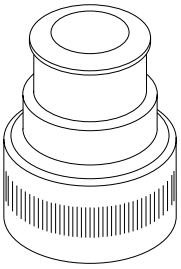
Storage Caps, GL 45

These caps fit any reservoirs or bottles with GL 45 screw threads. The PTFE cap provides the best possible seal. The hi-temp cap is polybutylene terepthalate (PBT) and will withstand up to 200°C hot air sterilization.

Kontes Article No.	Description	Case Qty.	Case Price
953908-0000	Cap, PTFE cap body, TFE/propylene o-ring, PP screw collar	1	113.35
953909-0000	Hi-Temp Cap, Red PBT cap body, PTFE-faced silicone rubber liner	1	10.10



953909

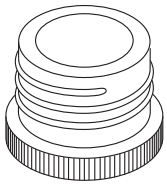


953905

Adapter, PTFE, GL 45 to ⅋40/35, ULTRA-WARE®

This adapter converts GL 45 threads to ⅋40/35 inner joints. This allows filter membrane support glassware with ⅋ 40/35 outer joints to be used on ULTRA-WARE HPLC reservoirs.

Kontes Article No.	Description	Case Qty.	Case Price
953905-0000	Adapter, PTFE, 45 mm to ⅋ 40/35	1	137.85

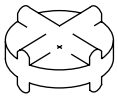


953907

Adapter, PBT, GL 45 to Solvent Bottle, ULTRA-WARE®

The GL-45 solvent bottle adapter is made from PBT and converts Ultra-ware GL-45 mobile phase caps to standard 4L solvent bottles for direct access to HPLC instruments.

Kontes Article No.	Description	Case Qty.	Case Price
953907-0000	Solvent Bottle Adapter	1	56.27

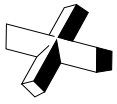


791180

Magnetic Stir Bar, Double-Finned, PTFE

Designed for use in cylindrical cavities. Special shape allows the stir bar to spin freely, unrestricted by the vessel contour.

Kontes Article No.	Approx. Overall Dia. x Height (mm)	Case Qty.	Case Price
791180-0021	19 x 17	1	17.54
791180-0022	25 x 19	1	18.31



791190

Magnetic Stir Bar, X-Shaped, PTFE

This PTFE-coated stirring bar provides superior mixing in the conical bottom HPLC reservoirs.

Kontes Article No.	Fits Reservoir Sizes	Dimensions	Case Qty.	Case Price
791190-0100	2 liter	1" x 1"	1	10.52
791190-0114	5, 10 and 20 liter	1 1/4" x 1 1/4"	1	11.93

Cap, Five Valve, Recirculation / Filtration, Standard, ULTRA-WARE®, Patent No. 5,397,467

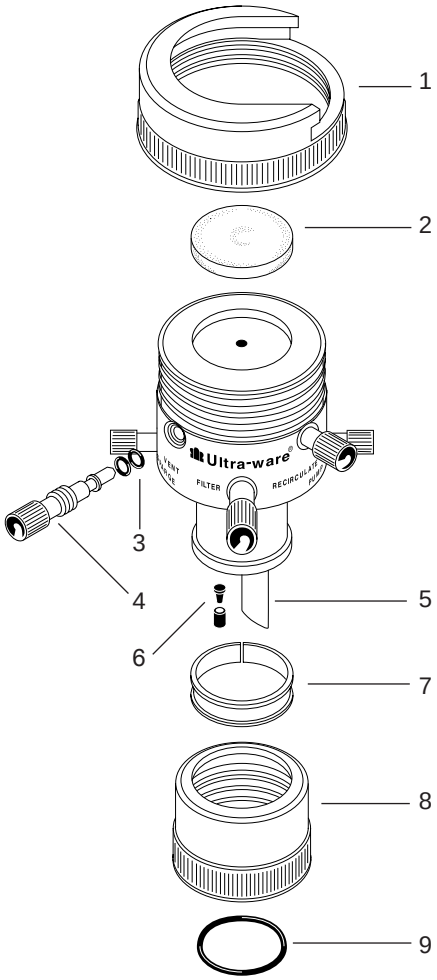
Specially designed to permit the recirculation of mobile phase back into the reservoir while maintaining the helium sparged environment. This cap also performs stepwise filtration, sparging/degassing, storage and delivery to the HPLC pump. An integral check valve prevents mobile phase from backing up into the gas lines. A pressure release valve protects the reservoir from being accidentally over-pressurized. The 1/4-28 fitting connections allow easy connection to any HPLC pump system. Cap body is manufactured from glass-filled PTFE. Cap will fit any reservoir or bottle with a GL 45 thread.

Kontes Article No.		Filter Diameter	Case Qty.	Case Price
953983-0047		47 mm	1	663.65
Replacement Parts				
953914-0002	(1), Upper Screw Clamp, 47 mm		1	40.47
953914-0001	(2), Coarse Porosity Glass Support Frit, 47 mm		1	36.11
758260-0008	(3), O-Ring, TFE/Propylene, Size 008 (2 required per Valve Stem)		1	11.51
953981-0001	(4), Valve Stem, CTFE, Short (for Sparge and Pump Ports)		1	24.93
953981-0002	(4), Valve Stem, CTFE, Long (for Filter, Vent and Recirculate Ports)		1	24.93
953914-0006	(5), Drip Tip, PTFE		1	15.19
953981-0003	(6), Check Valve with Retainer		1	16.67
953981-0004	(7), Lower Cap Retainer Ring		1	16.67
953981-0005	(8), Lower Screw Cap, GL 45		1	21.54
758292-0122	(9), O-Ring, Ethylene Propylene, Size 122, 10/Pkg.		10	46.83
Optional Parts				
953984-0090	90 mm Conversion Base		1	249.25
953906-0090	Pickup Adapter, Standard, 90 mm		1	213.85

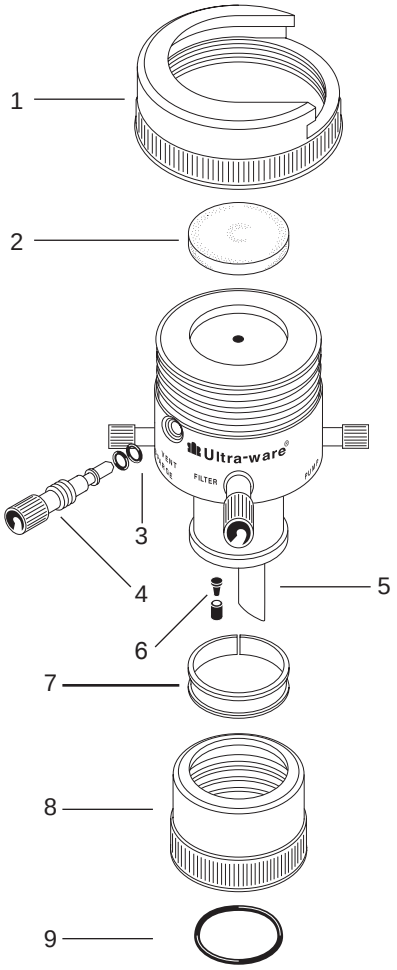
Cap, Five Valve, Recirculation / Filtration, THF-Resistant, ULTRA-WARE®, Patent No. 5,397,467

Tetrahydrofuran (THF), widely used as a mobile phase for GPC, attacks the CTFE valve stems and TFE/propylene o-rings used in the standard Five Valve Cap. This special THF-resistant version has 316 stainless steel wherever the standard system has CTFE, and FFKM o-rings in place of the TFE/propylene o-rings. This cap is also recommended for aggressive organic solutions such as chlorinated hydro-carbons, ethers, and ketones. Cap body is manufactured from glass-filled PTFE. Cap will fit any reservoir or bottle with a GL 45 thread.

Kontes Article No.		Filter Diameter	Case Qty.	Case Price
953983-6347		47 mm	1	1,201.94
Replacement Parts				
953914-0002	(1), Upper Screw Clamp, 47 mm		1	40.47
953914-0001	(2), Coarse Porosity Glass Support Frit, 47 mm		1	36.11
758240-0008	(3), O-Ring, FFKM, Size 008 (1 required per S.S. Valve Stem)		1	41.53
953981-6301	(4), Valve Stem, S.S., Short (for Sparge and Pump Ports)		1	57.95
953981-6302	(4), Valve Stem, S.S., Long (for Filter, Vent and Recirculate Ports)		1	57.95
953914-0006	(5), Drip Tip, PTFE		1	15.19
953981-0003	(6), Check Valve with Retainer		1	16.67
953981-0004	(7), Lower Cap Retainer Ring		1	16.67
953981-0005	(8), Lower Screw Cap, GL 45		1	21.54
758292-0122	(9), O-Ring, Ethylene Propylene, Size 122, 10/Pkg.		10	46.83
Optional Parts				
953984-0090	90 mm Conversion Base		1	249.25
953906-6390	Pickup Adapter, THF-Resistant, 90 mm		1	306.76



953983-0047
953983-6347



953981-0047
953981-6347

Cap, Four Valve, Filtration / Delivery, Standard, ULTRA-WARE® , Patent No. 5,397,467.

This cap combines the mobile phase filtration, sparging/degassing, storage and delivery functions. All tubing connections are made in the back of the cap, reducing the typical clutter of tubing at the reservoirs. An integral check valve in the sparge port prevents the mobile phase from backing up into the gas lines. A pressure release valve prevents the reservoir from being accidentally over-pressurized. The 1/4-28 fitting connections allow easy connection to any HPLC pump system. Cap body is manufactured from glass-filled PTFE. Cap will fit any reservoir or bottle with a GL 45 thread.

Kontes Article No.		Filter Diameter	Case Qty.	Case Price
953981-0047		47 mm	1	603.19
Replacement Parts				
953914-0002	(1), Upper Screw Clamp, 47 mm		1	40.47
953914-0001	(2), Coarse Porosity Glass Support Frit, 47 mm'		1	36.11
758260-0008	(3), O-Ring, TFE/Propylene, Size 008 (2 req'd. per CTFE Valve Stem)		1	11.51
953981-0001	(4), Valve Stem, CTFE, Short (for Sparge and Pump Ports)		1	24.93
953981-0002	(4), Valve Stem, CTFE, Long (for Filter and Vent Ports)		1	24.93
953914-0006	(5), Drip Tip, PTFE		1	15.19
953981-0003	(6), Check Valve with Retainer		1	16.67
953981-0004	(7), Lower Cap Retainer Ring		1	16.67
953981-0005	(8), Lower Screw Cap, GL 45		1	21.54
758292-0122	(9), O-Ring, Ethylene Propylene, Size 122, 10/Pkg.		10	46.83
Optional Parts				
953984-0090	90 mm Conversion Base		1	249.25
953906-0090	Pickup Adapter, Standard, 90 mm		1	213.85

Cap, Four Valve, Filtration / Delivery, THF-Resistant, ULTRA-WARE® , Patent No. 5,397,467.

Tetrahydrofuran (THF), widely used as a mobile phase for GPC, attacks the CTFE valve stems and TFE/propylene o-rings used in the standard Four Valve Cap. This special THF-resistant version has 316 stainless steel wherever the standard system has CTFE and FFKM o-rings in place of the TFE/propylene o-rings. This cap is also recommended for aggressive organic solutions such as chlorinated hydrocarbons, ethers and ketones. Cap body is manufactured from glass-filled PTFE. Cap will fit any reservoir or bottle with a GL 45 thread.

Kontes Article No.		Filter Diameter	Case Qty.	Case Price
953981-6347		47 mm	1	1,092.81
Replacement Parts				
953914-0002	(1), Upper Screw Clamp, 47 mm		1	40.47
953914-0001	(2), Coarse Porosity Glass Support Frit, 47 mm		1	36.11
758240-0008	(3), O-Ring, FFKM, Size 008 (1 required per S.S. Valve Stem)		1	41.53
953981-6301	(4), Valve Stem, S.S., Short (for Sparge and Pump Ports)		1	57.95
953981-6302	(4), Valve Stem, S.S., Long (for Filter and Vent Ports)		1	57.95
953914-0006	(5), Drip Tip, PTFE		1	15.19
953981-0003	(6), Check Valve with Retainer		1	16.67
953981-0004	(7), Lower Cap Retainer Ring		1	16.67
953981-0005	(8), Lower Screw Cap, GL 45		1	21.54
758292-0122	(9), O-Ring, Ethylene Propylene, Size 122, 10/Pkg.		10	46.83
Optional Parts				
953984-0090	90 mm Conversion Base		1	249.25
953906-6390	Pickup Adapter, THF-Resistant, 90 mm		1	306.76

Filtration Cap, ULTRA-WARE®

Body is constructed of glass-filled PTFE with a vacuum adapter for 1/4" I.D. tubing. Upper screw clamp holds a solvent pickup adapter or funnel. Coarse fritted glass filter support is removable. Supplied with a PTFE/propylene o-ring.

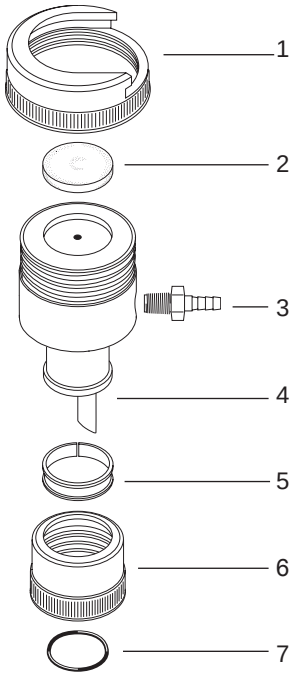
Kontes Article No.	Filter Diameter	Cap Thread	Case Qty.	Case Price
953915-0047	47 mm	GL 45	1	376.08

Replacement Parts

953914-0002	(1), Upper Screw Clamp, 47 mm	1	40.47
953914-0001	(2), Coarse Porosity Glass Support Frit, 47 mm	1	36.11
953915-0001	(3), Hose Barb, PFA, 1/4"	1	49.69
953914-0006	(4), Drip Tip, PTFE	1	15.19
953981-0004	(5), Lower Cap Retainer Ring	1	16.67
953981-0005	(6), Lower Screw Cap, GL 45	1	21.54
758292-0122	(7), O-Ring, Ethylene Propylene, Size 122, 10/Pkg.	10	46.83

Optional Parts

953984-0090	90 mm Conversion Base	1	249.25
953906-0090	Pickup Adapter, Standard, 90 mm	1	213.85



953915-0047

Delivery Cap, Three Valve, Standard, ULTRA-WARE®

Three on-off CTFE valves have 1/4-28 threads top and bottom. Valve body is PTFE. Valve stem material is CTFE. O-ring material for valve stem and lower seal is TFE/propylene.

Kontes Article No.	Cap Thread	Case Qty.	Case Price
953903-0000	GL 45	1	392.29

Replacement Parts

953903-0002	(1), Valve Handle, Blue	1	5.74
953903-0003	(1), Valve Handle, Red	1	5.74
953903-0004	(1), Valve Handle, Yellow	1	5.74
953903-0042	(2), Valve Stem, CTFE, Short	1	15.79
758260-0008	(3), O-Ring, TFE/Propylene, Size 008 (2 required per CTFE Valve Stem)	1	11.51
953903-0005	(4), Screw Cap, GL 45	1	21.54
758260-0216	(5), O-Ring, TFE/Propylene, Size 216	1	17.72

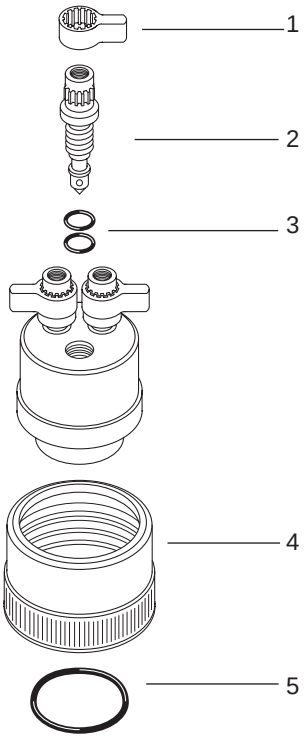
Delivery Cap, Three Valve, THF-Resistant, ULTRA-WARE®

Three on-off stainless steel valves have 1/4-28 threads top and bottom. Valve body is PTFE. Valve stem material is Stainless. O-ring material for valve stem and lower seal is FFKM.

Kontes Article No.	Cap Thread	Case Qty.	Case Price
953903-6200	GL 45	1	640.05

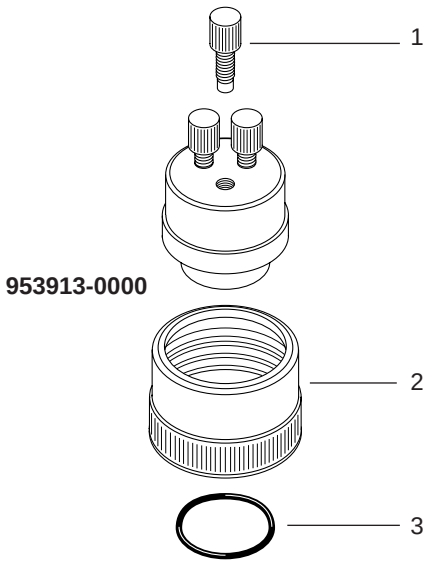
Replacement Parts

953903-0002	(1), Valve Handle, Blue	1	5.74
953903-0003	(1), Valve Handle, Red	1	5.74
953903-0004	(1), Valve Handle, Yellow	1	5.74
953903-6201	(2), Valve Stem, S.S.	1	119.97
758240-0008	(3), O-Ring, FFKM, Size 008	1	41.53
953903-0005	(4), Screw Cap, GL 45	1	21.54
758240-0216	(5), O-Ring, FFKM, Size 216	1	145.50



953903-0000
953903-6200

Three Hole Cap & Solvent Pickup Adapter



953913-0000

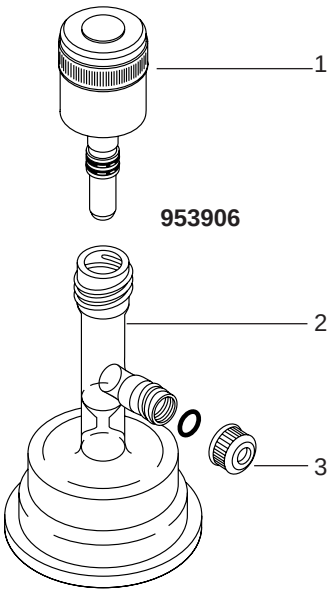
Delivery Cap, Three Hole, ULTRA-WARE®

Three holes have 1/4-28 threads top and bottom with 1/8" I.D. holes through to accept 1/8" O.D. PTFE tubing. Body is PTFE. Supplied complete with three 1/4-28 CTFE plugs and a TFE/propylene o-ring.

Kontes Article No.	Cap Thread	Case Qty.	Case Price
953913-0000	GL 45	1	140.11

Replacement Parts

953913-0001	(1), Plug, ETFE, 1/4-28	1	3.56
953903-0005	(2), Screw Cap, GL 45	1	21.54
758260-0216	(3), O-Ring, TFE/Propylene, Size 216	1	17.72



953906

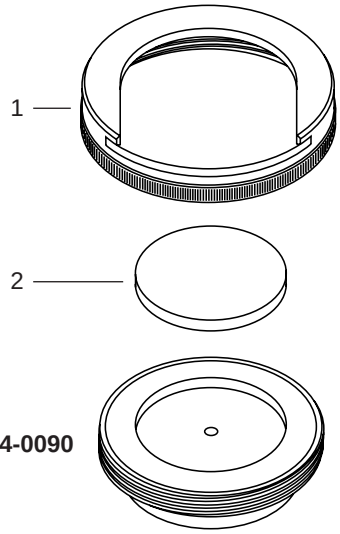
Adapter, Solvent Pickup, ULTRA-WARE®

Designed to be used with the Five Valve, Four Valve and Filtration caps to provide safe, in-line filtration that replaces the traditional pour-and-wait funnel filtration method. The unique Bevel-Seal makes a vacuum tight o-ring connection to the PTFE tubing. The Hi-Vac valve is easier to open under vacuum than the standard stopcock. Closing the valve provides vacuum degassing after filtration. Each unit is supplied with 3 feet (91 cm) of 1/4" O.D. FEP PTFE tubing. Valve o-ring size is 010 and side-arm o-ring size is 108.

Kontes Article No.	Description	Case Qty.	Case Price
953906-0047	Pickup Adapter, Standard, 47 mm	1	156.32
953906-6347	Pickup Adapter, THF-Resistant, 47 mm	1	252.20
953906-0090	Pickup Adapter, Standard, 90 mm	1	213.85
953906-6390	Pickup Adapter, THF-Resistant, 90 mm	1	306.76

Replacement Parts

953906-0002	(2) Pickup Adapter Body, 47mm	1	115.77
953906-0092	(2) Pickup Adapter Body, 90mm	1	162.23
953906-0001	(1) Valve Plug Assembly, Std.	1	36.42
953906-6301	(1) Valve Plug Assembly, THF	1	157.82
410119-1508	(3) Cap, Nylon, 15-415, 8.5mm, pk/12	12	16.14



953984-0090

Conversion Base, 90 mm, ULTRA-WARE®

Converts the Five Valve, Four Valve and Filtration caps to use 90 mm filter membranes, providing up to four times faster filtration. The conversion base is manufactured from glass-filled PTFE and is supplied with a coarse porosity glass support frit and an upper screw clamp. Requires a 90 mm Solvent Pickup Adapter listed above.

Kontes Article No.	Description	Case Qty.	Case Price
953984-0090	90 mm Conversion Base	1	249.25

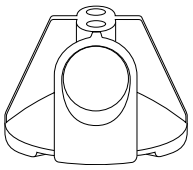
Replacement Parts

953914-0092	(1) Upper Screw Clamp, 90 mm	1	74.63
953914-0091	(2) Coarse Porosity Glass Support Frit, 90 mm	1	99.67

Inlet / Sparge Filter

The inlet/sparge filter combines an inlet filter with a sparger in a single, convenient device. The all PEEK construction is ideal for virtually all mobile phases. The special design prevents sparging bubbles from entering the mobile phase stream while allowing the pump to draw all but a few milliliters of solvent from the reservoir. The inlet/sparge filter is supplied with 2 µm porosity frits and connections for 1/8" O.D. tubing.

Kontes Article No.	O.D. x Length	Porosity	Fits Tubing Size	Case Qty.	Case Price
953916-3002	1.1" x 0.8"	2 µm	1/8" O.D.	1	37.81

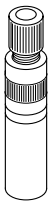


953916-3002

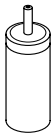
Inlet Filter, Bottom-of-the-Bottle™, ULTRA-WARE®

A specially designed inlet filter that allows solvent to be drawn to within 2 mm of the bottom of the filter. Combined with the ULTRA-WARE conical bottom reservoir, this filter will utilize all but a few milliliters of mobile phase for more efficient use of your solvent.

Kontes Article No.	O.D. x Length	Fits Tubing Size	Case Qty.	Case Price
953916-1002	1/2" x 1 3/4"	1/8" O.D.	1	94.17
953916-2002	1/2" x 1"	1/16" I.D.	1	29.98



953916-1002



953916-2002

Inlet Filter, Solvent, Stainless Steel, ULTRA-WARE®

Two micron porosity filter with a CTFE nut for connection to 1/8" O.D. PTFE tubing. Recommended for use with the 250 mL to 5 liter size reservoir systems.

Kontes Article No.	O.D. x Length	Case Qty.	Case Price
953916-0000	1/2" x 1"	1	41.50
Component Parts			
953916-0001	Filter Only	1	22.60
953916-0002	CTFE Nut	1	21.30

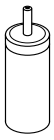


953916-0000

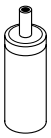
Inlet Filter, Solvent, Stainless Steel, ULTRA-WARE®

Ten micron porosity all stainless steel filter with a stem for slip connection to PTFE tubing. Recommended for use with THF-resistant systems.

Kontes Article No.	O.D. x Length	Stem O.D.	Fits Tubing O.D.	Case Qty.	Case Price
953916-6210	1/2" x 1"	1/16"	1/8"	1	34.11
953916-6220	1/2" x 1"	1/8"	3/16"	1	34.11



953916-6210

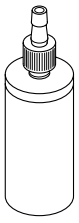


953916-6220

Inlet Filter, Solvent, Stainless Steel, ULTRA-WARE®

Ten micron porosity filter with an ETFE nut and ferrule for connection to 1/8" O.D. PTFE tubing. A CTFE hose barb adapter for connection to 1/4" O.D. (5/32" I.D.) tubing is also included. Recommended for use with 10 and 20 liter size reservoir systems.

Kontes Article No.	O.D. x Length	Case Qty.	Case Price
953917-0000	7/8" x 1 1/2"	1	97.02
Component Parts			
953917-0001	Filter Only	1	86.70
953918-0014	CTFE Hose Barb Adapter	1	13.64



953917-0000

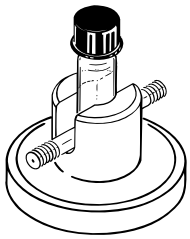
Inlet Filter, Solvent, Glass, ULTRA-WARE®

Five micron porosity filter with a CTFE union, 1/4-28 nut and ferrule for connection to 1/8" O.D. tubing.

Kontes Article No.	O.D. x Length	Case Qty.	Case Price
953916-2700	1/2" x 2"	1	98.07
Component Parts			
953916-2701	Filter Only	1	73.55
H88800-0000	Union, CTFE	1	9.51



953916-2700



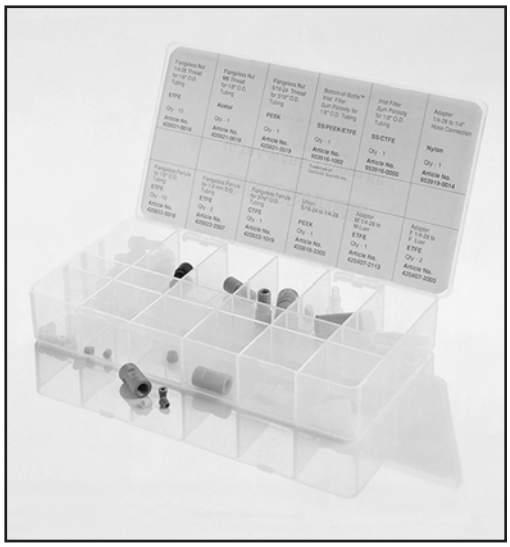
953890

Debubbler, Mobile Phase, ULTRA-WARE®

Unit consists of a glass chamber with inlet and outlet ports, and a PTFE-lined phenolic cap. Installed before the pump or mixer, the debubbler captures bubbles that are released by unscrewing the cap. (Unions are not included.)

Kontes Article No.	Port Threads	Cap GPI Thread	Case Qty.	Case Price
953890-0000	1/4"-28 external	13-425	1	234.17

Component Part			
953891-0000	Glass Chamber Only	1	71.81



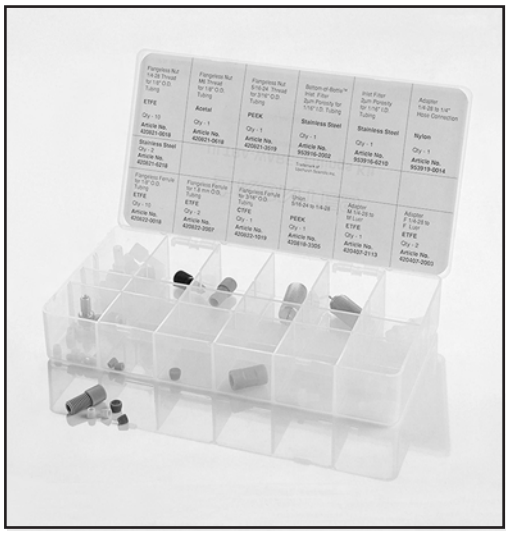
953882-1000

Fittings Kit, Standard Version, ULTRA-WARE®

This kit contains all of the tube fittings, adapters and solvent inlet filters required to plumb any ULTRA-WARE cap to virtually all HPLC pumps. Not recommended for use with THF or chlorinated hydrocarbons.

Kontes Article No.	Description	Case Qty.	Case Price
953882-1000	Fittings Kit, Standard Version	1	281.41

Component Parts	Description	Quantity in Kit	Case Qty.	Case Price
420407-2003	Adapter, F 1/4-28 to F-Luer	2	1	13.22
420407-2113	Adapter, M 1/4-28 to M-Luer	1	1	6.26
420818-3305	Union, 5/16-24 to 1/4-28	1	1	24.16
420821-0018	Tubing Nut, 1/4-28, for 1/8" O.D.	10	1	3.56
420821-0618	Tubing Nut, M6, for 1/8" O.D.	1	1	2.56
420821-3519	Tubing Nut, 5/16-24, for 3/16" O.D.	1	1	8.38
420822-0018	Ferrule, for 1/8" O.D.	10	1	2.70
420822-1019	Ferrule, for 3/16" O.D.	1	1	4.41
420822-2007	Ferrule, for 1.8 mm O.D.	2	1	2.70
953916-0000	Inlet Filter, for 1/8" O.D. Tubing	1	1	41.50
953916-1002	Inlet Filter, BOTB, for 1/8" O.D. Tubing	1	1	94.17
953919-0014	Adapter, 1/4-28 to 1/4" Hose Barb	1	1	7.39



953882-2000

Fittings Kit, THF-Resistant, ULTRA-WARE®

This kit contains all of the tube fittings, adapters and solvent inlet filters required to plumb any ULTRA-WARE cap to virtually all HPLC pumps. However, it is designed to be used specifically with THF or other very aggressive organic solutions.

Kontes Article No.	Description	Case Qty.	Case Price
953882-2000	Fittings Kit, THF Version	1	281.41

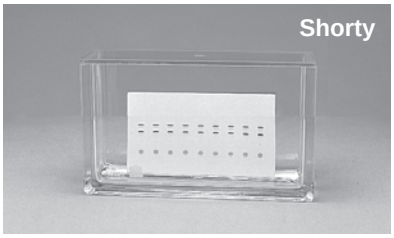
Component Parts	Description	Quantity in Kit	Case Qty.	Case Price
420407-2003	Adapter, F 1/4-28 to F-Luer	2	1	13.22
420407-2113	Adapter, M 1/4-28 to M-Luer	1	1	6.26
420818-3305	Union, 5/16-24 to 1/4-28	1	1	24.16
420821-0018	Tubing Nut, 1/4-28, for 1/8" O.D.	10	1	3.56
420821-0618	Tubing Nut, M6, for 1/8" O.D.	1	1	2.56
420821-3519	Tubing Nut, 5/16-24, for 3/16" O.D.	1	1	8.38
420821-6218	Tubing Nut, 1/4-28, for 1/8" O.D.	2	1	28.29
420822-0018	Ferrule, for 1/8" O.D.	10	1	2.70
420822-1019	Ferrule, for 3/16" O.D.	1	1	4.41
420822-2007	Ferrule, for 1.8 mm O.D.	2	1	2.70
953916-2002	Inlet Filter, BOTB, for 1/16" I.D.	1	1	29.98
953916-6210	Inlet Filter, for 1/16" I.D.	1	1	34.11
953919-0014	Adapter, 1/4-28 to 1/4" Hose Barb	1	1	7.39

Rectangular TLC Developing Tanks

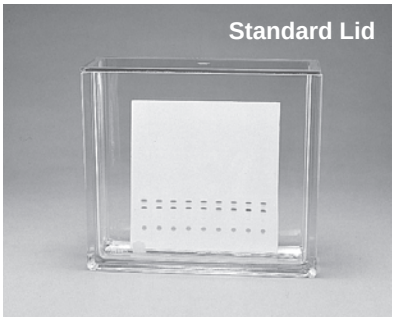
Kontes Brand TLC Developing Tanks are manufactured from sturdy molded glass bricks that will withstand regular use for many years. The clear sides allow unobstructed visual inspection of TLC plates up to 20 x 20 cm in size. The top of the tanks are ground flat to match the lids and the edges are beveled to remove any sharp edges. The bottoms are ground to provide a flat, level surface. A raised ridge along the inside bottom allows the simultaneous development of two 20 x 20 cm or four 5 x 20 cm plates. Inside dimensions of the tanks are approximately 27cm W x 7cm D x 25cm H (10 5/8 x 2 7/8 x 9 3/4 inches). Weight is approximately 5.4 kg (12 pounds).

The tank lids are available in three styles: standard, nonslip and latch. Nonslip lids have a knob for easy lifting and PTFE retainers inside to prevent the lid from accidentally sliding off the tank. Latch lids are designed to hold them firmly to the developing tank, greatly improving the stability of the saturated environment for developing TLC plates. Latch lids also have a knob for easy removal and PTFE retainers. Lids in all three styles are available with holes drilled for #0 stoppers to allow addition of reagents without disturbing the equilibrium of the saturated environment.

The multiplate aluminum rack allows the simultaneous development of up to six 20 x 20 cm TLC plates. The rack is hard anodized to prevent corrosion.



416180-1020



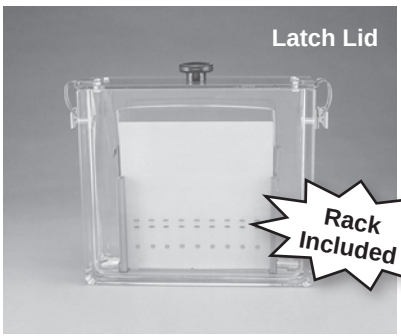
416180-0000



416185-0000



416190-0000



416190-4900

Tank with Standard Lid

The standard 20 cm x 20 cm TLC plate tank is difficult to use with 10 cm x 10 cm plates, so the “SHORTY” tank was developed; it will also accommodate 5 x 10 or 10 x 20 plates, turned long side down. Both have a centering baffle to support plates during development and are supplied with lids.

Kontes Article No.	Description	Use with Plate Size WxH (mm)	Case Qty.	Case Price
416180-0000	TLC Developing Tank with Standard Lid	20 x 20	1	137.68
416180-1020	TLC Developing Tank, “Shorty”	10 x 20	1	128.31
Accessory Part				
416181-0000	TLC Standard Lid	10 x 20 or 20 x 20	1	26.10

Tank with Nonslip Lid

Kontes Article No.	Description	Case Qty.	Case Price
416185-0000	TLC Developing Tank with Nonslip Lid	1	188.84
Component Parts			
416186-0000	TLC Nonslip Lid	1	62.13
416182-0000	TLC Developing Tank Only	1	127.95

Tank with Latch Lid

Kontes Article No.	Description	Case Qty.	Case Price
416190-0000	TLC Developing Tank with Latch Lid	1	223.45
Component Parts			
416191-0000	TLC Latch Lid	1	65.46
416192-0000	TLC Developing Tank Only, Latch	1	164.34

Tank with Latch Lid and Aluminum Rack

Kontes Article No.	Description	Case Qty.	Case Price
416190-4900	TLC Developing Tank with Latch Lid and Aluminum Rack	1	360.41
Component Parts			
416191-0000	TLC Latch Lid	1	65.46
416192-0000	TLC Developing Tank Only, Latch	1	164.34
416175-0000	TLC Aluminum Rack, Hold Six 20x20 cm Plates	1	155.69



416170

TLC Developing Tank, Cylindrical

Cylindrical glass tanks for the development of 1 x 3 in. to 10 x 20 cm plates. These tanks provide maximum vapor phase saturation with a minimum amount of solvent.

Kontes Article No.	For Plate Size	Lid	Case Qty.	Case Price
416170-0510	5 x 10 cm	Glass	1	91.86
416170-0520	5 x 20 cm	Glass	1	98.74
416170-1020	10 x 20 cm	Glass	1	135.15
416170-1118	1 x 3 in	Polyethylene	1	45.14
416170-1119	1 x 3 in	Polyethylene	12	396.44
416170-1120	5 x 10 cm	Polyethylene	1	55.80
416170-1121	5 x 10 cm	Polyethylene	12	491.57
416170-1122	5 x 20 cm	Polyethylene	1	83.98
416170-1123	5 x 20 cm	Polyethylene	12	732.32

Component Parts

416170-1124	Polyethylene Cap For 1 x 3 in. Tanks	12	46.26
416170-1125	Polyethylene Cap For 5 x 10 cm and 5 x 20 cm Tanks	12	46.26
416171-0500	Glass Cap for 5 cm Tanks	1	28.27
416171-1000	Glass Cap for 10 cm Tanks	1	31.80



416181

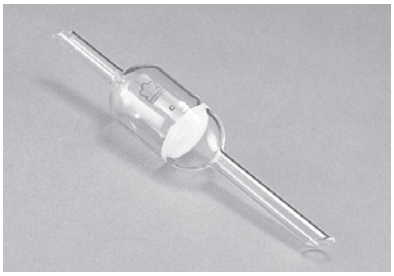
TLC Developing Tank, Cylindrical, with Ground Glass Lid

Thin layer chromatography developing tanks with ground glass joints for use with 5 x 20 cm and 5 x 10 cm TLC plates. These tanks are supplied complete with ground glass joints and lids to ensure that no solvent vapor escapes during the chromatographic process.

Kontes Article No.	For Plate Size (cm)	$\overline{\$}$ Joint	Case Qty.	Case Price
416181-0308	3 x 8	34/12	1	69.89
416181-0310	3 x 10	34/12	1	98.05
416181-0001	5 x 10	60/12	1	104.87

Component Parts

416172-0308	ground glass tank, $\overline{\$}$ 34/12	1	38.82
416172-0310	ground glass tank, $\overline{\$}$ 60/12	1	69.57
416171-3412	ground glass lid, $\overline{\$}$ 34/12	1	29.78
416171-6021	ground glass lid, $\overline{\$}$ 60/12	1	25.22



416400

TLC Sample Recovery Tube

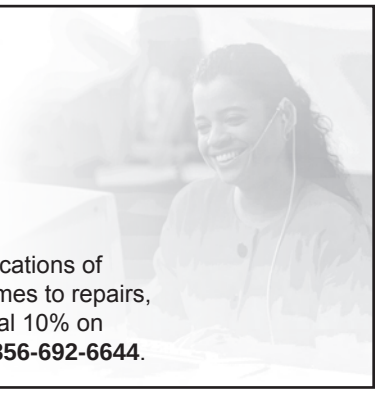
For the recovery of samples directly from a developed TLC plate, using suction. Recovery of sample is accomplished by elution with an appropriate solvent while the adsorbent is retained on the fritted disc. Size 23 is useful for the recovery of samples from preparative TLC plates.

Kontes Article No.	Approx. Bulb Capacity (mL)	Disc Porosity	Approx. Overall Length (mm)	Case Qty.	Case Price
416400-0021	0.5-1	Medium	103	1	63.44
416400-0022	1-2	Medium	120	1	63.44
416400-0023	25-30	Coarse	180	1	78.20



- **Custom Fabrications**
- **Quality Repairs**
- **Modifications of All Kinds**
- **No Order Too Small**
- **Quick Turnaround**

KONTES
custom glass shop
*call toll-free **800-682-6644***
customglass@kimble-chase.com



Contact the **Kontes Custom Glass Shop** at KIMBLE CHASE for modifications of standard products or fabrication of your unique designs. And when it comes to repairs, we can save you up to 75% of the cost of a new item. Save an additional 10% on repairs of Kontes or Kimble Brand products. Fax your requirements to **856-692-6644**.

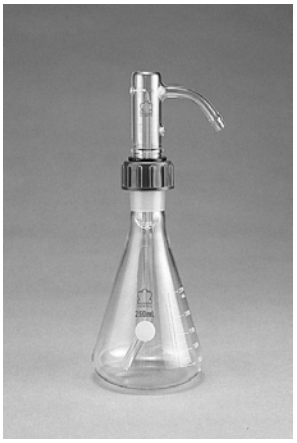
TLC Reagent Sprayer, with Screw Thread Ground Joint

The connection between the sprayer head and the flask is made with a special screw thread ground joint, connecting cap and loosening ring. If the joint ever "freezes" from reagent crystallization or residue formation, simply unscrew the connecting cap back onto the unique loosening ring and the joint will easily come apart. These sprayers will operate on as little as 1 psi (0.07 kg/cm^2) air pressure with optimal results at 3-5 psi (0.21-0.35 kg/cm^2). The connecting cap, loosening ring and o-ring should be removed before autoclaving.

Kontes Article No.	Flask Capacity (mL)	Joints	Approx. Height x Diameter (mm)	Case Qty.	Case Price
422530-0010	10	19/22	155 x 22	1	147.04
422530-0025	25	19/22	147 x 40	1	147.04
422530-0050	50	19/22	174 x 50	1	147.04
422530-0125	125	24/40	204 x 65	1	147.04
422530-0250	250	24/40	229 x 85	1	147.04
422530-0500	500	24/40	273 x 105	1	164.34

Component Parts

422531-0010	TLC Sprayer Head for 10 and 25 mL flasks	1	125.07
422531-0050	TLC Sprayer Head for 50 mL flasks	1	125.07
422531-0125	TLC Sprayer Head for 125 mL flasks	1	125.07
422531-0250	TLC Sprayer Head for 250 mL flasks	1	125.07
422531-0500	TLC Sprayer Head for 500 mL flasks	1	142.36
422532-0010	TLC Sprayer Flask, 10 mL	1	43.39
422532-0025	TLC Sprayer Flask, 25 mL	1	43.39
422532-0050	TLC Sprayer Flask, 50 mL	1	43.39
422532-0125	TLC Sprayer Flask, 125 mL	1	43.39
422532-0250	TLC Sprayer Flask, 250 mL	1	43.39
422532-0500	TLC Sprayer Flask, 500 mL	1	60.41
422533-0019	Connecting Cap, Size 19, 5/pkg. (1 supplied)	5	20.03
422533-0024	Connecting Cap, Size 24, 5/pkg. (1 supplied)	5	21.77
422534-0019	Loosening Ring, Size 19, 5/pkg. (1 supplied)	5	12.25
422534-0024	Loosening Ring, Size 24, 5/pkg. (1 supplied)	5	13.11
758202-0114	O-ring, Buna-N, Size 114, 10/pkg. (1 supplied)	10	11.63
758202-0212	O-ring, Buna-N, Size 212, 5/pkg. (1 supplied)	5	9.66



422530



422550

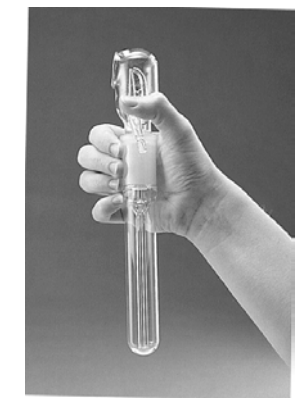
TLC Reagent Sprayer, with Standard Ground Joint

These units operate from 3-5 psi (0.21-0.35 kg/cm^2). Their all-glass construction makes them completely steam autoclavable.

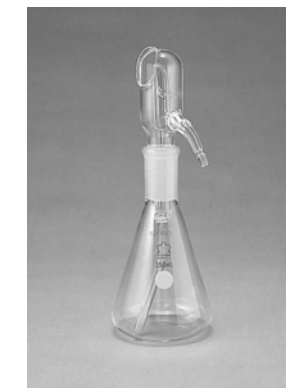
Kontes Article No.	Working Capacity (mL)	Joints	Approx. Height x Diameter (mm)	Case Qty.	Case Price
422550-0000	5	14/20	130 x 17	1	89.03
422540-0000	25	24/40	175 x 25	1	152.81
422500-0125	125	24/40	200 x 65	1	157.13
422500-0250	250	24/40	225 x 85	1	165.77

Component Parts

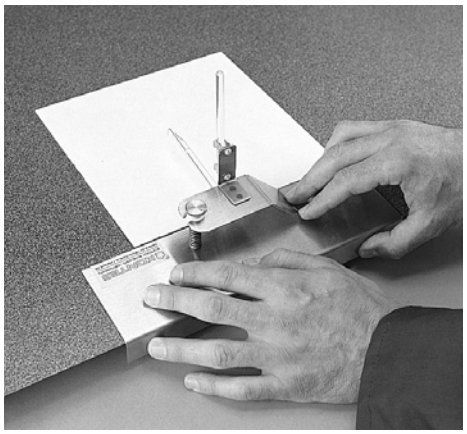
422551-0000	TLC Sprayer Only for 10 mL Tube	1	68.62
422541-0000	TLC Sprayer Only for 50 mL Tube	1	129.75
422501-0125	TLC Sprayer Only for 125 mL Flask	1	129.75
422501-0250	TLC Sprayer Only for 250 mL Flask	1	138.40
897900-0010	Test Tube, 10 mL, 14/20 outer joint	1	20.23
422542-0000	Test Tube, 50 mL, 24/40 outer joint	1	23.64
617000-0224	Flask, 125 mL, 24/40 outer joint	1	23.63
617000-0424	Flask, 250 mL, 24/40 outer joint	1	24.15



422540



422500



416430

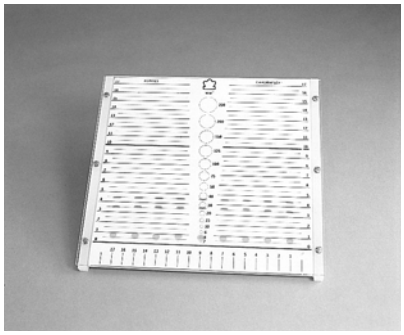
TLC Plate Streaker

A simple device for uniformly streaking TLC plates. Unit consists of a stainless steel base with an adjustable holder for a glass reservoir. To operate, the streaker is placed over edge of the counter top and the plate to be streaked is positioned parallel to it. The bent capillary tip is then adjusted so that it lightly touches the plate. The reservoir is filled with the solution to be chromatographed and by moving

the unit back and forth along the counter edge, a uniform streak is accomplished. Supplied complete with glass, stainless steel capillaries and instructions.

Reference: Journal of Chemical Education, Vol. 47, No. 5, May 1970, page 404, "A Simple Streaker for Preparative Layer Chromatography," L.J. Altman, James R.Trudell.

Kontes Article No.		Approx. Dimensions L x W x H (cm)	Case Qty.	Case Price
416430-0000		25 x 15 x 16	1	245.07
Component Parts				
416431-0000	Base Assembly		1	177.31
416432-0000	Reservoir		1	33.60
416433-0000	Glass Capillary Set, (2 Small, 2 Large)		1	53.34
416434-0000	Stainless Capillary Set, (1 Small, 1 Large)		1	26.80



416450

TLC Labeling Template

A transparent labeling template designed to fit over TLC plates without disturbing the absorbent layer. The apparatus features spotting guide ruler, compound and solvent travel distance markers and circles for estimation of spot sizes. Origin and 10 cm bold reference lines are provided to enable fast calculation of Rf-values.

Kontes Article No.	Approx. Dimensions L x W x H (cm)	Case Qty.	Case Price
416450-0000	22 x 20 x 1	1	89.74



764500

TLC Spotting Capillaries, Borosilicate Glass, Microcaps®

Microcaps® are ingeniously simple . . . in concept and in use. They are precision-bore glass capillary tubes, cut to predetermined lengths, so that each capillary tube will hold a known volume of fluid when filled. Microcaps are so inexpensive that it is not impractical to dispose of each tube after use.

Filling is simple. Capillary action - not externally applied suction - draws the fluid into the tube. To dispense the fluid, simply squeeze the bulb. No unusual skills or training required. Immediate, professional results. Ideal for spotting preadsorbent TLC plates. Supplied in packages containing one bulb assembly and one dispenser vial with 100 micropipets. Volumetric tolerance is ±1%.

Kontes Article No.	Capacity (µL)	Length (mm)	Relative I.D. (in.)	Relative O.D. (in.)	Case Qty.	Case Price
764500-0000	0.5	32	.0056	.022	100	31.01
764500-0001	1.0	32	.0078	.025	100	25.66
764500-0002	2.0	32	.0111	.030	100	25.66
764500-0005	5.0	32	.0174	.0355	100	25.66
764500-0010	10.0	41	.0219	.0314	100	25.66
764500-0020	20.0	64	.0249	.0355	100	25.66
764500-0025	25.0	65	.0272	.0382	100	25.66
764500-0050	50.0	100	.0314	.043	100	25.66
764500-0100	100.0	116	.0410	.0555	100	25.66

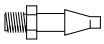
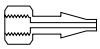
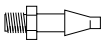
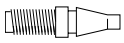
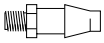


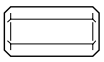
764520

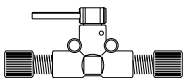
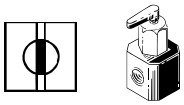
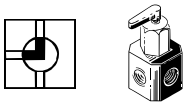
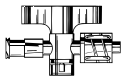
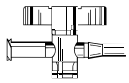
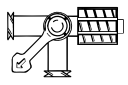
TLC Spotting Capillaries, 5 Pack, Borosilicate, Microcaps®

The Microcaps "5 Pack" is ideal for use in spotting TLC plates. Each kit has 5 dispenser vials containing 100 micropipets each of 0.5, 1, 2, 5 and 10 µL sizes. Also included are a bulb assembly and spotting holder.

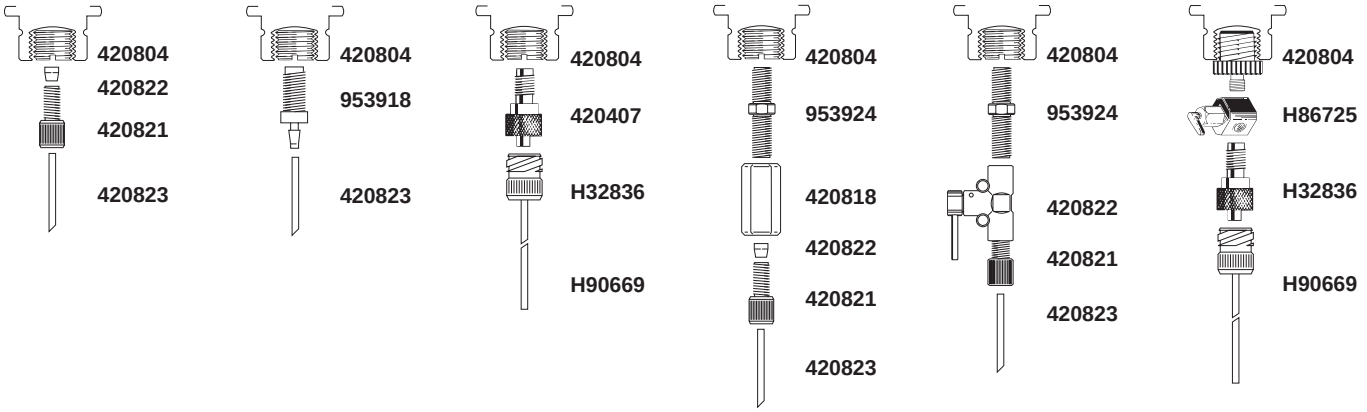
Kontes Article No.	Case Qty.	Case Price
764520-0000	1	95.87

Kontes Article No.		Description	Material	Case Quantity	Case Price
ADAPTER, 10-32 THREAD TO 1/4-28 THREAD					
These adapters convert the thread style common on most HPLC systems to 1/4-28 threads.					
953921-6216		F10-32 Thread to F1/4-28 Thread	316 Stainless Steel	1	**31.69**
ADAPTER, 1/4-28 THREAD TO HOSE BARB					
These adapters allow easy converstion from 1/4-28 threads to tubing with various internal diameters.					
953918-2306		Adapter, M1/4-28 Thread to 1/16” Barb	ETFE	1	**6.53**
953918-0018		Adapter, M1/4-28 Thread to 1/8” Barb	CTFE	1	**10.38**
953918-2313		Adapter, M1/4-28 Thread to 1/8” Barb	ETFE	1	**6.53**
953923-6318		Adapter, F1/4-28 Thread to 1/8” Barb	PTFE	1	**28.29**
953918-0014		Adapter, M1/4-28 Thread to 5/32” Barb	CTFE	1	**13.64**
953918-2319		Adapter, M1/4-28 Thread to 3/16” Barb	ETFE	1	**6.53**
953919-0014		Adapter, M1/4-28 Thread to 1/4” Barb	Nylon	1	**7.39**
ADAPTER, 1/4-28 THREAD TO LUER					
This adapter is recommended for converting the male luer lock on Flex-Columns to a female 1/4-28 thread.					
420407-2003		Adapter F1/4-28 Thread to F-Luer	ETFE	1	**13.22**
420407-2013		Adapter, M1/4-28 Thread to F-Luer	ETFE	1	**6.26**
H32834-0000		Adapter, M1/4-28 Thread to F-Luer	CTFE	1	**24.74**
420407-2113		Adapter M1/4-28 Thread to M-Luer	ETFE	1	**6.26**
H32836-0000		Adapter M1/4-28 Thread to M-Luer	CTFE	1	**24.74**
This adapter is recommended for converting the male luer lock on Flex-Columns to a male 1/4-28 thread.					
420407-0000		Adapter, M1/4-28 Thread to F-Luer	Polypropylene	10	**19.92**
ADAPTER, LUER TO HOSE BARB					
These hose barb adapters are recommended for use with Flex-Columns.					
420408-0000		F-Luer to 1/16” Barb	Polypropylene	10	**21.89**
420412-0000		M-Luer Lock to 1/16” Barb	Polypropylene	10	**21.05**

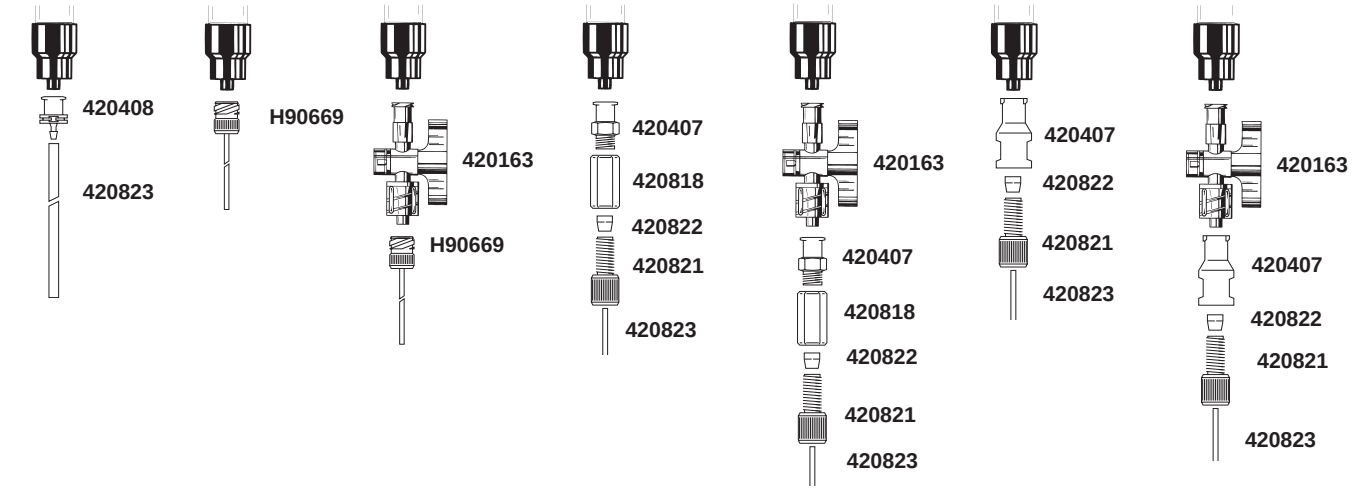
Kontes Article No.		Description	Material	Case Quantity	Case Price
ADAPTER, 1/2-20 TO 1/4-28 THREAD					
These adapters are used to convert the 1/2-20 threads on CHROMAFLEX COLUMNS end fittings to 1/4-28 or M6 threads.					
420804-0001		M1/2-20 to F1/4-28	CTFE	2	**29.28**
420804-0601		M1/2-20 to F-M6	CTFE	2	**29.28**
FLANGELESS FITTINGS					
Flangeless fittings eliminate the need to flange (flare) PTFE tubing to make a connection. Just slide a flangeless ferrule onto the tubing, conical end toward the male nut, and finger tighten. Flangeless fittings can be used with all flat bottom 1/4-28, 5/16-24 and M6 threads.					
Tubing Nuts - Use with the 420822-series flangeless ferrules					
420821-0116		Nut, 1/4-28 Thread, for 1/16" O.D. tubing	ETFE	1	**3.56**
420821-0018		Nut, 1/4-28 Thread, for 1/8" O.D. tubing	ETFE	1	**3.56**
420821-6218		Nut, 1/4-28 Thread, for 1/8" O.D. tubing	S. S.	1	**28.29**
420821-6116		Nut, M6 Thread, for 1/16" O.D. tubing	Acetal	1	**2.56**
420821-0618		Nut, M6 Thread, for 1/8" O.D. tubing	Acetal	1	**2.56**
420821-3519		Nut, 5/16-24 Thread, for 3/16" O.D. tubing	PEEK	1	**8.38**
Ferrules - Use with 420821-series male nuts					
420822-0116		Ferrule, for 1/16" O.D. tubing	ETFE	1	**2.70**
420822-0018		Ferrule, for 1/8" O.D. tubing	ETFE	1	**2.70**
420822-1019		Ferrule, for 3/16" O.D. tubing	CTFE	1	**4.41**
420822-2007		Ferrule, for 1.8 mm O.D. Tubing	ETFE	1	**2.70**
Plug - Used to seal ports with flat bottom 1/4-28 threads					
953913-0001		Nut Plug, 1/4-28 Thread	ETFE	1	**3.56**
UNIONS					
These internally threaded unions are designed for use with flangeless fittings.					
H88800-0000		Union, F1/4-28 to F1/4-28	CTFE	1	**9.51**
420818-0000		Union, F1/4-28 to F1/4-28	ETFE	1	**7.25**
420818-0600		Union, F1/4-28 to F-M6	ETFE	1	**8.26**
420818-0606		Union, F-M6 to F-M6	ETFE	1	**12.36**
420818-3305		Union, F1/4-28 to F5/16-24	PEEK	1	**24.16**

Kontes Article No.		Description	Material	Case Quantity	Case Price
UNIONS					
This externally threaded union is used to make a connection between two internally threaded 1/4-24 ports.					
953924-1300		Union, M1/428 to M1/4-28	CTFE	1	**21.05**
This female luer union is recommended for connecting two Flex-Columns in series.					
420411-0000		Union, F-Luer to F-Luer	Polypropylene	10	**25.02**
VALVES					
420817-2306		Valve, 1-Way, 1/4-28 Threads, with 1/16” Flangeless Fittings	ETFE	1	**56.44**
420817-3306		Valve, 1-Way, 1/4-28 Threads, with 1/16” Flangeless Fittings	PEEK	1	**96.64**
420817-2313		Valve, 1-Way, 1/4-28 Threads, with 1/8” Flangeless Fittings	ETFE	1	**56.44**
420817-3313		Valve, 1-Way, 1/4-28 Threads, with 1/8” Flangeless Fittings	PEEK	1	**96.64**
H86725-0000		Valve, 1-Way, with 1/4-28 threads	Valve Seat - CTFE Plug - PTFE	1	**96.64**
The following are specially designed to convert this valve’s 1/4-28 threads to luer fittings:					
H35030-0000		Fitting, 1/4-28 to M-Luer	CTFE	1	**24.74**
H35031-0000		Fitting, 1/4-28 to F-Luer	CTFE	1	**24.74**
H86728-0000		Valve, 3-Way, with 1/4-28 threads	Valve Seat - CTFE Plug - PTFE	1	**96.64**
The following are specially designed to convert this valve’s 1/4-28 threads to luer fittings:					
H35030-0000		Fitting, 1/4-28 to M-Luer	CTFE	1	**24.74**
H35031-0000		Fitting, 1/4-28 to F-Luer	CTFE	1	**24.74**
420163-0001		Stopcock Valve, 1-Way, F-Luer to M-Luer Lock	Body - Polycarbonate Plug - HDPE	10	**38.51**
420163-0000		Stopcock Valve, 1-Way, F-Luer to M-Luer	Body - Polycarbonate Plug - HDPE	50	**98.78**
420163-1500		Stopcock Valve, 1-Way, F-Luer to M-Luer	Body - Nylon	5	**23.45**
420163-4500			Plug - HDPE	50	**198.36**
420163-4503		Stopcock Valve, 3-Way, 2 F-Luers to M-Luer Lock	Body - Nylon Plug - HDPE	10	**46.77**

CHROMAFLEX® Columns



FLEX-COLUMNS®





Safety Program - *Play it safe in the lab.*

Our Safety Program discusses the ten basic safety rules of handling glassware as well as the technical properties and physics of glass. Available as a DVD.

Kimble Article No.	Format	Case Qty.	Case Price
99991D-99	DVD	1	23.99

See more safety products in the *SAFETYWARE* section.

NO-OX® Tubing

Even if you thoroughly degas your mobile phase by helium sparging, vacuum filtration, sonication, or in-line vacuum degassing, the mobile phase will not stay degassed if PTFE tubing is used to deliver it to the pump. That's because PTFE is gas permeable and allows ambient gases, such as oxygen, to diffuse through the tubing wall and into the mobile phase. The amount of ambient gases that enter the mobile phase depends on the tubing dimensions and mobile phase flowrate, but no matter how well you have degassed, some oxygen will re-enter the mobile phase on its way to the pump, possibly detracting from system performance.

NO-OX Tubing solves this problem with a unique double-wall design that eliminates regassing. The chemically inert inner FEP PTFE tube carries the mobile phases. The non-wetted outer wall is made from a translucent, flexible polymer with extremely low gas permeability. NO-OX cuts regassing rates to negligible levels, while preserving PTFE's excellent chemical resistance, transparency and handling properties.

Flexible NO-OX Tubing bends easily to fit your system's layout and cuts easily with a razor blade or plastic tubing cutter. The translucent wall lets you see the tubing's interior for fast, simple troubleshooting. NO-OX fitting connect in seconds. Simply slide the flangeless nut and ferrule over the tubing, push NO-OX insert into the tubing end, and connect finer-tight into any flat bottom 1/4-28 threaded port.

Kontes Article No.	Description	Case Qty.	Case Price
869800-1305	NO-OX Tubing, 1/8" O.D. x 1.5 mm I.D. x 5 ft.	1	38.65
869801-1006	NO-OX Insert, CTFE	10/Pkg.	47.33

Tubing, FEP PTFE, 1/16" x 10 ft.

This tubing is made for easy connection to Flex-Columns.

Kontes Article No.	Description	Material	Case Qty.	Case Price
420823-0116	Tubing, 1/16" OD x 0.030" ID x 10 feet	PTFE	1	18.91
420823-0018	Tubing, 1/8" OD x 0.063" ID x 10 feet	PTFE	1	29.28
420823-0014	Tubing, 1/4" OD x 0.156" ID x 10 feet	PTFE	1	70.09

Tubing, with Luer Lock Adapter

This tubing is supplied with an integral male luer lock for easy connection to Flex-Columns.

Kontes Article No.	Description	Material	Case Qty.	Case Price
H90669-0005	Tubing, 1/16" OD x 5',	Tubing - PTFE Luer Lock - CTFE	5	142.14

See 953921, 420821, H90669, H88800 and 420817 for a complete listing of chromatography adapters, fittings, valves and tubing.

NO-OX is a registered trademark of RHEODYNE, LLC.

NO-OX® Tubing cuts regassing rates to negligible levels.

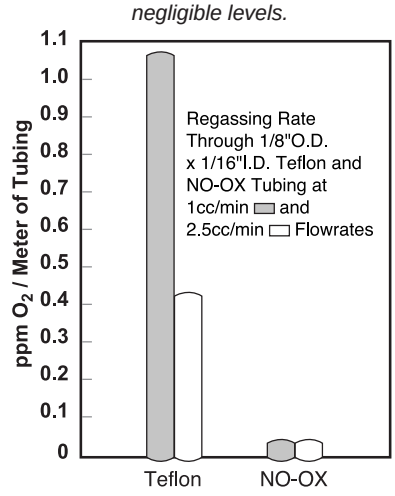


Figure 1

NO-OX's double wall maintains PTFE's inertness without its gas permeability

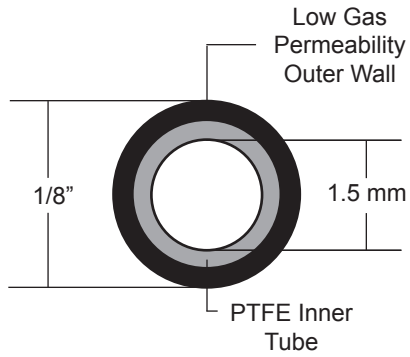


Figure 2

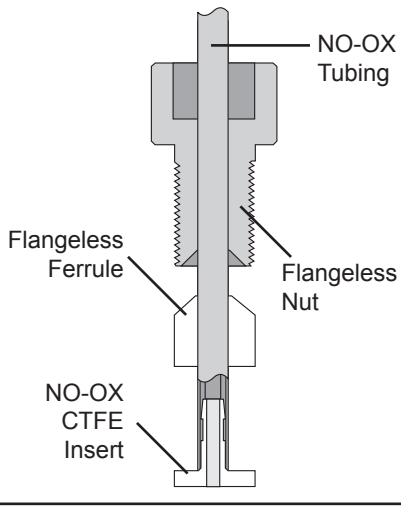
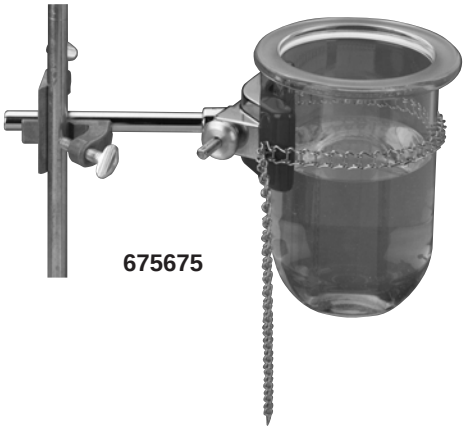


Figure 3



675675

Chain

Accommodates up to 28 cm (11") diameter or irregular shaped objects. Quick slip-on chain connection has large, easy to turn adjusting knob. Holds equipment in place at any angle to lattices and rods. Length of chain is three feet.

Kontes Article No.	Maximum Grip Size (mm)	Extension Arm Length (cm)	Extension Arm O.D. (mm)	Case Qty.	Case Price
675675-0028	28 (11")	12.7 (5")	13 (.5 ")	1	51.54



675700

Three Prong

Three-prong extension clamps hold objects ranging from 0.80 to 89 mm securely and safely. Two separate adjustment screws ensure even, precise pressure on glass to minimize the chance of breakage. Clamp is easily adjusted to vary holding angle and distance from the stand. Jaws are coated with non-slip vinyl.

Kontes Article No.	Maximum Grip Size (mm)	Overall Length (cm)	Extension Arm Length (cm)	Extension Arm O.D. (mm)	Case Qty.	Case Price
675700-0025	25 (1")	17 (6 1/2")	11 (4 1/2")	8 (5/16")	1	24.07
675700-0057	57 (2 1/4")	22 (8 3/4")	13 (5 1/4")	11 (7/16")	1	25.01
675700-0089	89 (3 1/2")	27 (10 1/2")	15 (6")	13 (1/2")	1	29.89

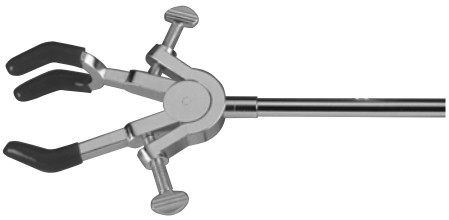


675725

Two-Prong

Flat, vinyl covered clamp jaws hold beakers and flasks firmly at any angle, with variable distance from support. One jaw is fixed, other opens against a stainless-steel compression spring. Opening is gradual to maximum angle, without binding. Noncorrosive, easy-to-clean clamps are nickel-plated zinc with a seamless nickel-plated brass extension tube, brass compressing screw, and pivot pin.

Kontes Article No.	Maximum Grip Size (mm)	Overall Length (cm)	Extension Arm Length (cm)	Extension Arm O.D. (mm)	Case Qty.	Case Price
675725-0038	38 (1 1/2")	20 (8")	11 (4 1/2")	11 (7/16")	1	23.29
675725-0064	64 (2 1/2")	23 (9")	13 (5 1/4")	11 (7/16")	1	22.22



675710

Three Prong, Open Yoke

Three prong extension clamp features an open yoke design for minimum contaminant buildup and easy cleaning. Open yoke allows the full depth of the clamp to be used unobstructed by the yoke, springs or adjusting screws. Two separate adjustment screws ensure precise pressure on glass. Supplied with nonslip vinyl coating on jaws and fiberglass finger covers.

Kontes Article No.	Maximum Grip Size (mm)	Overall Length (cm)	Extension Arm Length (cm)	Extension Arm O.D. (mm)	Case Qty.	Case Price
675710-0025	25 (1")	17 (6.5")	11 (4.5")	8 (.3125 ")	1	35.48
675710-0057	57 (2.25")	22 (8.75")	13 (5.125")	13 (.5")	1	37.48
675710-0089	89 (3.5")	27 (10.5")	15 (6")	13 (.5")	1	39.42

Adjustable Loop

Stainless clamp with flexible 5 mm wide band that loops around object and is tightened with knurled nut at end of tubular arm. Ideal for supporting lightweight apparatus.

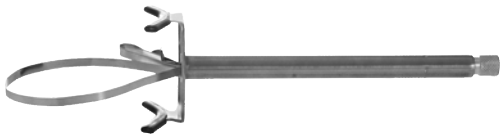


675600

Kontes Article No.	Maximum Band Opening Diameter (mm)	Extension Arm Length (cm)	Case Qty.	Case Price
675600-0005	70 (2 3/4")	12.7 (5")	1	24.59
675600-0008	90 (3 1/2")	20.3 (8")	1	27.79
675600-0012	110 (4 1/4")	30.5 (12")	1	29.63

Adjustable Loop, Double Support

Stainless clamp with flexible 5 mm wide band and two rubber covered v- shaped supports 2 inches apart. This style gives added support and is ideal for holding heavy apparatus.

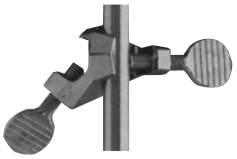


675650

Kontes Article No.	Maximum Band Opening Diameter (mm)	Extension Arm Length (cm)	Extension Arm O.D. (mm)	Case Qty.	Case Price
675650-0005	140 (5 1/2")	12.7 (5")	13 (1/2")	1	36.50
675650-0008	200 (7 3/4")	20.3 (8")	13 (1/2")	1	38.48
675650-0012	110 (4 1/4")	30.5 (12")	13 (1/2")	1	46.29

Holder, 3/4"

Used to attach clamps at right angles.



675750

Kontes Article No.	Maximum Rod Grip Size (mm)	Case Qty.	Case Price
675750-0000	19 (3/4")	1	22.26

Holder, 3/8", Lattice Connector

Aluminum clamp used to secure 675700-0025.extension clamps at right angles with 3/8" support rods.

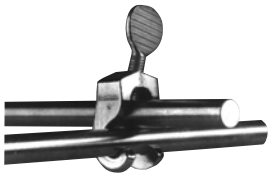


280500

Kontes Article No.	Maximum Rod Grip Size (mm)	Case Qty.	Case Price
280500-0000	9.5 (3/8")	1	16.42

Hook Connector

Designed to lock two 13 mm (1/2") framework rods at a 90° angle. Thumb screw allows installation without disassembling frame.



675775

Kontes Article No.	Rod Grip Size (mm)	Case Qty.	Case Price
675775-0000	13 (1/2")	1	8.17

Lattice Connector

Designed to lock two framework rods at a 90° angle. Allen screws are used for compression.



675660

Kontes Article No.	Rod Diameter (mm)	Case Qty.	Case Price
675660-0000	13 (1/2")	1	10.84

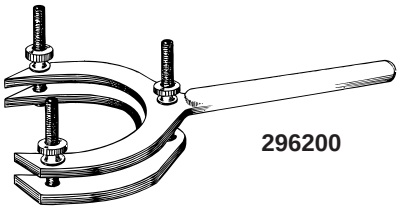


864210

Power Hold Clamp

Precision aluminum clamp has large knobs for a powerful grip. Holds rods from 3/8" to 5/8" in diameter. Safety stop with 5/8" diameter hole is provided with each clamp.

Kontes Article No.	Case Qty.	Case Price
864210-0000	1	62.57

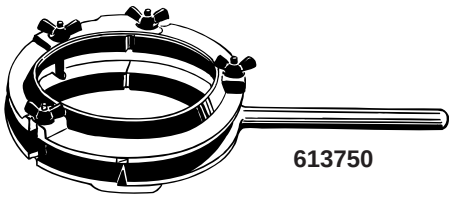


296200

Clamps, Reaction Flask

Aluminum construction to connect tops to flasks. Wing nuts are spaced to assure good compression for sealing the system.

Kontes Article No.	Fits Ground Flange I.D. (inches)	Fits O-Ring Conn. Size	Case Qty.	Case Price
296200-0000	2	-	1	50.83
613750-0000	4	100	1	143.17

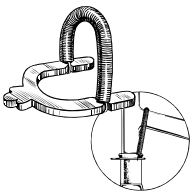


613750

$ KEM-KLAMP®, Standard Taper

Yoke-type designed to maintain tension on assembled $ apparatus. This clamp permits quick set-ups without using fragile glass hooks. The spring extends over hose connectors or adapters as shown. Fabricated from stainless steel, this clamp is corrosion resistant and unaffected by high temperatures.

Kontes Article No.	Fits $ Joint Sizes	Case Qty.	Case Price
675500-1420	14/20, 14/35	1	10.11
675500-1922	19/22, 19/38	1	6.13
675500-2440	24/40, 24/25	1	6.54
675500-2942	29/42, 29/26	1	6.69
675500-3445	34/45, 34/28	1	6.98



675500

$ Polyacetal, Standard Taper

An easy to use $ positive closure clamp made of tough, color coded plastic. Clamp will not scratch glass and can be autoclaved to 200°C. This clamp has good chemical resistance at a lower cost than metal clips.

Kontes Article No.	Fits $ Joint Sizes	Color Coded	Case Qty.	Case Price
675300-0010	10/18, 10/30	Aqua	12	34.70
675300-0014	14/20, 14/35	Yellow	12	37.72
675300-0019	19/22, 19/38	Blue	12	38.46
675300-0024	24/40, 24/25	Green	12	39.53
675300-0029	29/42, 29/26	Red	12	40.77
675300-0034	34/45, 34/28	Orange	12	43.52
675300-0040	40/35, 40/50	Gold	12	45.29
675300-0045	45/50	Brown	12	51.63

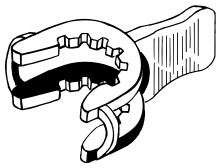


675300

Polyacetal, Spherical

An easy to use positive closure clamp made of tough, color coded plastic for use with ball and socket joints. Clamp will not scratch glass and can be autoclaved to 200°C. This clamp has good chemical resistance at a lower cost than metal clips.

Kontes Article No.	Fits Joint Sizes	Color Coded	Case Qty.	Case Price
675310-0013	12/2, 12/3, 12/5	Violet	12	54.89
675310-0019	18/7, 18/9	Lt. Blue	12	42.47
675310-0029	28/12, 28/15	Dk. Red	12	59.78
675310-0035	35/20, 35/25	Lt. Orange	12	62.71

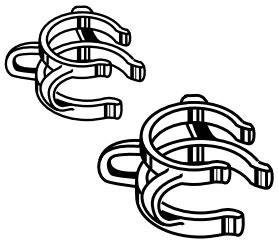


675310

Nickel-Plated, Standard Taper

These metal standard taper clamps are used for increased resistance to heat and cracking. They can withstand temperatures as high as 200°C and they have excellent chemical resistance. When using the 729000-1022 concentrator tube heating mantle, these clamps are used to secure the concentrator tube to the concentrator flask.

Kontes Article No.	Fits Joint Sizes	Case Qty.	Case Price
675320-0014	14/20, 14/35	6	40.67
675320-0019	19/22, 19/38	6	40.80
675320-0024	24/25, 24/40	6	43.08
675320-0029	29.26, 29/42	6	43.14



675320

Stainless Steel, Standard Taper

A clamp made of corrosion-free stainless spring wire.

Kontes Article No.	Fits Joint Sizes	Case Qty.	Case Price
675400-1420	14/20, 14/35	12	109.48
675400-2440	24/40, 24/25	12	109.48



675400

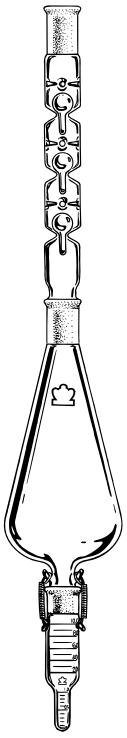
Pinch, Spherical and O-Ring Connector

Used to assemble component parts of spherical and o-ring connector arms. The size corresponds to the ball diameter, the first figure in designating the size of a joint. Sizes 12-A, 18-A and larger have a screwlocking device.

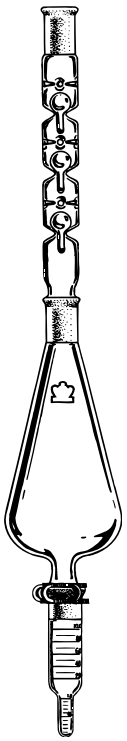
Kontes Article No.	Size	Screw Lock Provided	Fits O-Ring Conn. Size	Case Qty.	Case Price
675000-0012	12	No	5	1	11.14
675000-1221	12A	Yes	5	1	24.07
675000-0018	18	No	7-9	1	23.29
675000-1821	18A	Yes	7-9	1	24.07
675000-0028	28	Yes	12-15	1	16.08
675000-0035	35	Yes	20-25	1	19.36
675000-0040	40	Yes	-	1	36.64
675000-0050	50	Yes	30	1	49.39
675000-0065	65	Yes	40	1	68.47
675000-0075	75	Yes	50	1	83.99
675000-0102	102	Yes	75	1	169.90



675000



570025



570035

Evaporative, Kuderna-Danish, with Graduated Concentrator Tube

Developed in the laboratories of Julius Hyman and Company for the concentration of trace amounts of sample dissolved in organic solvents. It is very useful in sample preparation before analysis with solvents such as petroleum ether or hexane.

Preparation involves filling the flask to between 40 to 60 percent of capacity. To prevent sample loss initially, the column should be pre-wet with about 1 mL of the solvent used in the concentration. The column is designed to speed evaporation with reduced hold-up.

The charged assembly should be placed over a vigorously boiling water bath. The water level should be maintained just below the lower $ joint and the apparatus mounted so that the lower rounded surface of the flask is bathed in steam. The final sample remains in the lower tube for further analysis. Lower tube is ungraduated.

If solvent is allowed to escape, the entire assembly should be set up in a hood. For solvent recovery, a 547300 or 547400 Solvent Recovery Apparatus may be added to this unit. Series 570025 and 570035 have graduated concentrator tubes.

With Graduated Concentrator Tubes, Hooks and Springs

Kontes Article No.	Flask Cap. (mL)	Tube Cap. (mL)	Tube Graduations x Subdiv. (mL)	Approx. Overall Height (mm)	Case Qty.	Case Price
570025-0250	250	10	0-1 x 0.1, 2-10 x 1	560	1	185.19
570025-0500	500	10	0-1 x 0.1, 2-10 x 1	600	1	173.29

Component Parts

503000-0121	Column, 3 Chamber, $ 24/40	1	90.95
570001-0250	Flask, $ 24/40 Top, $ 19/22 Bottom, 250 mL	1	60.19
570001-0500	Flask, $ 24/40 Top, $ 19/22 Bottom, 500 mL	1	66.48
570050-1025	Concentrator Tube, $ 19/22, 10 mL	1	40.23
662750-0012	Springs,1/2" , Pkg./10 Pairs (1 Pair Supplied)	20	17.33

With Graduated Concentrator Tubes and Polyacetal Clamp

Kontes Article No.	Flask Cap. (mL)	Tube Cap. (mL)	Tube Graduations x Subdiv. (mL)	Approx. Overall Height (mm)	Case Qty.	Case Price
570035-0250	250	10	0-1 x 0.1, 2-10 x 1	560	1	185.19
570035-0500	500	10	0-1 x 0.1, 2-10 x 1	600	1	191.80

Component Parts

503000-0121	Column, 3 Chamber, $ 24/40	1	90.95
570011-0250	Flask, $ 24/40 Top, $ 19/22 Bottom, 250 mL	1	60.19
570037-0500	Flask, $ 24/40 Top, $ 19/22 Bottom, 500 mL	1	66.48
570051-1025	Concentrator Tube, $ 19/22, 10 mL	1	40.23
675300-0019	Polyacetal Clamp, Fits $ 19/22 Joints, Pkg./12 (1 Supplied)	12	38.46

Evaporative, Kuderna-Danish

Developed in the laboratories of Julius Hyman and Company for the concentration of trace amounts of sample dissolved in organic solvents. It is very useful in sample preparation before analysis with solvents such as petroleum ether or hexane.

Preparation involves filling the flask to between 40 to 60 percent of capacity. To prevent sample loss initially, the column should be pre-wet with about 1 mL of the solvent used in the concentration. The column is designed to speed evaporation with reduced hold-up.

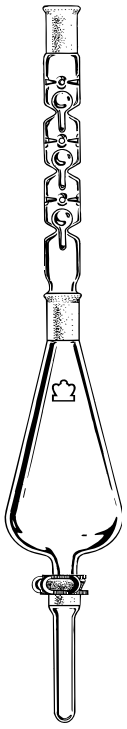
The charged assembly should be placed over a vigorously boiling water bath. The water level should be maintained just below the lower ⧩ joint and the apparatus mounted so that the lower rounded surface of the flask is bathed in steam. The final sample remains in the lower tube for further analysis. Lower tube is ungraduated.

If solvent is allowed to escape, the entire assembly should be set up in a hood. For solvent recovery, a 547300 or 547400 Solvent Recovery Apparatus may be added to this unit. Series 570025 and 570035 have graduated concentrator tubes.

Kontes Article No.	Flask Cap. (mL)	Tube Cap. (mL)	Approx. Overall Height (mm)	Case Qty.	Case Price
570010-0250	250	10	540	1	173.29
570010-0500	500	15	620	1	179.90

Component Parts

503000-0121	Column, 3 Chamber, ⧩ 24/40	1	90.95
570011-0250	Flask, ⧩ 24/40 Top, ⧩ 19/22 Bottom, 250 mL	1	60.19
570037-0500	Flask, ⧩ 24/40 Top, ⧩ 19/22 Bottom, 500 mL	1	66.48
570012-0250	Concentrator Tube, ⧩ 19/22, 10 mL	1	23.82
570012-0500	Concentrator Tube, ⧩ 19/22, 15 mL	1	23.82
675300-0019	Polyacetal Clamp, Fits ⧩ 19/22 Joints, Pkg./12 (1 Supplied)	12	38.46



570010

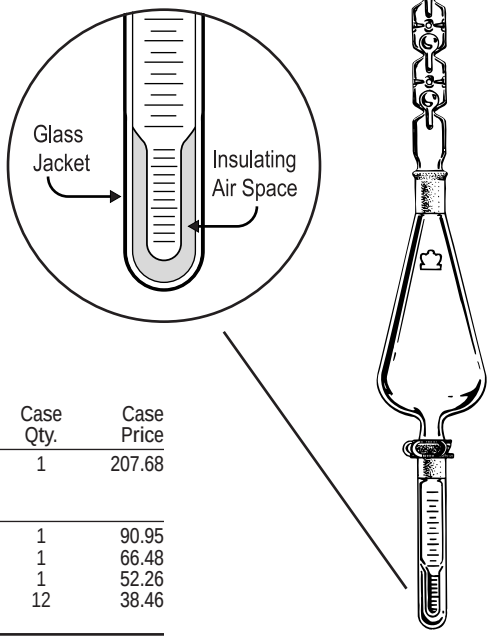
Evaporative, Kuderna-Danish, with SLOW-DRY® Concentrator Tube

• Reduces Risk of Concentrating Sample to Dryness

• Compatible with Existing Water Baths

The SLOW-DRY tip creates an insulated air space around the constricted end of the tube. This shields the sample and provides a temperature buffer that prevents the sample from being overly concentrated.

These tubes are especially useful when simultaneously concentrating several samples. Jacketed concentrator tubes provide a larger window of time for a safe, convenient and controlled rempval of heat sources.



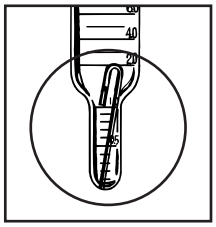
570040

With Polyacetal Clamp and Graduated Tube

Kontes Article No.	Description	Case Qty.	Case Price
570040-0500	Complete, 500 mL	1	207.68

Component Parts

503000-0121	Column, 3 Chamber, ⧩ 24/40	1	90.95
570037-0500	Flask, ⧩ 24/40 Top, ⧩ 19/22 Bottom, 500 mL	1	66.48
570071-1525	SLOW-DRY Concentrator Tube, ⧩ 19/22, 15 mL	1	52.26
675300-0019	Polyacetyl Clamp, Fits ⧩ 19/22 Joints, Pkg./12 (1 Supplied)	12	38.46

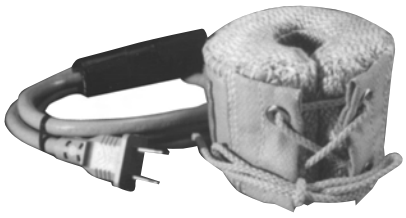


569351

Ebullator

A micro boiling stick designed to prevent bumping.

Kontes Article No.	Approx. Overall Height x Width (mm)	Use With	Case Qty.	Case Price
569351-0000	42 x 7	569350, 569355, 569360 and 569365	12	40.23



729000

Heating Mantle for Concentrator Tubes

A column type heating mantle with a 7/8" ID to accommodate evaporative concentrator tubes and similar size items with straight-walled glass tubing. The mantle is cylindrical and open through the ID to allow positioning on the glassware. The mantle can be supported with a clamp (no plastic tips) or laced tight against the glassware to prevent the mantle from slipping off. The concentrator tube is placed through the mantle so the lower tip is well below the bottom opening of the mantle. This will help prevent the sample from being evaporated to dryness. The mantle is plugged into a mantle control (Kontes No. 730500 or several mantles can be plugged into an utility outlet strip which gets plugged into the mantle control for operating multiple units at the same temperature. The unit is rated 50/60 hertz and 1 amp, with a maximum temperature rating of 450 °C.

Supplied with a separable 4 foot, 2 wire SJT cord.

Kontes Article No.	Hole Diameter (mm)	Watts	Volts	Case Qty.	Case Price
729000-1022	22	100	115	1	238.38

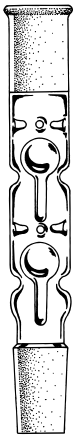


503000

Column, Snyder

Snyder distillation column with floating ball valves for improved vapor-liquid contact.

Kontes Article No.	⅋ Joints	Column Chamber Length (mm)	Number of Chambers	Approx. Height (mm)	Case Qty.	Case Price
503000-0121	24/40	225 x 50	3	305	1	90.95
503000-0122	24/40	375 x 50	6	455	1	160.06



503100

Column, Improved Snyder

Improved design speeds evaporation and reduces hold-up within the column. Recoveries are excellent; i.e., with pesticides such as Lindane and Parathion in petroleum ether or ethyl ether. Higher boiling solvents may also be used to good advantage. Each section is approximately 50 mm long.

Kontes Article No.	⅋ Joints	Column x Chamber Length (mm)	Number of Chambers	Approx. Height (mm)	Case Qty.	Case Price
503100-0002	24/40	120 x 50	2	200	1	103.19
503100-0003	24/40	170 x 50	3	250	1	111.45

Column, Micro Snyder Distilling

Snyder distilling column with floating ball valves for improved vapor-liquid contact.

With Hooks

Kontes Article No.	Number of Chambers	Joint	Column x Chamber Length (mm)	Approx. Height (mm)	Case Qty.	Case Price
569001-0219	2	19/22	115 x 30	137	1	109.48
569001-0319	3	19/22	145 x 30	167	1	136.26

Without Hooks

Kontes Article No.	Number of Chambers	Joint	Column x Chamber Length (mm)	Approx. Height (mm)	Case Qty.	Case Price
569011-0219	2	19/22	115 x 30	137	1	109.48
569011-0319	3	19/22	145 x 30	167	1	136.26



569001



569011

Column, Micro Distilling

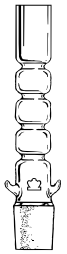
Micro-type distilling column designed to prevent flooding while retaining residue material.

With Hooks

Kontes Article No.	Number of Chambers	Joint	Column x Chamber Length (mm)	Approx. Height (mm)	Case Qty.	Case Price
569251-0319	3	19/22	100 x 15	122	1	57.40
569251-0324	3	24/25	100 x 15	125	1	58.22

Without Hooks

Kontes Article No.	Number of Chambers	Joint	Column x Chamber Length (mm)	Approx. Height (mm)	Case Qty.	Case Price
569261-0319	3	19/22	100 x 15	122	1	57.40
569261-0324	3	24/25	100 x 15	125	1	58.22



569251



569261

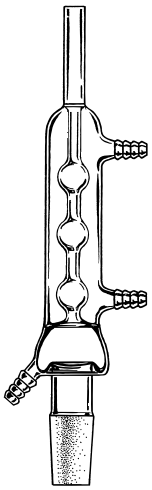
Condenser, Solvent Recovery, Joint

A versatile solvent condenser designed to recover solvents escaping during evaporative concentrations. Allows users to work outside of a hood.

Design suggested by R. Don Wauchope, U.S.D.A.

Kontes Article No.	Joint	Hose Connections	Approx. Height (mm)	Case Qty.	Case Price
293450-0000	14/20	#1	162 x 80	1	100.52
547400-0000	24/40	#2	267 x 90	1	161.37

Ref: Analytical Chemistry Vol.47, No.11, Pg.1879, September 1975.



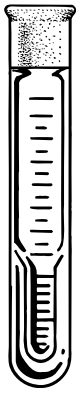
293450
547400

Tube, SLOW-DRY® Concentrator

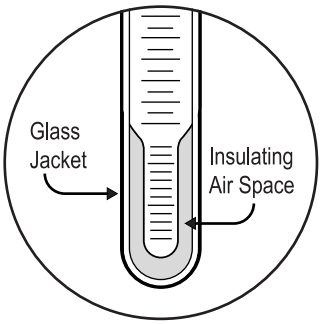
The Slow-Dry concentrator tube reduces the risk of concentrating a sample to dryness. Its unique tip features an insulated air space around the constricted end of the tube, shielding the sample and providing a protective temperature buffer. Secure to assembly with 675300 polyacetal clamps, not supplied.

Without Hooks

Kontes Article No.	Cap. (mL)	Joint	Grads. x Subdiv. (mL)	Approx. Height (mm)	Case Qty.	Case Price
570071-1025	10	19/22	0-1 x 0.1, 2-10 x 1	113	1	49.86
570071-1525	15	19/22	0-1 x 0.1, 2-15 x 1	130	1	52.26
570071-2525	25	19/22	0-1 x 0.1, 2-25 x 1	178	1	53.83
570071-2526	25	24/25	0-1 x 0.1, 2-25 x 1	183	1	55.69

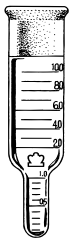


570071

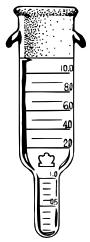


Tube, Concentrator

Use with Kuderna-Danish and other concentrators. May be stoppered for analysis or storage. Secure to assembly with 662750 springs or 675300 clamps, not supplied.



570051



570050

With Hooks

Kontes Article No.	Cap. (mL)	Joint	Grads. x Subdiv. (mL)	Approx. Height (mm)	Case Qty.	Case Price
570050-0425	4	19/22	0-2 x 0.1 and at 3 and 4	100	1	39.29
570050-1025	10	19/22	0-1 x 0.1, 2-10 x 1	105	1	40.23
570050-1026	10	24/25	0-1 x 0.1,2-10 x 1	100	1	41.79
570050-1525	15	19/22	0-1 x 0.1, 2-15 x 1	122	1	43.13
570050-1526	15	24/25	0-1 x 0.1, 2-15 x 1	125	1	45.09
570050-2525	25	19/22	0-1 x 0.1, 2-25 x 1	170	1	46.70
570050-2526	25	24/25	0-1 x 0.1	140	1	48.27

Without Hooks

Kontes Article No.	Cap. (mL)	Joint	Grads. x Subdiv. (mL)	Approx. Height (mm)	Case Qty.	Case Price
570051-0425	4	19/22	0-2 x 0.1 and at 3 and 4	100	1	39.29
570051-1025	10	19/22	0-1 x 0.1, 2-10 x 1	105	1	40.23
570051-1026	10	24/25	0-1 x 0.1, 2-10 x 1	100	1	41.79
570051-1525	15	19/22	0-1 x 0.1, 2-15 x 1	122	1	43.13
570051-1526	15	24/25	0-1 x 0.1, 2-15 x 1	125	1	45.09
570051-2525	25	19/22	0-1 x 0.1, 2-25 x 1	170	1	46.70
570051-2526	25	24/25	0-1 x 0.1	140	1	48.27

Accessories

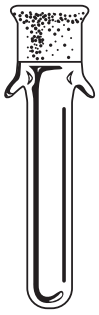
850500-1922	Glass Pennyhead Stopper, 19/22	1	15.27
850500-2425	Glass Pennyhead Stopper, 24/25	1	24.66

Tube, Concentrator

Use with Kuderna-Danish and other evaporative concentrators. May be stoppered for later analysis or storage. Secure to assembly with 662750 springs or 675300 clamps, not supplied.



570002



570012

With Hooks

Kontes Article No.	Cap. (mL)	Joints	Approx. Overall Height (mm)	Case Qty.	Case Price
570002-0250	10	19/22	80	1	23.82
570002-0500	15	19/22	120	1	23.82

Without Hooks

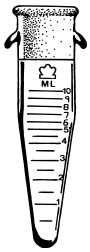
Kontes Article No.	Cap. (mL)	Joints	Approx. Overall Height (mm)	Case Qty.	Case Price
570012-0250	10	10	80	1	23.82
570012-0500	15	15	120	1	23.82

Tube, Concentrator, Tapered Style

Optional concentrator tube for use with Kuderna-Danish and other concentrators. May be detached from the complete assembly and stoppered for analysis or storage. Secure to assembly with 662750 springs or 675300 polyacetal clamps, not supplied.



570061



570060

With Hooks

Kontes Article No.	Cap. (mL)	Joint	Grads.x Subdiv. (mL)	Approx. Overall Height (mm)	Case Qty.	Case Price
570060-0519	10	19/22	0-5 x 0.5 5-10 x 1	100	1	38.10

Without Hooks

Kontes Article No.	Cap. (mL)	Joint	Grads.x Subdiv. (mL)	Approx. Overall Height (mm)	Case Qty.	Case Price
570061-0519	10	19/22	0-5 x 0.5 5-10 x 1	100	1	38.10

Solvent Recovery System, Linear, for KD Evaporative Concentrators

- Three Position Linear System
- Heating mantle, controller, splash guard, clamps, and supports provided with the complete system
- Power: 15 amps - 120 volts
- Refrigerating circulator recommended for system water coolant: <4°C
- Proper ventilation under a hood is strongly recommended

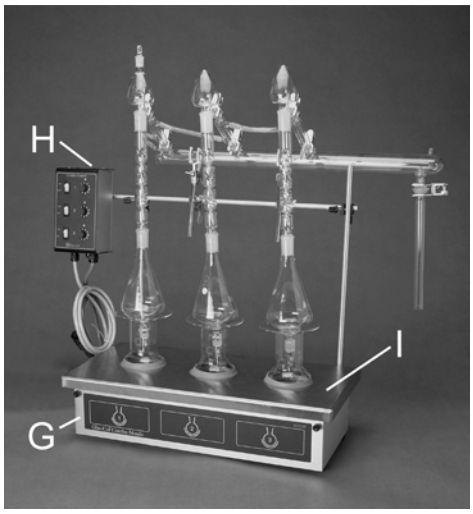
Kontes Article No.	Description	Case Qty.	Case Price
545000-0120	Complete K-D Linear Solvent Recovery System (Parts A-K)	1	4,002.30

Solvent Recovery Components

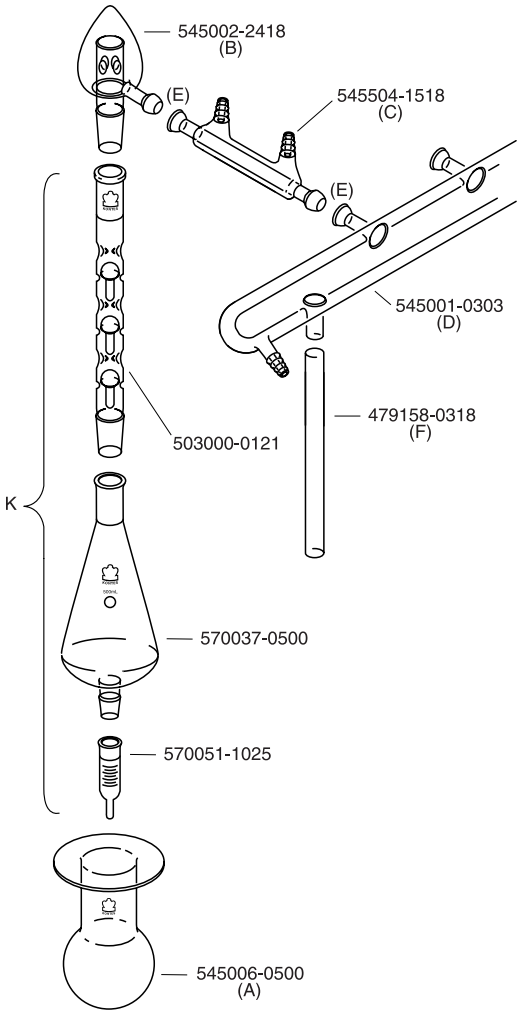
Kontes Article No.	Diagram Letter	Description	System Qty.	Case Qty.	Case Price
545006-0500	A	Water Bath Flask, 500 mL	3	1	51.42
545002-2418	B	Column Top	3	1	102.66
545504-1518	C	Condenser,150 mm	3	1	94.01
545001-0303	D	Main Manifold, 3-Place	1	1	511.53
675000-1821	E	Pinch Clamp, 18A	6	1	24.07
479158-0318	F	PTFE Tubing, 6.5"	1	2	5.52
726123-4051	G	Mantel and Support	1	1	1,119.08
726325-0301	H	Mantel Controllers	1	1	455.06
731000-0503	I	Splash Guard	1	1	394.01
869775-0738	J	Water Tubing, 3/8 in. x 7 Ft.	1	1	8.75
570035-0500	K	K-D Evaporator Concentrator	3	1	191.80

Kuderna-Danish Glassware Components "K"

Kontes Article No.	Description	Case Qty.	Case Price
570051-1025	Concentrator Tube, 10 mL, ⅋ 19/22, 1 Supplied	1	40.23
570037-0500	Evaporative Flask, 500 mL, 1 Supplied	1	66.48
503000-0121	Distilling Column, Size 121, 1 Supplied	1	90.95
675300-0019	Clamp, Fits ⅋ 19/22	12	38.46



545000



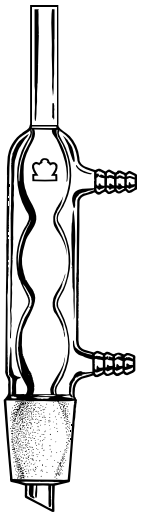


Kuderna-Danish Concentrator with SLOW-DRY® Concentrator Tube

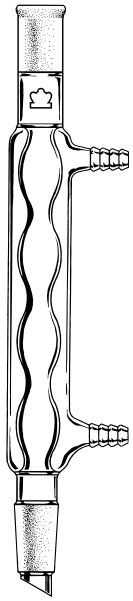
- Reduces risk of concentrating sample to dryness
- Compatible with existing water baths

Optional K-D allows more time to remove the heat source during sample concentrations. The SLOW-DRY tip creates an insulated air space around the constricted end of the tube. This shields the sample and provides a temperature buffer that prevents the sample from being overly concentrated. These tubes are especially useful when simultaneously concentrating several samples. Jacketed concentrator tubes provide a larger window of time for a safe, convenient and controlled removal of heat sources.

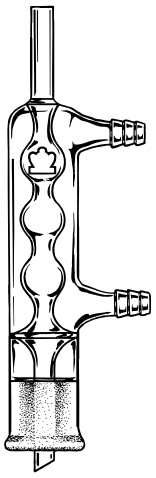
Kontes Article No.	Description	Case Qty.	Case Price
570040-0500	Complete	1	207.68
Component Parts			
503000-0121	Column, 3 Chamber, ⅋ 24/40	1	90.95
570037-0500	Flask, ⅋ 24/40 Top, ⅋ 19/22 Bottom, 500 mL	1	66.48
570071-1525	SLOW-DRY Concentrator Tube, ⅋ 19/22,15 mL	1	52.26
675300-0019	Polyacetal Clamp, Fits ⅋ 19/22 Joints (1 Supplied)	12	38.46



456000
431500



431000



283250

Allihn, Full Length ⅋ Joints

Allihn reflux condenser with a ⅋ drip joint and a ⅋ outer at top.

Kontes Article No.	⅋ Joints	Jacket Length (mm)	Hose Connections	Approx. Overall Height (mm)	Case Qty.	Case Price
431000-2420	24/40	200	#2	370	1	97.55
431000-2425	24/40	250	#2	425	1	101.80
431000-2430	24/40	300	#2	470	1	105.70
431000-2440	24/40	400	#2	570	1	115.17
431000-2920	29/42	200	#2	380	1	102.78
431000-2930	29/42	300	#2	480	1	113.21
431000-2940	29/42	400	#2	580	1	122.65

Allihn, Full Length ⅋ Joints

Allihn reflux condenser with a straight outlet tube at top and a water cooled ⅋ inner drip joint at bottom. For use in many refluxing operations including Soxhlet extractions.

Kontes Article No.	⅋ Joints	Jacket Length (mm)	Hose Connections	Approx. Overall Height (mm)	Case Qty.	Case Price
431500-2430	24/40	325	#2	470	1	100.49
456000-0021	34/45	190	#2	275	1	96.58
456000-0022	45/50	260	#2	365	1	120.21
456000-0023	55/50	300	#2	405	1	139.27
456000-0024	71/60	350	#3	430	1	162.92
456000-0025	103/60	400	#3	535	1	497.94
456000-0026	145/60	500	#4	645	1	1,225.82

Allihn, Micro, ⅋ 19/22 Joint

Component of Soxhlet extraction apparatus 292010.

Kontes Article No.	⅋ Joint	Hose Connections	Approx. Overall Height (mm)	Case Qty.	Case Price
283250-0000	19/22	#1	162	1	66.24

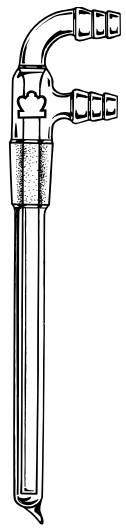
Hose Connector Tubing Size Chart

Hose Connector Size	Fits Flexible Tubing I.D.
1	1/4”
2	3/8”
3	1/2”
4	3/4”

Cold Finger, ⅋ Joint

Extended offset lower tip for drop control.

Kontes Article No.	⅋ Joint	Hose Connections	Approx. Overall Height (mm)	Approx. Length Below Joint (mm)	Case Qty.	Case Price
282000-0000	14/20	#1	165	100	1	55.20
518501-0000	29/42	#2	305	195	1	70.15

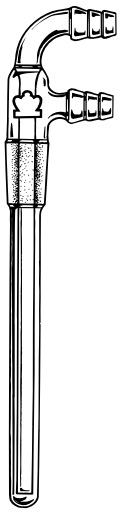


282000
518501

Cold Finger, Full Length ⅋ 45/50 Joint

Similar to 282000 but without extended lower tip.

Kontes Article No.	⅋ Joint	Hose Connections	Approx. Overall Height (mm)	Approx. Length Below Joint (mm)	Case Qty.	Case Price
479103-0000	45/50	#2	300	140	1	106.82



479103

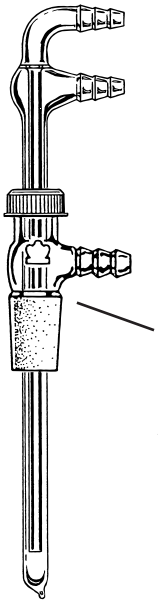
Cold Finger, Adjustable Height

With offset drip tip. Use with 179700 or 179750 accessory BEVEL-SEAL™ adapters.

Kontes Article No.	Dia. (mm)	Fits in ⅋ Joint	Hose Conn.	Approx. Overall Height (mm)	Approx. Length Below Bottom Hose Connect (mm)	Case Qty.	Case Price
282010-0000	8	14/20	#1	183	150	1	38.88
282020-0000	10	19/22	#1	210	165	1	44.49

BEVEL-SEAL Adapters

Kontes Article No.	⅋ Joint	Accommodation Range (mm)	Case Qty.	Case Price
179700-0814	14/20	5-8	1	27.02
179750-0814	14/20	5-8	1	31.88
179700-1119	19/22	8-11	1	32.76
179750-1119	19/22	8-11	1	46.57



179700
179750
Accessory
Adapter

282010
282020
444200

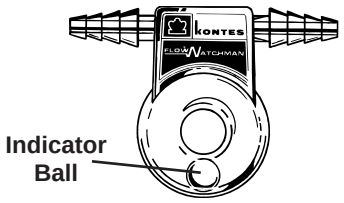
FLOW-WATCHMAN®

A device for the visual indication of liquid flow. Flow indication is visible at a distance.

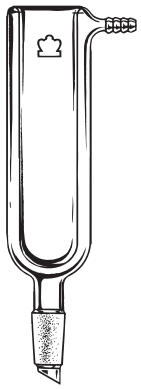
Usable with water down to a flow range of approximately 100 mL/minute, which is adequate for even the smallest cold finger condensers. The upper flow limit is in excess of 1 liter/minute. Speed of ball rotation is a semi-quantitative measure of water flow. Unit operates in any position.

Molded of clear polycarbonate with an inert nylon indicator ball. Light in weight. Requires no auxiliary support.

Kontes Article No.	Hose Connections	Maximum (psig)	Approx. Overall Height x Width x Thickness (mm)	Case Qty.	Case Price
626250-0000	#1	10	57 x 76 x 12	1	16.35



626250

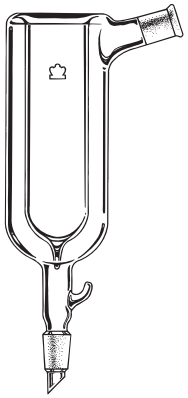


457500

Dewar, Full Length ⅋ Joints

Large top opening for easy introduction of dry ice, dry ice/alcohol mixtures or liquid nitrogen. These coolants provide rapid condensation of volatile components.

Kontes Article No.	⅋ Joint	I.D. Depth x Dia. (mm)	Hose Connection	Approx. Overall Height (mm)	Case Qty.	Case Price
457500-2420	24/40	200 x 40	#2	295	1	147.48
457500-2425	24/40	250 x 50	#3	345	1	185.32
457500-2930	29/42	300 x 70	#3	407	1	272.74

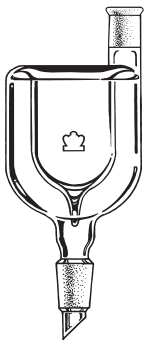


283400
457750

Dewar, ⅋ Joints

For rapid cooling of volatile solvents. Large top opening for easy introduction of coolant mixtures such as solid carbon dioxide/alcohol, dry ice/alcohol, dry ice, or liquid nitrogen. Lower joint will work with 675500 Kem-Klamps® or polyacetal ⅋ clamps.

Kontes Article No.	⅋ Joints	Approx. Overall Height x Width (mm)	Approx. Coolant Capacity (mL)	Case Qty.	Case Price
283400-0000	14/20	210 x 105	200	1	131.81
457750-2425	24/40	347 x 110	650	1	279.27



283410

Dewar, Low Form, ⅋ 14/20 Joints

Designed for use with dry-ice/solvent mixtures or liquid nitrogen. Vertically positioned ⅋ joint allows the introduction of precooled reactants using a syringe. Useful for refluxing over a long period of time under either an anhydrous or a nitrogen atmosphere.

Kontes Article No.	⅋ Joints	Approx. Overall Height x Width (mm)	Approx. Coolant Capacity (mL)	Case Qty.	Case Price
283410-0000	14/20	145 x 105	250	1	120.06

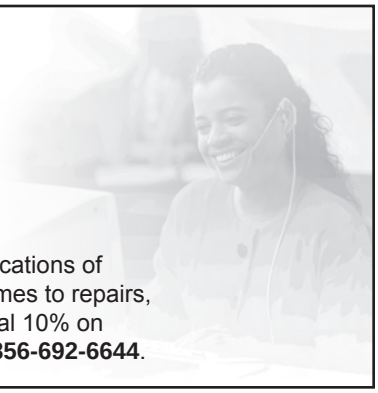
Hose Connector Tubing Size Chart

Hose Connector Size	Fits Flexible Tubing I.D.
1	1/4"
2	3/8"
3	1/2"
4	3/4"



- **Custom Fabrications**
- **Quality Repairs**
- **Modifications of All Kinds**
- **No Order Too Small**
- **Quick Turnaround**

KONTES
custom glass shop
*call toll-free **800-682-6644***
customglass@kimble-chase.com

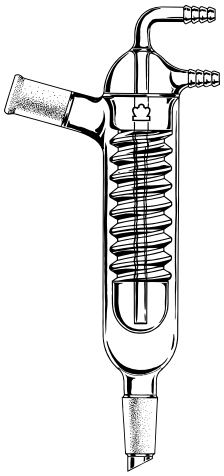


Contact the **Kontes Custom Glass Shop** at KIMBLE CHASE for modifications of standard products or fabrication of your unique designs. And when it comes to repairs, we can save you up to 75% of the cost of a new item. Save an additional 10% on repairs of Kontes or Kimble Brand products. Fax your requirements to **856-692-6644**.

Friedrich, Full Length ⅋ Joints

Specially designed to provide a long vapor path, good heat transfer and anti-flooding characteristics. Inclined ⅋ outer joint on the side and two hose connectors at the top. ⅋ Inner drip joint at the bottom. Molded inner cold finger.

Kontes Article No.	⅋ Joints	Jacket Length (mm)	Hose Connections	Approx. Overall Height (mm)	Case Qty.	Case Price
437000-2440	24/40	225	#2	325	1	159.20
437000-2942	29/42	225	#2	330	1	160.50

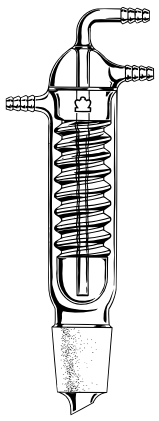


437000

Friedrich, Full Length ⅋ Joints

Water inlet and outlet located above ring-sealed inner condensing tube. Has ⅋ inner drip joint and side outlet for drying tube, etc. Molded inner cold finger. Used primarily in reflux mode and Soxhlet extractions.

Kontes Article No.	⅋ Joint	Cold Finger Length (mm)	Hose Connections	Approx. Overall Height (mm)	Case Qty.	Case Price
456250-0021	34/45	190	#2	315	1	148.47
456250-0022	45/50	190	#2	340	1	160.28
456250-0023	55/50	190	#2	343	1	169.50

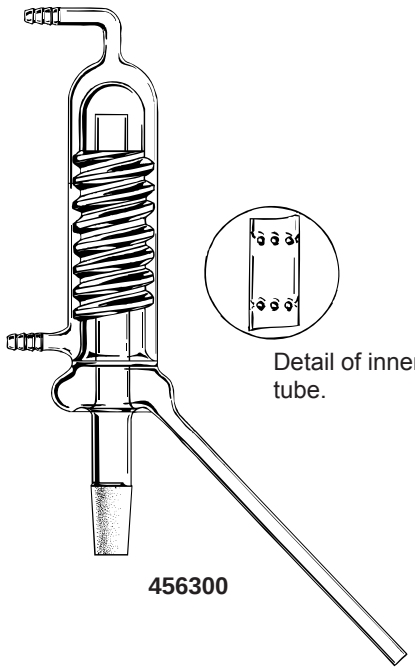


456250

Friedrich, with Take-Off Tube, Full Length ⅋ 24/40 Joints

Suitable for vertical distillation assembly. Molded inner spiral provides surface area for the condensation of the product. Designed with 150 mm O.D. delivery tube for product recovery.

Kontes Article No.	⅋ Joints	Cold Finger Length (mm)	Hose Connections	Approx. Overall Height (mm)	Case Qty.	Case Price
456300-2440	24/40	200	#2	340	1	210.10



Detail of inner tube.

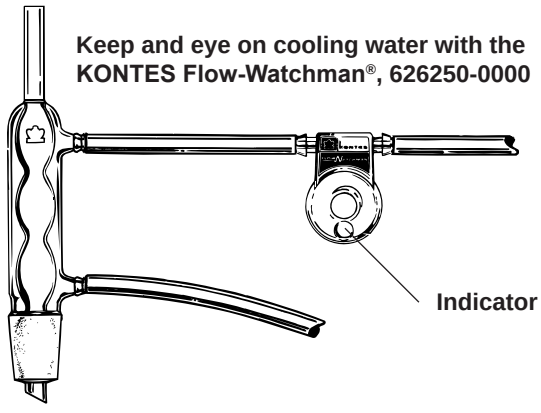
456300

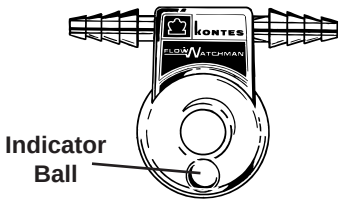
FLOW-WATCHMAN®

A device for the visual indication of liquid flow. Flow indication is visible at a distance. Usable with water down to a flow range of approximately 100 mL/minute, which is adequate for even the smallest cold finger condensers. The upper flow limit is in excess of 1 liter/minute. Speed of ball rotation is a semi-quantitative measure of water flow. Unit operates in any position.

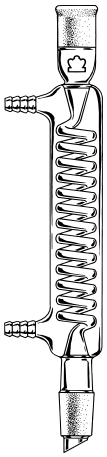
Molded of clear polycarbonate with an inert nylon indicator ball. Light in weight. Requires no auxiliary support.

Kontes Article No.	Hose Connections	Maximum (psig)	Approx. Overall Height x Width x Thickness (mm)	Case Qty.	Case Price
626250-0000	#1	10	57 x 76 x 12	1	16.35

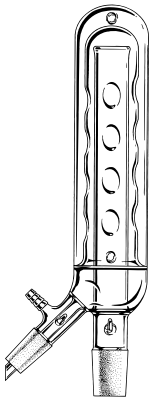




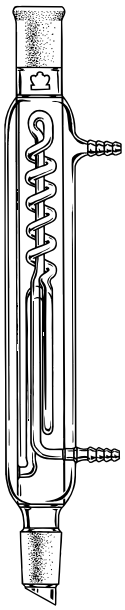
626250



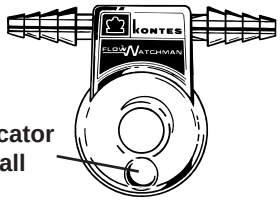
439000



444500



458000



626250

Graham, Full Length ℨ Joints

Graham condenser has a ℨ outer joint at top and a ℨ inner drip joint at the bottom.

Kontes Article No.	ℨ Joints	Jacket Length (mm)	Approx. Condensing Area (cm^2)	Hose Connections	Approx. Overall Height (mm)	Case Qty.	Case Price
439000-2420	24/40	200	164	#2	342	1	118.44
439000-2425	24/40	250	212	#2	392	1	123.32
439000-2430	24/40	300	260	#2	442	1	129.52
439000-2440	24/40	400	356	#2	542	1	140.94
439000-2920	29/42	200	164	#2	352	1	131.81
439000-2930	29/42	300	260	#2	452	1	152.69
439000-2940	29/42	400	356	#2	552	1	163.11

High Efficiency, Full Length ℨ 24/40 Joints

Vapors travel downward and condense in this highly efficient and compact concentrator. Condensate drains through side tube with ℨ inner joint, to a suitable receiver. Vacuum connection provided for reduced pressure operation, if desired.

Kontes Article No.	ℨ Joints	Condenser Surface Height (mm)	Hose Connection	Approx. Overall Height (mm)	Case Qty.	Case Price
444500-2420	24/40	200	#2	315	1	331.47
444500-2425	24/40	250	#2	365	1	364.10

Large Capacity, Full Length ℨ 29/42 Joints

A large capacity, highly efficient condenser suitable for pre-pilot and pilot plant operations. ℨ outer joint at the top and a ℨ inner drip joint at the bottom.

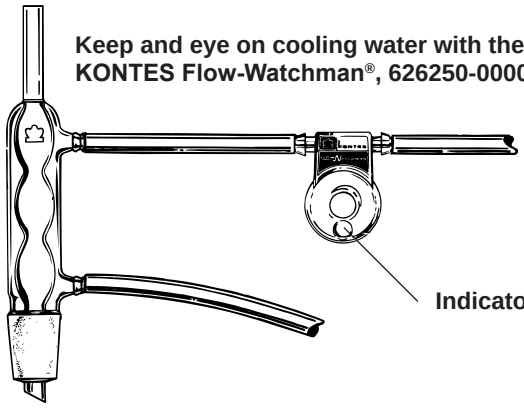
Kontes Article No.	ℨ Joints	Jacket Length (mm)	Approx. Condensing Area (cm^2)	Hose Connections	Approx. Overall Height (mm)	Case Qty.	Case Price
458000-2950	29/42	500	900	#2	660	1	499.80

FLOW-WATCHMAN®

A device for the visual indication of liquid flow. Flow indication is visible at a distance. Usable with water down to a flow range of approximately 100 mL/minute, which is adequate for even the smallest cold finger condensers. The upper flow limit is in excess of 1 liter/minute. Speed of ball rotation is a semi-quantitative measure of water flow. Unit operates in any position.

Molded of clear polycarbonate with an inert nylon indicator ball. Light in weight. Requires no auxiliary support.

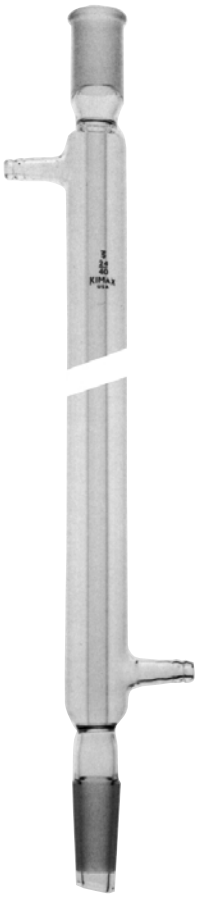
Kontes Article No.	Hose Connections	Maximum (psig)	Approx. Overall Height x Width x Thickness (mm)	Case Qty.	Case Price
626250-0000	#1	10	57 x 76 x 12	1	16.35



Liebig, Drip Tip, Full Length ⅋ 24/40 Joints

KIMAX one-piece sealed unit with a ⅋ outer joint at the inlet and a ⅋ inner joint at the outlet. Inlet end is sloped to avoid trapping condensate. Drip tip is provided at the lower end. Hose connections accept 5/16 inch I.D. flexible tubing. Suitable for use with ASTM D849.

Kimble Article No.	⅋ Joints	Length of Jacket (mm)	Case Qty.	Case Price
18140-400	24/40	400	1	103.58

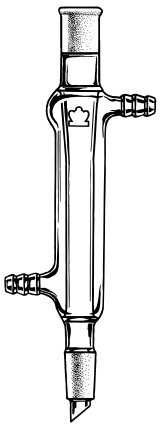


18140

Liebig, Medium Length ⅋ Joints

Design eliminates bulbs where holdup is likely to occur. 282200 lower ⅋ inner drip joint is designed to extend into 287800 distillation receiver. The design conforms to NSN 6640-01-346-9222.

Kontes Article No.	⅋ Joints	Approx. Condensing Area (cm^2)	Hose Connections	Approx. Overall Height (mm)	Case Qty.	Case Price
282210-0000	14/20	34	#1	178	1	66.24

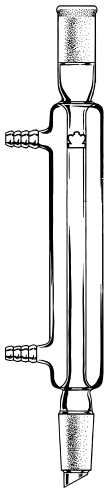


282210

Liebig, Full Length ⅋ Joints

Liebig condenser has a ⅋ outer joint at the top and a ⅋ inner drip joint at the bottom.

Kontes Article No.	⅋ Joints	Jacket Length (mm)	Approx. Condensing Area (cm^2)	Hose Connections	Approx. Overall Height (mm)	Case Qty.	Case Price
447000-2410	24/40	100	41	#2	242	1	92.01
447000-2420	24/40	200	82	#2	342	1	92.98
447000-2425	24/40	250	102	#2	392	1	98.52
447000-2430	24/40	300	123	#2	442	1	101.80
447000-2440	24/40	400	164	#2	542	1	103.75
447000-2920	29/42	200	82	#2	352	1	95.92
447000-2930	29/42	300	123	#2	452	1	103.10
447000-2940	29/42	400	164	#2	552	1	111.58

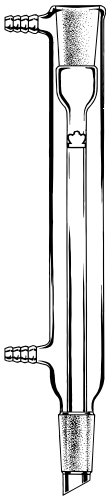


447000

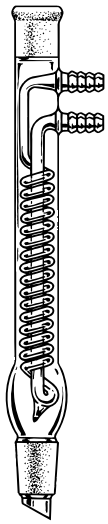
Liebig, Full Length ⅋ 24/40 Joints

Liebig condenser with a water cooled ⅋ inner drip and ⅋ outer joints to provide the maximum condensing surface.

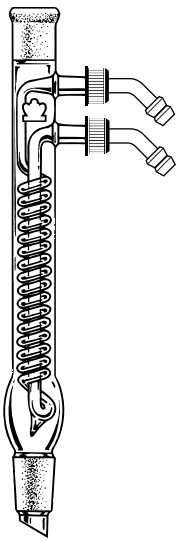
Kontes Article No.	⅋ Joints	Jacket Length (mm)	Approx. Condensing Area (cm^2)	Hose Connections	Approx. Overall Height (mm)	Case Qty.	Case Price
448000-2410	24/40	220	76	#2	240	1	116.79
448000-2420	24/40	320	110	#2	340	1	123.32
448000-2430	24/40	420	145	#2	440	1	129.52



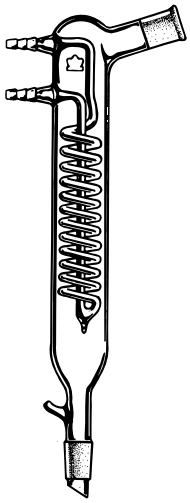
448000



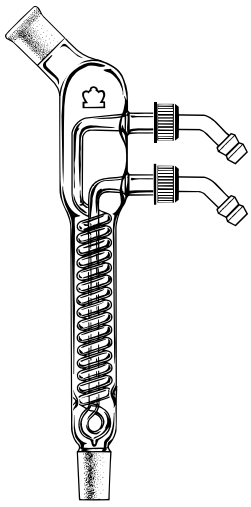
283000
283010
457000



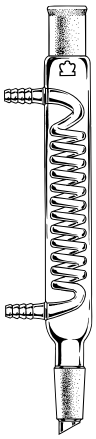
283100
457100



283050
457050



283055



456900

Reflux, Coil Type, ⅋ Joints

With an internal, coil-type cold finger. ⅋ outer joint at the top, ⅋ inner drip joint at the bottom and two hose connectors at the top for water inlet and outlet. Tightly wound coil provides enough surface area to condense high vapor pressure solvents like hexane.

Kontes Article No.	⅋ Joints	Cold Finger Coil Length (mm)	Approx. Condensing Area (cm^2)	Hose Connection	Approx. Overall Height (mm)	Case Qty.	Case Price
283000-0000	14/20	100	72	#1	200	1	130.50
283010-0000	19/22	100	94	#2	225	1	137.01
457000-0125	24/40	125	115	#2	290	1	165.71
457000-0175	24/40	175	170	#2	340	1	212.33
457000-0225	24/40	225	229	#2	390	1	184.01

Reflux, with Removable Hose Connections

Reflux condenser with detachable polypropylene hose connections that provide a safe and easy way to connect and disconnect tubing. Hose connections have an O.D. of 8mm and an I.D. of 4mm.

Kontes Article No.	⅋ Joints	Jacket Length (mm)	Approx. Overall Height (mm)	Case Qty.	Case Price
283100-0000	14/20	100	205	1	145.56
457100-0175	24/40	150	315	1	188.28
457100-0225	24/40	250	415	1	205.83

Reflux, Coil Type, ⅋ Joints

Coil-type for greater cooling capacity. Hook above lower ⅋ joint for use with a 675500 KEM-KLAMP®. 675000 series polyacetal ⅋ clamps may also be used.

Kontes Article No.	⅋ Joints	Hose Connections	Approx. Condensing Area (cm^2)	Approx. Overall Height (mm)	Case Qty.	Case Price
283050-0000	14/20	#1	103	240	1	131.81
457050-0000	24/40	#2	261	370	1	160.50

Reflux, with Removable Hose Connections

Reflux condenser with detachable polypropylene hose connections that provide a safe and easy way to connect and disconnect tubing. Hose connections have an O.D. of 8mm and an I.D. of 4mm.

Kontes Article No.	Jacket Length (mm)	⅋ Joints	Approx. Overall Height (mm)	Case Qty.	Case Price
283055-0000	100	14/20	210	1	152.64

Reflux, Coil Type, Full Length ⅋ 24/40 Joints

Reflux condenser with a water cooled inner coil sealed to top and bottom hose connectors. Efficient non-flooding design.

Kontes Article No.	⅋ Joints	Coil Height (mm)	Approx. Condensing Area (cm^2)	Hose Connections	Approx. Overall Height (mm)	Case Qty.	Case Price
456900-2024	24/40	200	192	#2	375	1	157.90
456900-3024	24/40	300	288	#2	475	1	163.11

Reflux, Coil Type, Full Length ⅋ 24/40 Joint

Reflux condenser with an internal coil-type cold finger. Water cooled outer jacket. Vapors spiraling upward are condensed on the inner wall of the jacket and on the outer surface of the coil. Straight outlet at the top.

Kontes Article No.	⅋ Joints	Cold Finger Length (mm)	Approx. Condensing Area (cm^2)	Hose Connection	Approx. Overall Height (mm)	Case Qty.	Case Price
457250-0225	24/40	225	474	#2	420	1	237.49

Reflux, Coil Type, Full Length ⅋ 24/40 Joint

Reflux condenser with an internal coil-type cold finger. Water cooled outer jacket. Vapors spiraling upward are condensed on the inner wall of the jacket and on the outer surface of the coil. ⅋ outer joint at the top, ⅋ inner drip joint at the bottom and two hose connectors at the top for water inlet and outlet.

Kontes Article No.	⅋ Joints	Cold Finger Length (mm)	Approx. Condensing Area (cm^2)	Hose Connection	Approx. Overall Height (mm)	Case Qty.	Case Price
457270-2425	24/40	225	474	#2	420	1	246.64

Solvent Recovery, ⅋ Joint

A versatile solvent condenser designed to recover solvents escaping during evaporative concentrations. Allows users to work outside of a hood. Design suggested by R. Don Wauchope, U.S.D.A.

Kontes Article No.	⅋ Joint	Hose Connections	Approx. Overall Height (mm)	Case Qty.	Case Price
293450-0000	14/20	#1	162 x 80	1	100.52
547400-0000	24/40	#2	267 x 90	1	161.37

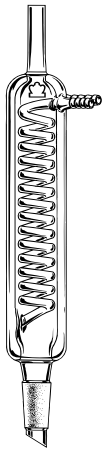
Ref: Analytical Chemistry Vol.47, No.11, Pg.1879, September 1975.

SOLVENT SAVER, for Beakers and Funnels

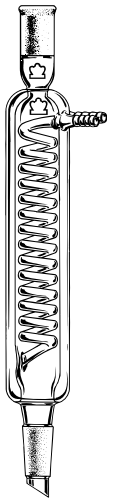
A unique broad surface, water cooled condenser used atop beakers and funnels in concentrating and refluxing liquids. Convex surface with center drip effectively channels condensed material back into the boiling liquid. An extension rod allows easy clamping and positioning by hand.

Kontes Article No.	Diameter (mm)	For Maximum Beaker Capacity up to (mL)	Case Qty.	Case Price
459000-0021	90	250	1	121.37
459000-0022	150	2000	1	147.48

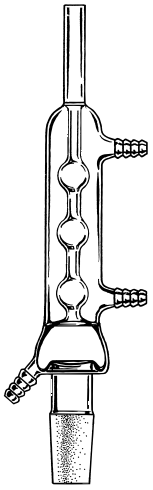
Hose Connector Tubing Size Chart	
Hose Connector Size	Fits Flexible Tubing I.D.
1	1/4"
2	3/8"
3	1/2"
4	3/4"



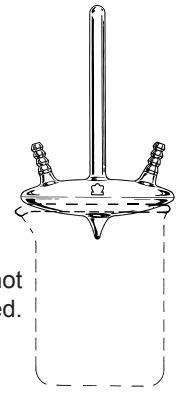
457250



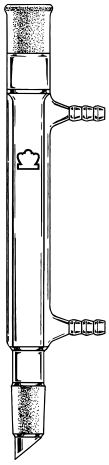
457270



293450
547400



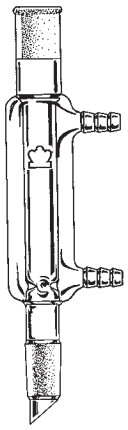
459000



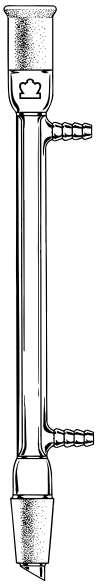
282550
282460



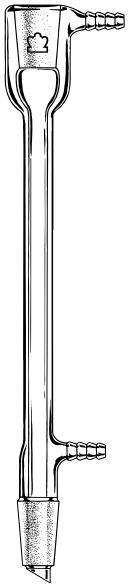
18185



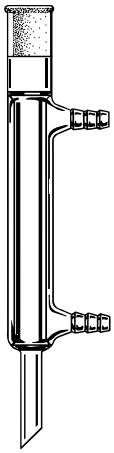
282555



452000



452750



282560

West, Drip Tip, Medium Length Ⓢ Joints

KIMAX one piece sealed unit with a Ⓢ outer joint at the inlet and a TS inner joint at the outlet. Inlet end is sloped to avoid trapping condensate. Inner tube is light-walled with a small diameter jacket to keep minimal space between them. Hose connections accept 5/16 inch I.D. flexible tubing.

Kimble Article No.	Ⓢ Inner Joint	Jacket Length (mm)	Case Qty.	Case Price
18185-1420	14/20	200	1	114.85

West, Medium Length Ⓢ Joints

Useful for refluxing and distillation assemblies. Condensate is not held up with this design.

Kontes Article No.	Ⓢ Joints	Jacket Length (mm)	Approx. Condensing Area (cm^2)	Hose Connections	Approx. Overall Height (mm)	Case Qty.	Case Price
282550-0000	14/20	110	45	#1	190	1	66.89
282460-0200	19/22	200	66	#1	285	1	54.95

West, Medium Length Ⓢ Joints, Jacketed

Useful for refluxing and distillation assemblies. Condensate is not held up with this design.

Kontes Article No.	Ⓢ Joints	Jacket Length (mm)	Approx. Condensing Area (cm^2)	Hose Connections	Approx. Overall Height (mm)	Case Qty.	Case Price
282555-0000	14/20	80	38	#2	160	1	34.59

West, Full Length Ⓢ 24/40 Joints

Condenser with a Ⓢ outer joint at the top and a Ⓢ inner drip joint at the bottom. The narrow annular space of the West design provides high cooling efficiency due to the increased flow rate of the cooling medium.

Kontes Article No.	Ⓢ Joints	Jacket Length (mm)	Approx. Condensing Area (cm^2)	Hose Connections	Approx. Overall Height (mm)	Case Qty.	Case Price
452000-2410	24/40	100	34	#2	242	1	79.61
452000-2420	24/40	200	68	#2	342	1	82.87
452000-2430	24/40	300	102	#2	442	1	87.43

West, with Full Length Ⓢ 24/40 Water Cooled Joints

Condenser with water cooled inner and outer joints to provide maximum condensing surface.

Kontes Article No.	Ⓢ Joints	Jacket Length (mm)	Approx. Condensing Area (cm^2)	Hose Connections	Approx. Overall Height (mm)	Case Qty.	Case Price
452750-2430	24/40	430	149	#2	445	1	107.33

West, Medium Length Ⓢ 14/20 Joints

West condenser with an 8 mm diameter stem for use with a 179800 universal adapter or BEVEL-SEAL adapters.

Kontes Article No.	Ⓢ Joint	Jacket Length (mm)	Approx. Condensing Area (cm^2)	Approx. Overall Height (mm)	Case Qty.	Case Price
282560-0000	14/20	110	45	195	1	55.45

Imhoff Sediment Cone

KIMAX cone is molded with sturdy walls and has a reinforcing bead at the top. Designed for estimation of small amounts of suspended solids in sewage. While the tip end is small enough to read small volumes easily, it is also reinforced to provide necessary strength. Scale is durable white ceramic enamel. Calibrated to contain. Length is 415 mm (± 10 mm). Top diameter is 108 mm.

Kimble Article No.	Cap. (liter)	Subdiv. (mL)	±Tol. (mL)	Case Qty.	Case Price
19000-1	1	0-2 in 0.1 2-10 in 0.5 10-40 in 1 and at 1 liter	0 to 0.5 - 0.10 Above 0.5 to 2 - 0.20 Above 2 to 5 - 0.25 Above 5 to 10 - 0.50 Above 10 to 40 - 1.00 At 1 liter - 10.00	1	191.78



19000

Crucible, Gooch, High Form, with KIMFLOW® Fritted Disc

KIMAX crucible suitable for precipitates to be dried to a constant weight at 110° C. At higher temperatures, heating in an electric furnace is advised and crucibles should not be removed until the temperature has been reduced to about 250° C. Exposure to sudden temperature changes should be avoided.

Kimble Article No.	Capacity (mL) and Porosity	Approx. Dia. of Disc (mm)	Approx.Height (mm)	Case Qty.	Case Price
28250-302	30 M	30	60	1	24.59



28250

Crucible, Gooch, Low Form, with KIMFLOW® Fritted Disc

KIMAX crucible suitable for precipitates to be dried to a constant weight at 110° C. At higher temperatures, heating in an electric furnace is advised and crucibles should not be removed until the temperature has been reduced to about 250° C. Exposure to sudden temperature changes should be avoided.

Kimble Article No.	Capacity (mL) and Porosity	Approx. Dia. of Disc (mm)	Approx. Height (mm)	Shelf-Pack Qty.	Case Qty.	Case Price
28260-152	15 M	20	45	-	1	31.96
28260-301	30 C	30	50	2	12	317.64
28260-302	30 M	30	50	2	12	295.08
28260-303	30 F	30	50	2	12	317.64



28260

Hydrometer, with Pourout

KIMAX plain, ungraduated cylinder. With a hexagonal base flat ground for stability. For use, size hydrometer overall length to cylinder height where hydrometer O.D. is smaller than cylinder I.D. Approximate wall thickness is 1.5 mm. **Replaces 20065 series.**

Kimble Article No.	Capacity (mL)	Approx. Dia. (mm)	Approx. Height (mm)	Case Qty.	Case Price
20058-38200	175	38	200	1	16.01
20058-38375	340	38	375	1	22.78
20058-50375	600	50	375	1	27.36
20058-63460	1200	63	460	1	41.38

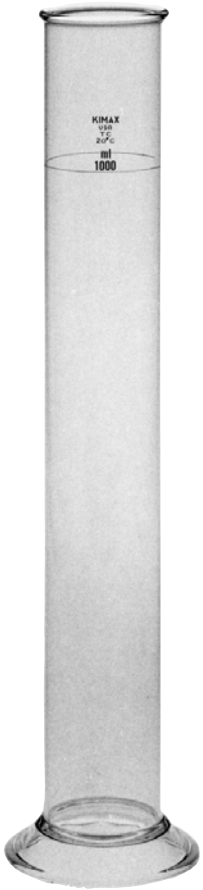


20058

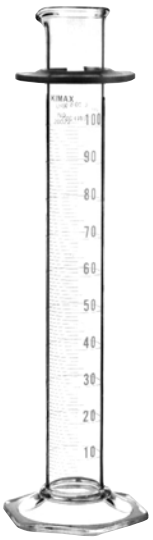
Soil Testing, To Contain

KIMAX cylinder calibrated to contain. Used in measuring particle size distribution in soil suspensions by means of a hydrometer (ASTM D422 and AASHTO T88). While the 1205 mL size is not specified in this method, it is useful in certain special cases. Both sizes have a round base, approximately 107 mm in diameter, to fit into the metal baths in generally used for this work. The 1000 mL may also be used in pipet methods of mechanical analysis of soils. Scale is durable white ceramic enamel.

Kimble Article No.	Cap. (mL)	Lines at (mL)	±Tol. (mL)	Approx. Height (mm)	Shelf-Pack Qty.	Case Qty.	Case Price
20023-1000	1000	1000	5.0	457	1	4	306.24
20023-1205	1205	1130, 1205	5.0	457	1	4	353.68



20023



20022



20011



20036

To Contain, Class B, Graduated, with Pour Spout

KIMAX cylinder calibrated to contain at 20°C. 10 mL size has an enlarged funnel top for ease of filling. Provided with a hexagonal base flat ground for stability and a SAFE-GARD bumper on sizes 25 mL and larger. Designed from ASTM E1272, Style 1, Class B requirements. The primary function of this T.C. cylinder is to receive liquids where volumetric calculations are based solely on the volume contained within the cylinder. Among applications, T.C. cylinders are frequently used as receivers for the condensate from distillation procedures and sedimentation values of precipitates.

Kimble Article No.	Cap. (mL)	Grad. Interval (mL)	Subdiv. (mL)	±Tol. (mL)	Approx. Height (mm)	Bumper Size	Shelf-Pack Qty.	Case Qty.	Case Price
20022-10	10	1 to 10	0.2	0.1	135	-	1	12	155.76
20022-25	25	3 to 25	0.5	0.3	140	2	-	1	18.32
20022-50	50	3 to 50	1	0.4	190	3	1	12	225.36
20022-100	100	5 to 100	1	0.6	255	4	1	12	268.92
20022-250	250	10 to 250	2	1.4	330	6	1	6	185.94
20022-500	500	25 to 500	5	2.6	375	7	1	4	173.32
20022-1000	1000	50 to 1000	10	5.0	460	8	1	4	263.00
20022-2000	2000	100 to 2000	20	10.0	520	9	1	2	210.38

To Contain, Class B, Single Metric Scale, Emulsion Test

KIMAX cylinder calibrated to contain. Used in the determination of emulsifying and demulsifying tendencies of lubricating oils. (ASTM D1401). Round base to fit baths in which this cylinder is generally used. Scale is durable white ceramic enamel.

Kimble Article No.	Cap. (mL)	Grad. Interval (mL)	Subdiv. (mL)	±Tol. (mL)	Approx. Height (mm)	Case Qty.	Case Price
20011-100	100	5 to 100	1	1.0	230	1	29.09

To Contain, Class A, Mixing, Serialized and Certified, Single Metric Scale

KIMAX cylinder is permanently marked with an individual serial number. Supplied with a Certificate of Graduation Accuracy. Calibrated to contain. A ⅋ glass stopper is supplied. Scale is durable white ceramic enamel. Designed from ASTM Specification E1272, Style 2, Class A requirements. Heights given below do not include the stopper. **Replacement stopper is 41900R.**

Kimble Article No.	Cap. (mL)	Grad. Interval (mL)	Subdiv.	±Tol. (mL)	⅋ Stopper	Approx. Height (mm)	Shelf-Pack Qty.	Case Qty.	Case Price
20036-10	10	1 to 10	0.1	0.08	9	170	1	6	466.14
20036-25	25	2 to 25	0.2	0.14	13	215	1	6	505.68
20036-50	50	3 to 50	1	0.20	16	195	1	6	550.26
20036-100	100	5 to 100	1	0.35	22	255	1	6	579.48
20036-250	250	10 to 250	2	0.65	27	330	-	1	119.08
20036-500	500	25 to 500	5	1.10	32	380	-	1	157.49
20036-1000	1000	50 to 1000	10	2.00	32	475	-	1	192.37

To Contain, Class B, Mixing, Single Metric Scale

KIMAX cylinder designed from ASTM Specification E1272, Style 2, Class B requirements. ⅋ glass stopper is supplied. Scale is durable white ceramic enamel. The 10 and 25 mL sizes are comparatively short to provide increased stability. Tall form 10 and 25 mL cylinders with finer subdivisions are provided under 20039A . The 250 mL size may be used to determine unsaponified matter in soaps and soap products (ASTM D460), and anhydrous salt free soda soap and fatty matter in soaps containing synthetic detergents (ASTM D820). The 500 mL size may be used in settlement tests of emulsified asphalts (ASTM D244). Heights given below do not include the stopper. **Replacement stopper is 41900R..**

Kimble Article No.	Cap. (mL)	Grad. Interval (mL)	Subdiv. (mL)	±Tol. (mL)	⅋ Stopper	Approx. Height (mm)	Shelf-Pack Qty.	Case Qty.	Case Price
20039-10	10	1 to 10	0.2	0.1	13	135	4	24	559.44
20039-25	25	3 to 25	0.5	0.3	13	160	4	24	611.52
20039-50	50	3 to 50	1	0.4	16	195	4	24	764.88
20039-100	100	5 to 100	1	0.6	22	255	4	24	884.16
20039-250	250	10 to 250	2	1.4	27	330	2	8	433.76
20039-500	500	25 to 500	5	2.6	32	380	1	6	420.90
20039-1000	1000	50 to 1000	10	5.0	32	475	1	4	395.12
20039-2000	2000	100 to 2000	20	10.0	38	550	1	2	331.52



20039

To Contain, Class B, Mixing, Single Metric Scale, Polyethylene Stopper

KIMAX cylinder with a polyethylene stopper. Designed from ASTM Specification E1272, Style 2, Class B requirements. Stopper has a closed bottom and is made from linear, high density polyethylene to fit the ⅋ ground flask neck. The enlarged top of the stopper protects the neck if the cylinder is knocked over. Scale is durable white ceramic enamel. Heights given below do not include the stopper. **Replacement stopper is 28160R .**

Kimble Article No.	Cap. (mL)	Grad. Interval (mL)	Subdiv. (mL)	±Tol. (mL)	Stopper Size and ⅋ Neck Size	Approx. Height (mm)	Shelf-Pack Qty.	Case Qty.	Case Price
20039P-50	50	3 to 50	1	0.4	16	195	4	24	829.92
20039P-100	100	5 to 100	1	0.6	22	255	4	24	970.08
20039P-1000	1000	50 to 1000	10	5.0	32	475	1	4	386.52



20039P

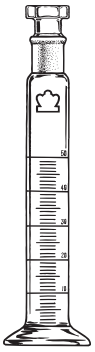
To Contain, Class B, Mixing, Single Metric Blue Scale

KIMAX cylinder (formerly EXAX) with a durable blue ceramic enamel scale. A ⅋ glass stopper is supplied. Heights given below do not include the stopper. Designed from ASTM Specification E1272, Style 2 Class B, requirements. **Replacement stopper is 41900R.**

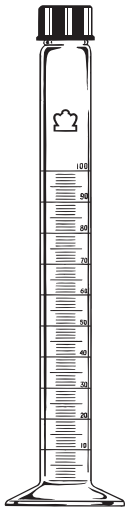
Kimble Article No.	Cap. (mL)	Grad. Interval (mL)	Subdiv. (mL)	±Tol. (mL)	⅋ Stopper	Approx. Height (mm)	Shelf-Pack Qty.	Case Qty.	Case Price
20040-10	10	1 to 10	0.2	0.1	13	135	4	24	452.16
20040-25	25	3 to 25	0.5	0.3	13	160	4	24	555.12
20040-50	50	3 to 50	1	0.4	16	195	4	24	693.12
20040-100	100	5 to 100	1	0.6	22	255	4	24	799.44
20040-250	250	10 to 250	2	1.4	27	330	2	8	350.56
20040-500	500	25 to 500	5	2.6	32	380	1	6	382.98
20040-1000	1000	50 to 1000	10	5.0	32	475	1	4	357.44
20040-2000	2000	100 to 2000	20	10.0	38	550	1	2	265.24



20040



284000



482600

To Contain, Class B, Single Metric Scale, Mixing, ⅌ 14/20

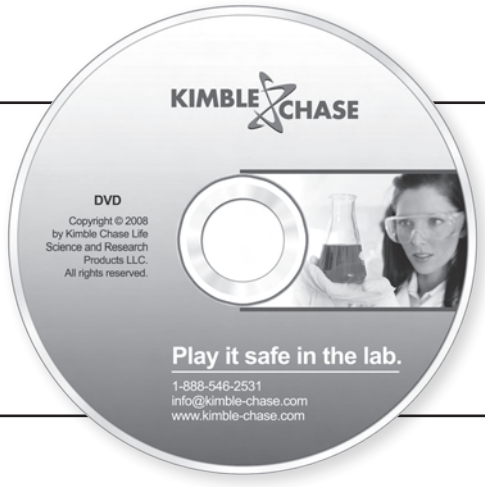
Stoppered for mixing and storage. Provided with a hexagonal base for stability. Calibrated to contain. Replacement stopper is 850400.

Kontes Article No.	Capacity (mL)	Subdiv. (mL)	⅌ Joint	850400 Glass Stopper	Approx. Overall Height (mm)	Case Qty.	Case Price
284000-0005	5	0.1	14/20	14/20	125	1	64.91
284000-0010	10	0.2	14/20	14/20	150	1	67.01
284000-0025	25	0.5	14/20	14/20	180	1	71.61

To Contain, Class B, Single Metric Scale

Laboratory-grade cylinder with a PTFE-lined screw cap for mixing and storage. Calibrated to contain. Provided with a hexagonal base for stability. See Technical Information section for tolerances. Replacement cap is 410121.

Kontes Article No.	Capacity (mL)	Subdiv. (mL)	GPI Thread Size	Approx. Height w/o Cap (mm)	Case Qty.	Case Price
482600-0025	25	0.5	13-425	145	1	37.05
482600-0050	50	1	18-415	186	1	36.52
482600-0100	100	1	18-415	246	1	42.45
482600-0250	250	2	24-410	324	1	55.71



Safety Program - *Play it safe in the lab.*

Our Safety Program discusses the ten basic safety rules of handling glassware as well as the technical properties and physics of glass. Available as a DVD.

Kimble Article No.	Format	Case Qty.	Case Price
99991D-99	DVD	1	23.99

See more safety products in the *SAFETYWARE* section.

To Deliver, Class A, Serialized and Certified, Single Metric Scale, with Bumper

KIMAX Class A cylinder is permanently marked with an individual serial number. Supplied with a Certificate of Graduation Accuracy. Provided with a hexagonal base flat ground for stability. SAFE-GARD bumpers are supplied with sizes 25 through 1000 mL. The 10 mL size has an enlarged funnel-shaped top for ease of filling. Designed from ASTM Specification E1272, Style 1, Class A requirements.

Kimble Article No.	Cap. (mL)	Grad. Interval (mL)	Subdiv. (mL)	±Tol. (mL)	Approx. Height (mm)	Bumper Size	Shelf-Pack Qty.	Case Qty.	Case Price
20026-10	10	1 to 10	0.1	0.09	165	-	1	6	441.42
20026-25	25	2 to 25	0.2	0.17	195	1	1	6	473.70
20026-50	50	3 to 50	1	0.25	190	3	1	6	476.88
20026-100	100	5 to 100	1	0.40	255	4	1	6	529.02
20026-250	250	10 to 250	2	0.80	330	6	1	4	382.60
20026-500	500	25 to 500	5	1.30	375	7	1	4	447.80
20026-1000	1000	50 to 1000	10	2.50	460	8	1	2	275.68



20026

To Deliver, Class A, White Scale, with Reverse Graduations and Bumper

KIMAX cylinder with reverse metric scale. The “TD” (to deliver) appears on each cylinder and indicates the cylinder is calibrated to pour (dispense) and that the cylinder may be used repeatedly without drying. SAFE-GARD bumpers are supplied with sizes 25 through 2000 mL.

Kimble Article No.	Cap. (mL)	Grad. Interval (mL)	Subdiv. (mL)	±Tol. (mL)	Approx. Height (mm)	Bumper Size	Shelf-Pack Qty.	Case Qty.	Case Price
20028W-10	10	1 to 10	0.1	0.09	165	-	1	6	124.68
20028W-25	25	2 to 25	0.2	0.17	195	1	1	6	130.38
20028W-50	50	3 to 50	1	0.25	190	3	1	6	135.36
20028W-100	100	5 to 100	1	0.40	255	4	1	6	158.88
20028W-250	250	10 to 250	2	0.80	330	6	1	4	144.52
20028W-500	500	25 to 500	5	1.30	375	7	1	4	203.44
20028W-1000	1000	50 to 1000	10	2.50	460	8	1	1	72.01
20028W-2000	2000	100 to 2000	20	6.00	520	9	1	1	115.98



20028W

To Deliver, Safety Coated, Class A, Serialized and Certified, Single Metric Scale with Bumper

KIMAX Class A cylinder is permanently marked with an individual serial number and single metric scale. Calibrated to deliver and supplied with a Certificate of Graduation Accuracy. Provided with a hexagonal base flat ground for stability. SAFE-GARD® bumpers are supplied with sizes 25 through 2000 mL. Designed from ASTM Specification E1272, Style 1, Class A requirements.

Kontes Article No.	Capacity (mL)	Graduated Interval (mL)	Subdiv (mL)	±Tol. (mL)	Approx. Height (mm)	Case Qty.	Case Price
481755-0100	100	5 to 100	1	0.40	255	1	97.87
481755-0250	250	10 to 250	2	0.80	330	1	100.49
481755-0500	500	25 to 500	5	1.30	375	1	111.90
481755-1000	1000	50 to 1000	10	2.50	460	1	137.01

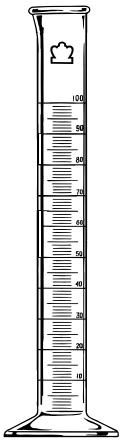


481755

See the *SAFETYWARE* section for more safety products.



20024



481500

To Deliver, Class B, Single Metric Scale

KIMAX Laboratory-grade cylinder with a heavy-duty base and pouring lip. Provided with a hexagonal base for stability. Calibrated to deliver.

Kontes Article No.	Cap. (mL)	Subdiv (mL)	Approx. Height (mm)	Case Qty.	Case Price
481500-4000	4000	50	585	1	247.80

To Deliver, Class B, Single Metric Scale, with Bumper

KIMAX cylinder calibrated to deliver. SAFE-GARD bumpers are supplied with sizes 25 through 2000 mL. The 10 mL size has an enlarged funnel-shaped top for ease of filling. The 10 and 25 mL sizes are comparatively short to provide increased stability. (Tall form 10 and 25 mL cylinders with finer subdivisions are provided under 20024A). The 100 mL size may be used for some ASTM distillation tests. Scale is durable white ceramic enamel. Designed from ASTM Specification E1272, Style 1, Class B requirements.

Kimble Article No.	Cap. (mL)	Grad. Interval (mL)	Subdiv. (mL)	±Tol. (mL)	Approx. Height (mm)	Bumper Size	Shelf-Pack Qty.	Case Qty.	Case Price
20024-10	10	1 to 10	0.2	0.1	135	-	4	24	311.52
20024-25	25	3 to 25	0.5	0.3	140	2	4	24	433.92
20024-50	50	3 to 50	1	0.4	190	3	4	24	450.72
20024-100	100	5 to 100	1	0.6	255	4	4	24	537.84
20024-250	250	10 to 250	2	1.4	330	6	2	12	371.88
20024-500	500	25 to 500	5	2.6	375	7	1	8	346.64
20024-1000	1000	50 to 1000	10	5.0	460	8	1	4	260.96
20024-2000	2000	100 to 2000	20	10.0	520	9	1	4	423.32



20024-01

Starter Pack, To Deliver, Class B, Single Metric Scale, with Bumper

An assortment of popular size graduated cylinders from our 20024 series. The pack consists of 5 cylinders (one each) in sizes of 10, 25, 50, 100 and 250 mL. Ideal for start-up requirements and customers who need a variety of cylinders, but have limited lab space or glassware needs.

Kimble Article No.	Cap. (mL)	Grad. Interval (mL)	Subdiv. (mL)	Tol. ±(mL)	Approx. Widest Dia. x Ht. (mm)	Bumper Size	Case Qty.	Price
20024-01	10	1 to 10	0.2	0.1	135	—	5	129.14
(Consisting	25	3 to 25	0.5	0.3	140	2		
of one each).	50	3 to 50	1	0.4	190	3		
	100	5 to 100	1	0.6	255	4		
	250	10 to 250	2	1.4	330	6		



20032

To Deliver, Class B, Single Metric Scale, Low Form

Calibrated to deliver. Bodies have a larger diameter than comparable sizes of 20024. A reduction in overall height provides greater stability and decreased breakage. Two pourouts are provided. Scale is durable white ceramic enamel.

Kimble Article No.	Cap. (mL)	Grad. Interval (mL)	Subdiv. (mL)	±Tol. (mL)	Approx. Height (mm)	Shelf-Pack Qty.	Case Qty.	Case Price
20032-50	50	4 to 50	1	1	140	1	12	412.92
20032-100	100	10 to 100	2	2	156	1	12	427.08

To Deliver, Class B, Single Metric Scale, Red Stripe, with Bumper

KIMAX cylinder calibrated to deliver. A clear, reverse image in the scale is highlighted against a ruby red stripe. SAFE-GARD bumpers are supplied with sizes 25 through 2000 mL. The 10 mL size has an enlarged funnel-shaped top for ease of filling. Designed from ASTM Specification E1272, Style 1, Class B requirements.

Kimble Article No.	Cap. (mL)	Grad. Interval (mL)	Subdiv. (mL)	±Tol. (mL)	Approx. Height (mm)	Bumper Size	Shelf-Pack Qty.	Case Qty.	Case Price
20024D-10	10	1 to 10	0.1	0.1	165	-	4	24	402.96
20024D-25	25	2 to 25	0.2	0.3	195	1	4	24	623.04
20024D-50	50	3 to 50	1	0.4	190	3	4	24	679.44
20024D-100	100	5 to 100	1	0.6	255	4	4	24	682.56
20024D-250	250	10 to 250	2	1.4	330	6	2	12	525.96
20024D-500	500	25 to 500	5	2.6	375	7	1	8	417.12
20024D-1000	1000	50 to 1000	10	5.0	460	8	1	4	314.52
20024D-2000	2000	100 to 2000	20	10.0	520	9	1	4	477.80



20024D

To Deliver, Class B, Single Blue Metric Scale, with Bumper

KIMAX cylinder (formerly EXAX) calibrated to deliver. Scale is durable blue ceramic enamel. SAFE-GARD bumpers are supplied with sizes 25 through 2000 mL. The 10 mL size has an enlarged funnel-shaped top for ease of filling. The 10 and 25 mL sizes are comparatively short to provide increased stability. Designed from ASTM Specification E1272, Style 1, Class B requirements.

Kimble Article No.	Cap. (mL)	Grad. Interval (mL)	Subdiv. (mL)	±Tol. (mL)	Approx. Height (mm)	Bumper Size	Shelf-Pack Qty.	Case Qty.	Case Price
20025-10	10	1 to 10	0.2	0.1	135	-	4	24	311.52
20025-25	25	3 to 25	0.5	0.3	140	2	4	24	439.68
20025-50	50	3 to 50	1	0.4	190	3	4	24	456.00
20025-100	100	5 to 100	1	0.6	255	4	4	24	539.04
20025-250	250	10 to 250	2	1.4	330	6	2	12	372.36
20025-500	500	25 to 500	5	2.6	375	7	1	8	347.36
20025-1000	1000	50 to 1000	10	5.0	460	8	1	4	241.44
20025-2000	2000	100 to 2000	20	10.0	520	9	1	4	391.80



20025

To Deliver, Class B, Double Metric Scale, with Bumper

KIMAX cylinder calibrated to deliver. SAFE-GARD bumpers are supplied with sizes 25 through 2000 mL. The 10 mL size has an enlarged funnel-shaped top for ease of filling. The 10 and 25 mL sizes are comparatively short to provide increased stability. Scale is durable white ceramic enamel. Scale has two sets of numerals, one reading from the bottom to the top of the cylinder (ascending) and the other reading from the top to the bottom(descending). Designed from ASTM Specification E1272, Style 1, Class B requirements.

Kimble Article No.	Cap. (mL)	Grad. Interval (mL)	Subdiv. (mL)	±Tol. (mL)	Approx. Height (mm)	Bumper Size	Shelf-Pack Qty.	Case Qty.	Case Price
20030-10	10	1 to 10	0.2	0.1	135	-	4	24	456.72
20030-25	25	3 to 25	0.5	0.3	140	2	4	24	598.08
20030-50	50	3 to 50	1	0.4	190	3	4	24	583.68
20030-100	100	5 to 100	1	0.6	255	4	4	24	668.40
20030-250	250	10 to 250	2	1.4	330	6	2	12	514.92
20030-500	500	25 to 500	5	2.6	375	7	1	8	448.80
20030-1000	1000	50 to 1000	10	5.0	460	8	1	4	300.12
20030-2000	2000	100 to 2000	20	10.0	520	9	1	4	475.40



20030



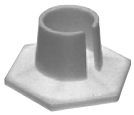
20025K



20025H



20025J



20025B



20100

To Deliver, Single White Metric Scale, Educational Grade

KIMAX educational grade cylinder (formerly TEKK). Cylinder is ideal for use in educational institutions and for many general laboratory procedures. Incorporates many of the features of other KIMAX cylinders.

Kimble Article No.	Cap. (mL)	Grad. Interval (mL)	Subdiv. (mL)	Approx. Height (mm)	Shelf-Pack Qty.	Case Qty.	Case Price
20025K-10	10	1 to 10	0.2	135	4	36	359.28
20025K-25	25	3 to 25	0.5	140	4	36	397.80
20025K-50	50	3 to 50	1	190	4	36	448.92
20025K-100	100	5 to 100	1	255	4	36	505.08
20025K-250	250	10 to 250	2	330	2	18	448.74
20025K-500	500	25 to 500	5	375	1	12	392.04
20025K-1000	1000	50 to 1000	10	460	1	8	395.12
20025K-2000	2000	100 to 2000	20	520	1	6	461.10

To Deliver, Single Blue Metric Scale, Educational Grade, Plastic Base, with Bumper

KIMAX cylinder (formerly TEKK) calibrated to deliver. Made of sturdy borosilicate glass, with a reinforced top bead and a pour spout and with a hexagonal plastic base. SAFE-GARD bumpers are supplied with sizes 25 through 100 mL. The 10 mL size has an enlarged funnel-shaped top for ease of filling. The 10 and 25 mL sizes are comparatively short to provide increased stability. Scale is durable blue ceramic enamel.

Kimble Article No.	Cap. (mL)	Grad. Interval (mL)	Subdiv. (mL)	Approx. Height (mm)	Bumper Size	Shelf-Pack Qty.	Case Qty.	Case Price
20025H-10	10	0.4 to 10	0.2	132	-	6	24	122.40
20025H-25	25	1 to 25	0.5	138	2	6	24	133.20
20025H-50	50	2 to 50	1	185	3	6	24	149.04
20025H-100	100	2 to 100	1	248	4	6	24	194.88

Replacement Parts

20025J-10	Cylinder Only, 10 mL	24	107.76
20025J-25	Cylinder Only, 25 mL	6	37.20
20025J-50	Cylinder Only, 50 mL	6	39.72
20025J-100	Cylinder Only, 100 mL	24	196.32
20025B-25	Base Only, 25 mL	6	13.56
20025B-50	Base Only, 50 mL	6	15.48
20025B-100	Base Only, 100 mL	6	15.12

Bumper, Plastic, SAFE-GARD®

A sturdy split ring made of yellow LD polyethylene. When placed around a cylinder near the top, it protects against breakage if the cylinder is upset. Position of the ring can be adjusted to avoid contact with the top of a receiver when the liquid is poured from the cylinder. Should a ring become loose after prolonged use, soak it briefly in hot water (90° C) to return it to its original shape.

Kimble Article No.	Size No.	Fits Cylinder with O.D. (mm)	Case Qty.	Case Price
20100-4	4	28.5-31.0 (100 mL)	6	8.70

Pharmaceutical, Conical, Dual Scale

KIMAX graduate with scales in both metric and U.S. customary units. Calibrated to deliver. Sizes 8 fluid drams (25 mL approx.) and larger are designed from ASTM Specification E1094, Type 2 requirements (also NBS Handbook 44). ***Sizes 4 fluid drams (15 mL), and smaller do not meet ASTM E1094 nor NBS Handbook 44 requirements and therefore may not be used for prescription work in states which adopt these specifications.*** **Kimble series 60345.**



60345

Kimble Article No.	Capacity U.S. Customary Unit Scale (Minim)	Metric Scale (mL)	Interval Grad. (Minim)	Subdivision (mL)	Approx. ±Tol. (Minims)	Shelf-Pack Qty.	Case Qty.	Case Price
60345-60	60	5	10-60	5	All Points - 2	1	1	33.20
60345-120	120	10	10-120	10-40 in 5 40-120 in 10	Up to 30 Min - 2 Above 30 - 3	1	1	36.79
60345-40	4 fluid drams	15	0-4 fl dr	0-1 in 0.25 1-4 in 0.5	At 0.25 dr - 2 Above 0.25to 2.5 - 3 Above 2.5 - 6	1	12	566.52
60345-80	8 fluid drams	25	2-8 fl dr	1 fl dr	Up to 5 fl. dr - 6 Above 5 - 10	1	1	72.89
60345-2	2 fluid ounces	50	0.5-2 fl oz	0.25 fl oz	Up to 1.25 fl oz - 10 Above 1.25 - 15	1	12	946.92
60345-4	4 fluid ounces	100	1-4 fl oz	0.5 fl oz	Up to 2 fl oz - 15 Above 2 - 20	1	8	556.56
60345-8	8 fluid ounces	250	2-8 fl oz	0.5 fl oz	Up to 4 fl oz - 30	1	1	86.61
60345-16	16 fluid ounces	500	4-16 fl oz	1 fl oz	Up to 4 fl oz - 40 Above 4 to 8 - 50 Above 8 to 13 - 65 Above 13 - 80	1	6	772.80
60345-32	32 fluid ounces	1000	8-32 fl oz	2 fl oz	Up to 10 fl oz - 80 Above 10 to 16 - 95 Above 16 to 26 - 110 Above 26 - 130	1	1	221.69

KONTES
custom glass shop
*call toll-free **800-682-6644***
customglass@kimble-chase.com

Contact the **Kontes Custom Glass Shop** at KIMBLE CHASE for modifications of standard products or fabrication of your unique designs. And when it comes to repairs, we can save you up to 75% of the cost of a new item. Save an additional 10% on repairs of Kontes or Kimble Brand products. Fax your requirements to **856-692-6644**.

- **Custom Fabrications**
- **Quality Repairs**
- **Modifications of All Kinds**
- **No Order Too Small**
- **Quick Turnaround**



620F

A620F 609

Acidity Test, Automatic Zero

KIMAX acidity test used to determine the acidity of raw milk, cheese, whey, and other dairy products. The supplied buret has a PTFE stopcock plug and is graduated with a durable white ceramic enamel scale from 0 to 1%, giving readings directly in percentage of acidity. The stirring rod, a glass tube closed at both ends, contains a paper slip with two bands of different shades of pink to assist in determining when the right amount of neutralizer has been added. Indicator is 1% phenolphthalein in 70% denatured ethanol (Neutralizer is 0.1N sodium hydroxide [NaOH] - fully diluted). Complete kit consists of one each of the buret, filling tube assembly (glass tubes and rubber stoppers), 100 mL beaker (#14000-100), rubber bulb, reservoir bottle, stirring rod, clamp and 9 mL pipet (#570-9). **Replacement stopcock is 41500F.**

Kimble Article No.	Capacity (%)	Stopcock Size	Tolerance & Subdivision (%)	Case (mL)	Case Qty.	Case Price
620F-1	1 (10 mL)	2	0.01	0.1	1	281.39
Replacement Parts						
A-620F-1	Acid Test Buret Only				1	122.96
609-99	Stirring Rod Only				1	17.86



14915

Bottle, Milk Dilution, Square, with Screw Cap, Ungraduated

KIMAX-35 bottles are designed from the requirements for milk dilution bottles given in the “Standard Methods for the Examination of Dairy Products”, published by the American Public Health Association. Bottles have a square cross section and a smooth marking spot. Supplied with a black phenolic screw cap not attached. Cap has a cemented in rubber liner and is suitable for autoclaving. Bottle may be autoclaved to 121°C without preconditioning. **Replacement cap is 14255.**

Kimble Article No.	Capacity (mL)	Approx. Height (mm)	Outside Cross Section (mm)	GPI Thread Finish	Case Qty.	Case Price
14915-160	160	150	45 x 45	28-400	48	218.88



Graduated at 99 mL

14925

Bottle, Milk Dilution, Square, with Screw Cap, Graduated at 99 mL

KIMAX-35 bottles are designed from the requirements for milk dilution bottles given in the “Standard Methods for the Examination of Dairy Products”, published by the American Public Health Association. Bottles have a square cross section and a smooth marking spot. Supplied with a black phenolic screw cap not attached. Cap has a cemented in rubber liner and is suitable for autoclaving. Bottle may be autoclaved to 121°C without preconditioning. Replacement cap is 14255.

Kimble Article No.	Capacity (mL)	±Tol. (mL)	Approx. Height (mm)	Outside Cross Section (mm)	GPI Thread Finish	Case Qty.	Case Price
14925-160	160	1	150	45 x 45	28-400	48	304.32



14250

Bottle, Milk Dilution / Sampling, with Screw-Cap, Ungraduated

KIMAX-35 bottle has a square cross section and a wide appeal for general use, especially water sampling, milk dilutions and tissue culture work. Comes with an attached rubber-lined black phenolic autoclavable closure. Bottle may be autoclaved to 121 °C without preconditioning. **Replacement cap is 14255.**

Kimble Article No.	Capacity (mL)	Cap. to Neck Base (mL)	Approx. Height (mm)	Outside Cross Section (mm)	GPI Thread Finish	Case Qty.	Case Price
14250-200	200	250	160	50 x 50	28-400	48	158.40

BABCOCK BOTTLE CENTRIFUGATION

The glassware contained in this section of the catalog is designed around a single test procedure - The Babcock Test. The variations on this test make the large variety of bottles and pipets necessary. The body of the test bottles is a reaction vessel, while the graduated neck is a measuring device. The graduations read in direct percentage of butter fat of the sample accurately introduced by a pipet in the case of liquids or measured weight of solid dairy product. The volume of the body does not enter into the calculations. The resultant fat column in the neck of the bottle may be read in either of two ways. 1) read the menisci of both top and bottom of the column and subtract the lower from the upper to give percent butter fat, or 2) using a pair of dividers, measure the fat column, then realign to "0" position using the blasting ring as an aid, and read percent butter fat directly off the scale. All Babcock tests involve centrifugation. The maximum recommended speed varies with the diameter of the centrifuge arm (diameter is measured between inside bottoms of opposing cups through axis of rotation with cups horizontally extended).

Diameter	Maximum Recommended RPM
14	934
16	873
18	825
20	784
22	749
24	718

Body O.D. is 36-37 mm for all Babcock bottles

Skim Milk Test, 0.5%

KIMAX bottle with auxilliary filling tube on the side to fill the bottle. Graduated neck has too narrow a bore to fill through - bottle is calibrated to 0.5%. Sample size is 18 grams. Scale is permanent brown stain. For pipets, see 580S or 3001.

Kimble Article No.	Size (%)	Subdivision (%)	±Tol. (%)	Sample Size (grams)	Maximum Overall Height Inches (mm)	Case Qty.	Case Price
530-50100	0.5(0.1mL)	0.01(0.002mL)	0.025	18	6.5 (165)	12	386.40



530

Milk Test, 8%, Sealed

KIMAX Babcock bottle designed for use in APHA 15.8 or AOAC 989.04 test procedures. Etched vertical line used to anchor calipers is centered in a contrasting darkened band which makes visualization easier. Marked with "Sealed 3" for use in states requiring this marking. Replaces former 1000 and 1002 bottles and uses a 3005S pipet.

Kimble Article No.	Size (%)	Subdivision (%)	±Tol. (%)	Sample Size (grams)	Maximum Overall Height Inches (mm)	Case Qty.	Case Price
1003S-8	8(1.6 mL)	0.1(.02 mL)	0.04 (0.008 mL)	18	6.5 (165)	12	218.76



1003S

Ice Cream Test, 10%

KIMAX Babcock bottle used for testing butter fat content. Calibrated to 10%. Scale is permanent brown stain.

Kimble Article No.	Size (%)	Subdivision (%)	±Tol. (%)	Sample Size (grams)	Maximum Overall Height Inches (mm)	Case Qty.	Case Price
1025-10	10(2mL)	0.1(0.02mL)	0.1	18	6.5 (165)	12	188.76



1025

Babcock Test Bottles



516



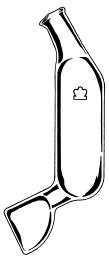
2085S



2015S



2075C



617600

Ice Cream and Half & Half Cream Test, 20%

KIMAX bottle without the supplementary filling opening provided on Paley Bottles, 508-20. Bottle is filled through the graduated neck. Calibrated to 20%. Scale is permanent brown stain. Designed for use in APHA test procedures.

Kimble Article No.	Size (%)	Subdivision (%)	±Tol. (%)	Sample Size (grams)	Maximum Overall Height Inches (mm)	Case Qty.	Case Price
516-20	20(2mL)	0.2 (0.02mL)	0.2	9	6.5 (165)	12	172.08

Cream and Cheese Test, 50%, Sealed

KIMAX Babcock bottle used for testing butter fat content. Calibrated for a 9 gram sample, to 50%. Etched vertical line used to anchor calipers is centered in a contrasting darkened band which makes visualization easier. Scale is permanent brown stain. Marked “Sealed 3” for use in states requiring this special marking. Designed for use in APHA 15.8 or AOAC 920.111 test procedures. Replaces 2085-50.

Kimble Article No.	Size (%)	Subdivision (%)	±Tol. (%)	Sample Size (grams)	Maximum Overall Height Inches (mm)	Case Qty.	Case Price
2085S-50	50(5mL)	0.5 (0.05mL)	0.25	9	6.5 (165)	12	150.36

Cream Test, 50%, Sealed

KIMAX Babcock bottle used for testing butter fat content. Calibrated to 50%. Scale is permanent brown stain. Marked “Sealed 3” for use in states requiring this special marking.

Kimble Article No.	Size (%)	Subdivision (%)	±Tol. (%)	Sample Size (grams)	Maximum Overall Height Inches (mm)	Case Qty.	Case Price
2015S-50	50(10mL)	0.5 (0.1mL)	0.5	18	6.5 (165)	12	193.32

Cream Test, Tall Style, 50%

KIMAX Babcock bottle used for testing butter fat content. Long and narrow neck. Calibrated for a 9 gram sample, to 50%. Scale is permanent brown stain. Without “Sealed 3” marking. Designed for use in AOAC 920.111 test procedures and to meet more restrictive California specifications. Bottle may also be used in test for unsulfonated residue of petroleum plant spray oils (ASTM D483).

Kimble Article No.	Size (%)	Subdivision (%)	±Tol. (%)	Sample Size (grams)	Maximum Overall Height Inches (mm)	Case Qty.	Case Price
2075C-50	50(5mL)	0.5 (0.05mL)	0.25	9	9 (229)	12	219.36

Fat Extraction

Primarily used to determine fat content in dairy products but may also be used for other food products. Settling chamber at the lower portion has a capacity of approximately 25 mL; the extraction chamber has a diameter of 35 mm. Top opening has a pouring lip and is tooled for a #0 rubber stopper.

Kontes Article No.	Capacity (mL)	Approx. Overall Height x Width (mm)	Case Qty.	Case Price
617600-0025	25	80 x 192	1	54.51

Ref: Method of Analysis-Fourteenth Edition

PALEY BOTTLES

These bottles were developed to facilitate the introduction of solid or viscous materials directly into the bottle. Neck is placed on one side of the body, leaving space for a large opening in the top to permit the addition of lumpy or viscous material directly on the bottom or into the body of the bottle with ease. A stirring rod can then be used to spread the material over the entire bottom or to break up the lumps. Material can be weighed directly in the bottles, eliminating the need for preparing the material in a separate container so that it can be poured down the graduated neck. Thus, the danger of losing a sample or it sticking to the neck is prevented. A rubber stopper is placed in the top opening after the addition of the sample, necessary acid or water being added through the neck. If desired, the fat column may be raised or lowered by a slight manipulation of the stopper. Bottle is made so that it can be used in the regular test bottle centrifuge equipment.

Before centrifugation, the bottle must be placed in the centrifuge with the neck facing toward the outside of the centrifuge (the rubber stopper toward the center axis), to prevent unnecessary breakage.



508

Cheese and Sour Cream, Paley, 20%

Designed for use in APHA 15.8 test procedures. Bottle is calibrated to 20%. Sample size is 9 grams. Scale is permanent brown stain. Three rubber stoppers are supplied with each bottle.

Kimble Article No.	Size (%)	Subdivision (%)	±Tol. (%)	Sample Size (grams)	Maximum Overall Height Inches (mm)	Case Qty.	Case Price
508-20	20(2mL)	0.20(0.02mL)	0.20	9	6.5 (165)	3	155.85



509

Cheese, Paley, 50%

KIMAX Babcock bottle used for testing butter fat content. Calibrated for a 9 gram sample, to 50%. Etched vertical line used to anchor calipers is centered in a contrasting darkened band which makes visualization easier. Scale is permanent brown stain. Three rubber stoppers are supplied with each bottle.

Kimble Article No.	Size (%)	Subdivision (%)	±Tol. (%)	Sample Size (grams)	Maximum Overall Height Inches (mm)	Case Qty.	Case Price
509-50	50(5mL)	0.5(0.05mL)	0.25	9	6.5 (165)	3	155.85

For Milk Dilution Bottles, see the ***Bottles*** section.

Centrifuge, Graduated

KIMAX tube with standard taper. Graduated and calibrated to contain. All markings are durable black ceramic enamel. Top is beaded for strength. Used in the determination of the solubility index of dry milk solids or whey products as specified by the American Dairy Products Institute. Also used in pulp determination of citrus products.

Kimble Article No.	Capacity (mL)	Subdivision (mL)	±Tolerance (mL)	O.D. x Length (mm)	Shelf-Pack Qty.	Case Qty.	Case Price
45167-50	50	0-1 in 0.1 1-2 in 0.2 2-10 in 0.5 10-20 in 1 and at 50	0 to 1 - 0.075 Above 1 to 2 - 0.150 Above 2 to 5 - 0.300 Above 5 to 10 - 0.50 Above 10 - 1.0	29 x 133	6	12	234.96



45167

Pipets, Cream - Milk Test



580S



570



3005S



3001



3010

Cream, Wide Tip

KIMAX pipet calibrated to deliver. Scale is permanent brown stain. Designed from ASTM Specification E1043, Type III (9 mL) and Type III A (18 mL) requirements.

Kimble Article No.	Capacity (mL)	±Tol. (mL)	Case Qty.	Case Price
570-9	9	0.05	12	107.40

Skim Milk, To Contain, 9 mL, Sealed

Calibrated to contain. Scale is permanent brown stain. Marked “Sealed 3”. Designed to comply with the Pennsylvania modified Babcock method, as referenced in APHA 15.8, for testing skim milk, lowfat milk, buttermilk or whey.

Kimble Article No.	Capacity (mL)	±Tol. (mL)	Case Qty.	Case Price
580S-9	9	0.05	1	13.99

Milk Test, To Contain, 17.6 mL, Sealed

KIMAX Babcock pipet calibrated to contain 17.6 mL of water, (equivalent to an 18 gram milk sample). A special rubber washer is supplied with each pipet. Grooves on the outer surface of the washer allow the air displaced by the incoming milk to escape freely. Scale is permanent brown stain. Marked “Sealed 3”, for use in states requiring this special marking. Designed from ASTM Specification E1043, Type II A requirements and for use in AOAC/APHA test procedures where blow-out after drainage is specified.

Kimble Article No.	Capacity (mL)	±Tol. (mL)	Approx. Length (mm)	Case Qty.	Case Price
3005S-176	17.6	0.05	330	12	158.88

Milk Test, To Deliver, 17.6 mL

KIMAX Babcock pipet calibrated to deliver 17.6 mL of water, (equivalent to an 18 gram milk sample). Calibrated for no blow-out. A special rubber washer is supplied with each pipet. Grooves on the outer surface of the washer allow air displaced by incoming milk to escape freely. Scale is permanent brown stain. Designed from ASTM Specification E1043, Type II B requirements.

Kimble Article No.	Capacity (mL)	±Tol. (mL)	Approx. Length (mm)	Case Qty.	Case Price
3001-176	17.6	0.05	330	12	172.32

Milk Test, Gerber, To Deliver, 11 mL

KIMAX pipet calibrated to deliver 11 mL of milk. Scale is permanent brown stain. Complies with requirements of APHA/Standard Methods for Analysis of Dairy Products, American Public Health Association (APHA). Designed from ASTM Specification E1043, Type VI requirements. A special rubber washer is supplied with each pipet and is used to support the pipet in the neck of the test bottle.

Kimble Article No.	Capacity (mL)	±Tol. (mL)	Case Qty.	Case Price
3010-11	11	0.05	12	184.68

For Disposable Milk Pipets, see 72106.
For Culture Tubes, see 45071.

Desiccator, Large Size, Knob Top

KIMAX desiccators are designed and made for durability and efficiency in daily use. The shape of the body allows easy removal of desiccant materials. Covers and bodies are interchangeable in the same size.

Due to the variety of conditions in vacuum work, it is not possible to guarantee desiccators against breakage.

Kimble Article No.	Approx. I.D. at Flange (mm)	Capacity (liters)	Approx. Height (mm)	For Use with Plate Size (mm)	Case Qty.	Case Price
21050-160	160	2.2	255	140	1	224.91
21050-200	200	3.8	310	190	1	359.52
21050-250	250	7.5	330	230	1	395.48
Replacement Parts						
21070-160	Cover Only					85.19
21070-200	Cover Only					172.15
21070-250	Cover Only					208.21



21050

Desiccator, Large Size, with Detachable ⅋ Stopcock Valve

KIMAX desiccators are designed and made for durability and efficiency in daily use. The shape of the body allows easy removal of desiccant materials. Covers and bodies are interchangeable in the same size. A simplified ⅋ 2 mm stopcock valve assembly for controlled vacuum type desiccators has replaced former sleeve valves. When properly greased, it should hold a vacuum of 29 inches of mercury for twenty-four hours. Through elimination of the sleeve, the current stopcock design minimizes chipping or marring of critically ground finishes during cleaning and assembly. The valve is secured to the desiccator lid by a neoprene grommet located in the knob of the cover. One end of the valve is equipped with a tapered stem for firmly inserting into the grommet. With this style, an accidental bump would be more readily absorbed than with styles having sealed assemblies. Opposite stem is tooled with a hose connection to accept 5/16 inch I.D. flexible tubing.

Due to the variety of conditions in vacuum work, it is not possible to guarantee desiccators against breakage.

Kimble Article No.	Approx. I.D. at Flange (mm)	Capacity (liters)	Approx. Height (mm)	⅋ Stopcock Size - Bore of Plug (mm)	For use with Plate Size (mm)	Case Qty.	Case Price
21200-160	160	2.2	255	2	140	1	316.01
21200-200	200	3.8	310	2	190	1	589.91
21200-250	250	7.5	330	2	230	1	530.85



21200

Crystallizing Dish

Top of each KIMAX dish is reinforced and fire polished to reduce chipping.



23000

Kimble Article No.	Approx. Dia. and Height (mm)	Approx. Overflow Capacity (mL)	Shelf-Pack Qty.	Case Qty.	Case Price
23000-5035	50 x 35	50	6	24	288.72
23000-6035	60 x 35	80	6	24	343.44
23000-7050	70 x 50	160	6	24	284.88
23000-8040	80 x 40	170	6	24	278.16
23000-9050	90 x 50	270	6	18	227.70
23000-10050	100 x 50	340	6	18	277.02
23000-12565	125 x 65	700	4	12	398.28
23000-15075	150 x 75	1200	4	8	329.44
23000-17090	170 x 90	1800	4	8	421.12
23000-19100	190 x 100	2600	3	6	330.96

Culture Dish, with Lid

Flat bottom with ground cover. The top of the dish and underside of the cover are ground to effect a liquid seal with a light coating of a silicone lubricant. Cells grow uniformly on the flat base which can be observed with an inverted microscope.



881500

Kontes Article No.	Approx. Dish I.D. x Depth (mm)	Approx. Overall Height x Width (mm)	Case Qty.	Case Price
881500-0021	31 x 12	16 x 41	1	22.60

Culture Dish, Petri, Set

KIMAX dishes have reinforced beaded edges to resist mechanical breakage and to help in centering the bottom inside the cover. Dishes remain clear after repeated use in wet or dry sterilization cycles. Covers have a fused-on bright red ceramic enamel marking spot and inscription, including “Cover”; Bottoms have a white ceramic enamel inscription, including “Bottom”. The combination of different colors and wording permits quick and easy identification of the parts when sorting, selecting and assembling pairs. Bottom also has a vertical arrow on the side to precisely locate serial dilution starting points. Shelf-packs contain twelve covers and twelve bottoms, which are packed in separate boxes. Designed from Federal Specification NNN-D-1478.



23060



23062



23064

Kimble Article No.	Approx. Dia. (mm)	Approx. Height (mm)	Shelf-Pack Qty.	Case Set Qty.	Case Price
23060-6015	60	15	12	72	416.16
23060-10010	100	10	12	72	389.52
23060-10015	100	15	12	72	393.84
23060-10020	100	20	12	72	329.76
23060-15020	150	20	12	24	304.08

Replacement Parts

23062-6015	Dish Cover Only, 60 mm, Qty. 12	38.16
23062-10010	Dish Cover Only, 100 mm, Qty. 12	34.20
23062-10015	Dish Cover Only, 100 mm, Qty. 12	31.92
23062-10020	Dish Cover Only, 100 mm, Qty. 12	38.64
23062-15020	Dish Cover Only, 150 mm, Qty. 12	96.24
23064-6015	Dish Bottom Only, 60 mm, Qty. 12	37.56
23064-10010	Dish Bottom Only,100 mm, Qty. 12	35.88
23064-10015	Dish Bottom Only,100 mm, Qty. 12	31.92
23064-10020	Dish Bottom Only,100 mm, Qty. 12	40.56
23064-15020	Dish Bottom Only,150 mm, Qty. 12	96.24

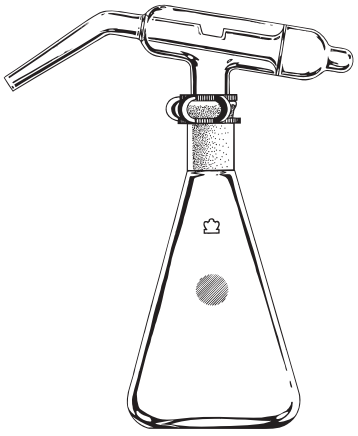
Tilting, Fixed Volume

All glass apparatus with a fixed volume dispensing head. 675300 polyacetal ⅋ clamp (one included) secures flask and head.

Kontes Article No.	Head Cap. (mL)	Reservoir Cap. (mL)	⅋ Joint	Approx. Height x Width (mm)	Case Qty.	Case Price
759300-0005	5	250	24/40	175 x 215	1	149.78
759300-0010	10	500	24/40	185 x 260	1	152.40
759300-0015	15	500	24/40	200 x 260	1	155.03
759300-0020	20	1000	29/42	205 x 290	1	161.60
759300-0025	25	1000	29/42	215 x 290	1	165.55
759300-0030	30	1000	29/42	225 x 290	1	168.16
759300-0040	40	2000	29/42	240 x 355	1	183.94
759300-0050	50	2000	29/42	250 x 355	1	191.82
759300-0060	60	2000	29/42	260 x 355	1	199.71
759300-0100	100	2000	29/42	275 x 355	1	211.53

Component Parts

759301-0005	Dispenser Head, ⅋ 24/40, 5 mL	1	120.21
759301-0010	Dispenser Head, ⅋ 24/40, 10 mL	1	120.21
759301-0015	Dispenser Head, ⅋ 24/40, 15 mL	1	123.16
759301-0020	Dispenser Head, ⅋ 29/42, 20 mL	1	127.77
759301-0025	Dispenser Head, ⅋ 29/42, 25 mL	1	131.39
759301-0030	Dispenser Head, ⅋ 29/42, 30 mL	1	136.63
759301-0040	Dispenser Head, ⅋ 29/42, 40 mL	1	141.91
759301-0050	Dispenser Head, ⅋ 29/42, 50 mL	1	149.78
759301-0060	Dispenser Head, ⅋ 29/42, 60 mL	1	156.35
759301-0100	Dispenser Head, ⅋ 29/42, 100 mL	1	169.50
617000-0424	Flask, ⅋ 24/40, 250 mL	1	24.15
617000-0624	Flask, ⅋ 24/40, 500 mL	1	25.32
617000-0729	Flask, ⅋ 29/42, 1000 mL	1	33.37
617000-0829	Flask, ⅋ 29/42, 2000 mL	1	42.25
675300-0024	Polyacetal Clamp, ⅋ 24/40, 1 Supplied, Pkg./12	12	39.53
675300-0029	Polyacetal Clamp, ⅋ 29/42, 1 Supplied, Pkg./12	12	40.77



759300

Dissolution, Test Vessel

KIMAX dissolution test vessel constructed of borosilicate glass, with a round bottom. Designed for Dissolution Testing Procedure for drug bioavailability as published by Kirchhoefer in Journal of the Association of Official Analytical Chemists, Vol. 59, March 1976, and U.S.P.

Kimble Article No.	Nominal Capacity (mL)	Approx. O.D. x Height (mm)	Shelf-Pack Qty.	Case Qty.	Case Price
33730-1000	1000	108 x 160	1	2	179.04



33730



Safety Program - *Play it safe in the lab.*

Our Safety Program discusses the ten basic safety rules of handling glassware as well as the technical properties and physics of glass. Available as a DVD.

Kimble Article No.	Format	Case Qty.	Case Price
99991D-99	DVD	1	23.99

See more safety products in the *SAFETYWARE* section.

Features

- common sample tubes used for all procedures
- uses a higher, adjustable, temperature range
  - *cyanide setting is 125 °C*
  - *ammonia and phenols is 200 °C*
- thermostatically controlled to avoid overheating
- ammonia and phenols can be run simultaneously

Kontes Brand Midi-Vap 3000 Distillation Systems are designed to support the semiautomatic colorimetry methods for drinking, ground, surface and saline waters - as well as domestic and industrial wastes.

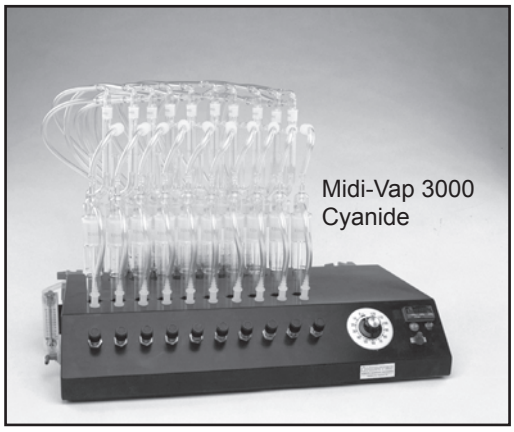
Save Space! 10-position manifold heater block requires less than two square feet of your lab bench space, weighs only 20 lbs. and can easily be moved.

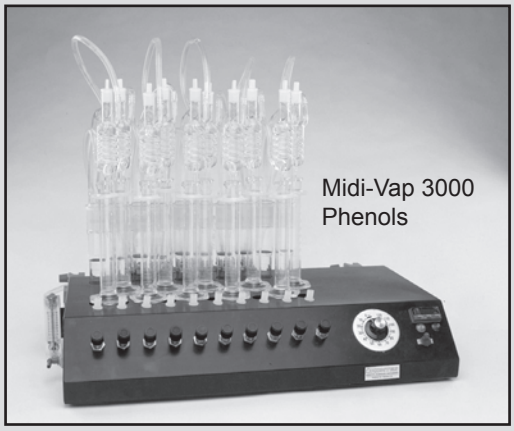
Save Time! Midi-Vap 3000 Systems feature a 120-minute timer with automated shut-off when reaction time is completed.

Save Money! Midi-Vap 3000 Systems use 50 mL of sample. Less start-up material means cost savings to you and less reagent waste for disposal.

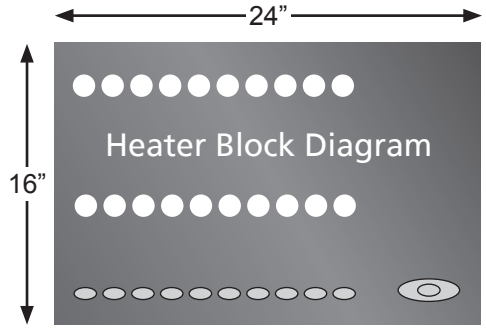
Reference: EPA/600/R-93/100: METHODS FOR THE DETERMINATION OF INORGANIC SUBSTANCES IN ENVIRONMENTAL SAMPLES.


Midi-Vap 3000
Ammonia


Midi-Vap 3000
Cyanide


Midi-Vap 3000
Phenols

System Specifications



Capacity
Up to ten 50 mL water samples.

Heater Block
PTFE-coated for resistance to acid corrosion and features a PTFE needle valve for accurate control of each absorber tube position. The unit is rated at 115V (1000W) and has a 120-minute timer on the heating system. The unit also features a timer light, heat light, digital temperature control system with thermocouple, solid state relay, high temperature protection switch and UL / CSA certified power entry module with integral 20 amp breaker. Vacuum valves are individually controlled PTFE needle valves.

Cooling
Parallel water manifold delivers a constant temperature flow of water to each cold-finger position. All samples are cooled at the same temperature assuring accuracy of test results.

Approximate Dimensions / Weight
Without Glassware: 24” L x 16” W x 5” H / 15 lbs.
Assembled with Glassware: 24” L x 16” W x 20” H / 20 lbs.

Tubing
Precut with vacuum quick-disconnect fittings provided.

Glassware Sets Included
Midi-Cyanide - 10 sets of 479160-0000 glassware
Midi-Ammonia - 5 sets of 479159-0002 glassware
Midi-Phenols - 5 sets of 479163-0002 glassware
Combination - 4 phenol, 4 ammonia, 2 cyanide

Draft Shield - Supplied with Midi-Ammonia and Midi-Phenols.

SAFETY 1st

CAUTION!
Midi-Phenol and Midi-Ammonia reactions produce toxic HCN gas. Perform these reactions under a well-ventilated fume hood.

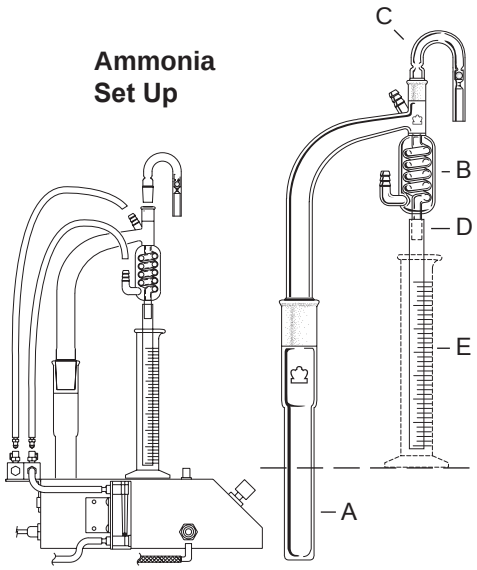


Call Toll-Free 888-546-2531

Midi-Vap 3000 Ammonia Distillation System

Kontes Article No.	Description	Case Qty.	Case Price
479190-3000	**Midi-Vap 3000 Ammonia Complete includes the following:**	1	**7,797.22**
479159-0002	Midi-Ammonia Glassware, set of 2 (479190-3000 supplied with 5 sets of 2)	2	**449.30**
479164-1602	Draft Shield	1	**20.72**
720140-3000	Midi-Vap 3000 Manifold Heater, 115-V	1	**6,009.67**
Component Parts			
479155-0050	(A) Tube, ⅋ 29/42	1	**52.26**
479156-3001	(B) Distilling Head, 3”	1	**141.56**
479156-4501	(B) Distilling Head, 4.5”	1	**141.56**
479157-0000	(C) Anti-siphon Adapter	1	**48.38**
479158-0318	(D) TFE Tubing, 2 each @ 6.5”	2	**5.52**
Optional Parts			
20024-50	(E) Graduated Receiver, 50 mL, 10 Required	24	450.72

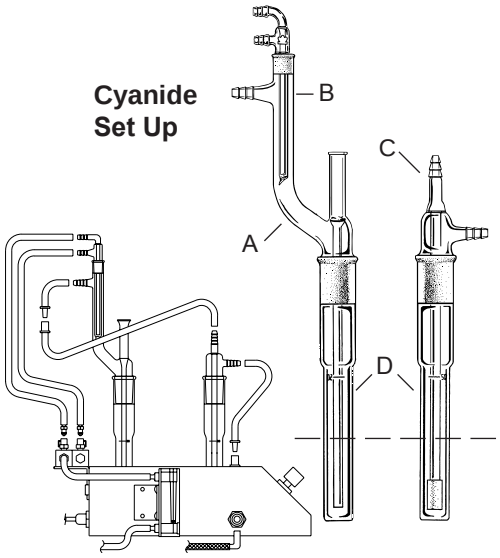
Ammonia Set Up



Midi-Vap 3000 Cyanide Distillation System

Kontes Article No.	Description	Case Qty.	Case Price
479200-3000	**Midi-Vap 3000 Cyanide Complete includes the following:**	1	**8,427.65**
479160-0000	Midi-Cyanide Glassware, 1 set (479200-3000 supplied with 10 sets)	1	**305.52**
720140-3000	Midi-Vap 3000 Manifold Heater, 115-V	1	**6,009.67**
Component Parts			
479161-0000	(A) Head, ⅋ 29/42 Lower, ⅋ 14/20 Upper	1	**120.28**
282000-0000	(B) Cold Finger Condenser, ⅋ 14/20, #1 Hose Connection	1	**55.20**
479162-0023	(C) Dispersion Tube, Coarse Porosity, ⅋ 29/42, #1 Hose Conn.	1	**87.46**
479155-0050	(D) Purge Tube, ⅋ 29/42 (2 Supplied)	1	**52.26**

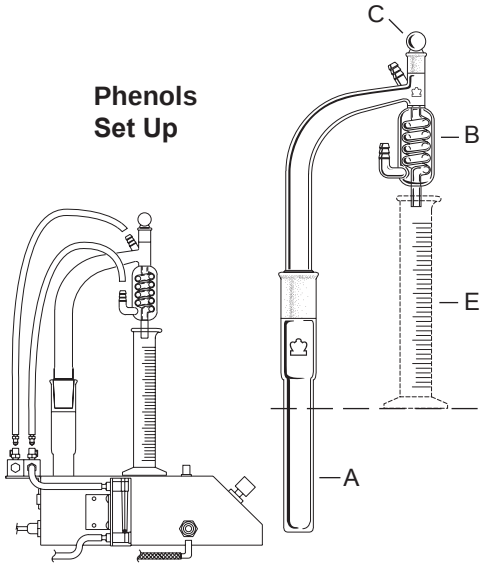
Cyanide Set Up



Midi-Vap 3000 Phenols Distillation System

Kontes Article No.	Description	Case Qty.	Case Price
479210-3000	**Midi-Vap 3000 Phenols Complete Includes the following:**	1	**7,520.73**
479163-0002	Midi-Phenols Glassware, set of 2 (479210-3000 supplied with 5 sets of 2)	2	**400.91**
479164-1602	Draft Shield	1	**20.72**
720140-3000	Midi-Vap 3000 Manifold Heater, 115-V	1	**6,009.67**
Component Parts			
479155-0050	(A) Tube, ⅋ 29/42	1	**52.26**
479156-3001	(B) Distilling Head, 3”	1	**141.56**
479156-4501	(B) Distilling Head, 4.5”	1	**141.56**
850500-1420	(C) Pennyhead Stopper, ⅋ 14/20	1	**13.70**
Optional Parts			
20024-50	(E) Graduated Receiver, 50 mL, , 10 Required	24	450.72

Phenols Set Up



*Need your **Midi-Vap 3000** to perform multiple tests simultaneously? See our combo system on the next page.*

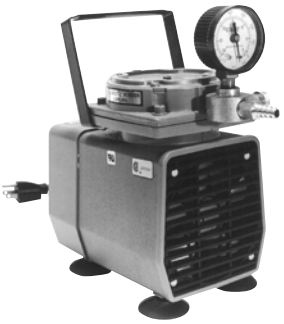




Midi-Vap 3000 Combination Distillation System

Kontes Article No.	Description	Case Qty.	Case Price
479220-3000	**Midi-Vap 3000, Combination Complete Includes the following:**	1	**8,018.42**
479159-0002	Midi-Ammonia Glassware, set of 2 (479220-3000 supplied with 2 sets of 2)	2	**449.30**
479160-0000	Midi-Cyanide Glassware, 1 set (479220-3000 supplied with 2 sets)	1	**305.52**
479163-0002	Midi-Phenols Glassware, set of 2 (479220-3000 supplied with 2 sets of 2)	2	**400.91**
479164-1602	Draft Shield	1	**20.72**
720140-3000	Midi-Vap 3000 Manifold Heater, 115-V	1	**6,009.67**
Optional Parts			
20024-50	Graduated Receiver, 50 mL, 8 Required	24	450.72

Accessories for Your Midi-Vap 3000 Distillation System



923910

Pressure / Vacuum Diaphragm Pump

A quiet, reliable vacuum source. Protected internal surfaces provide high resistance to corrosion and solvent attack. Supplied complete with a gauge, a regulator, and fittings. A vacuum source is required for Midi-Cyanide and optional on Midi-Ammonia and Midi-Phenols testing.

Specifications

Ultimate Vacuum: 25" (635 mm) Hg
Maximum Free Air Flow: 1.1 CFM (0.034 cubic meters)

Kontes Article No.	VAC	Hz	Amps	Case Qty.	Case Price
923910-0115	115	60	4.2	1	546.79



20024

Graduated Receiver

Kimble Brand KIMAX® cylinder calibrated to deliver. SAFE-GUARD bumper included. Scale is durable, white, ceramic enamel. Designed from ASTM Specification E1272, Style 1, Class B requirements.

Kimble Article No.	Cap. (mL)	Graduated Interval	±Tol. (mL)	Case Qty.	Case Price
20024-50	50	3 to 50 in 1 mL	0.4	24	450.72

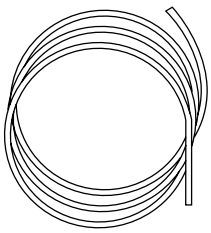


881338

Jack Stand Support

This positioner provides a table support for hot plates, water baths, glassware and many other items. Simply turn the knob to get the exact height required. Construction is of chemically-resistant anodized aluminum and the top plate has a skid pad to prevent slippage. A large, easily-gripped knob makes height adjustments easy.

Kontes Article No.	Closed x Open Height (in.)	Top Plate Size (in.)	Max. Support Weight (lbs.)	Case Qty.	Case Price
881338-0000	2.75 x 7.75	6.25 x 7.5	10	1	333.69



479215 through 479219

Replacement Tubing

Kontes Article No.	Description	Qty.	Case Price
479215-0152	Tubing, Reinforced Vacuum, 5 Feet	1	23.23
479216-0305	Tubing, Water In/Out-Manifold, 10 Feet	1	21.17
479218-0046	Tubing, Cold Finger-Disp Head	5	31.11
479219-0018	Tubing, Disp Head-Vac Valve	5	21.41
479217-0043	Tubing, Coldfinger to Manifold Tubing, 17 Inches	Pkg/5	75.34

Apparatus, Alginates Assay

Alginates assay apparatus for the determination of alginates as referenced in the USP Volume XXIII, test procedure 311.

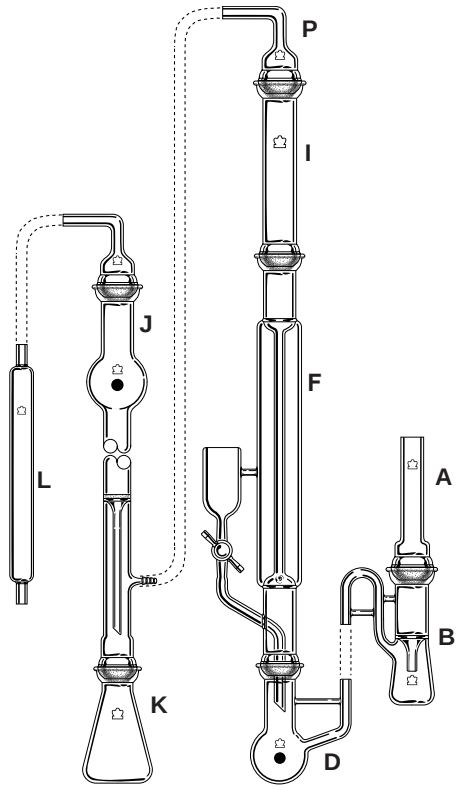
Kontes Article No.	Description	Case Qty.	Case Price
527000-0000	Alginates Assay Apparatus	1	655.61

Components

Kontes Article No.	Description	Case Qty.	Case Price
527001-0000	A, Soda Lime Column, $ 35/25 Ball Joint	1	29.18
527002-0000	B, Mercury Valve, 25 mL, $ 35/25 Socket Joint	1	182.63
527003-0000	D, Reaction Flask, 100 mL, $ 35/25 Socket Joint	1	71.27
527004-0000	F, Reflux Condenser, $ 35/25 Ball/Socket Joints	1	190.50
527005-0000	I, Trap, 160mm, $ 35/35 Ball/Socket Joints	1	44.41
527006-0000	J, Absorption Tower, $ 35/25 Ball/Socket Joints with Medium Porosity Frit	1	116.27
617050-0436	K, Erlenmeyer Flask, 250 mL, $ 35/25 Socket Joint	1	31.40
527007-0000	L, Soda Lime Tower, 200 mm	1	18.26
527008-0000	P, Adapter, $ 35/25, 90° (2 supplied)	1	31.80

Accessories to Alginates Apparatus

Kontes Article No.	Description	Case Qty.	Case Price
721000-0100	Heating Mantle, 100 mL 80W, 115V	1	119.72
730900-0000	Mantle Power Control, 115V 50/60Hz	1	337.32
743200-0001	Lubricant, 75 gm tube	1	25.32
675000-0035	Pinch Clamp, size 35	1	19.36
826700-0002	Three Way Hi-Vac® Valve, with PTFE Plugs	1	90.91



527000

Apparatus, Full Length $ 19/38 Joints

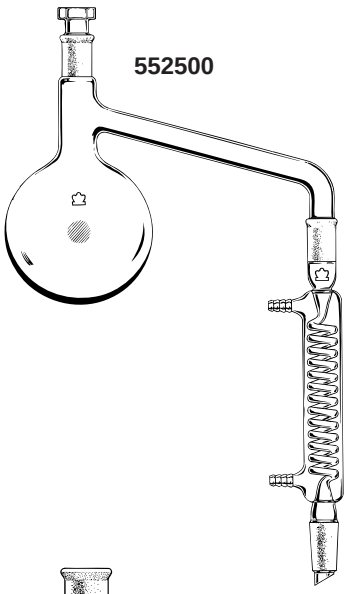
KIMAX apparatus used in general purpose distillation and phenol distillation. Flask has a flat bottom and a distillation head with a $ 19/38 joint. Supplied with a TS stopper. Condenser is Graham-style having a 200 mm jacket with a TS 19/38 joint at the top only. For method, reference APHA Examination of Water and Wastewater: Method 4500-NH3 nitrogen (ammonia) in purified drinking water, natural water, and highly purified wastewaters (concentration < 20 µg/L). Method calls for use with tall form 50 mL Nessler Tubes (45315A & B-50).

Kimble Article No.	Capacity (mL)	$ Stopper	Case Qty.	Case Price
21500-500	500	22	1	272.20
21500-1000	1000	27	1	274.10

Kimble Article No.	Description	Case Qty.	Case Price
21500G-500	Flask Only, 500 mL, $ 19/38, $ 22	1	153.82
21500G-1000	Flask Only,1000 mL, $ 19/38, $ 27	1	162.12



21500



Apparatus, Ammonia Nitrogen

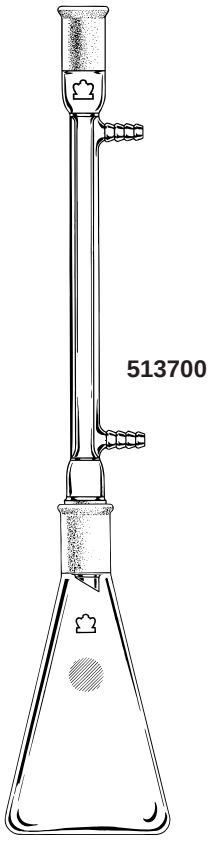
For determining the proteinaceous nitrogen content in water. Also very useful for preparing small quantities of glass distilled water. Apparatus can be used for phenol, selenium and fluoride determinations.

Kontes Article No.	Flask Cap. (mL)	Joints	Hose Connections	Approx. Overall Height x Width (mm)	Case Qty.	Case Price
552500-1000	1000	24/40	#2	595 x 310	1	194.45

Component Parts

605030-1524	Distilling Flask, 24/40, 1000 mL	1	99.96
439000-2430	Graham Condenser, 24/40, 300 mm Jacket	1	129.52
850800-2440	Hex Head Stopper, 24/40	1	25.98

Ref: EPA 600/4-79-020 Method 350.2



Apparatus, COD Reflux

Apparatus for the determination of chemical oxygen demand according to Method 5220B from the Standard Methods for the Examination of Water and Wastewater, 18th edition.

Kontes Article No.	Description	Case Qty.	Case Price
513700-0000	Complete Apparatus	1	95.25

Component Parts

617000-0624	Erlenmeyer, 24/40, 500 mL	1	25.32
452000-2430	West Condenser, 24/40, 300 mm	1	87.43

Hose Connector Tubing Size Chart

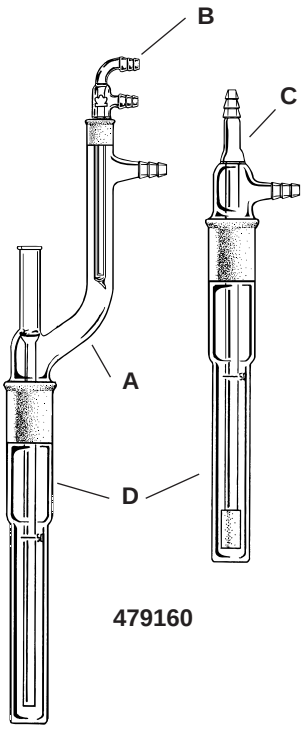
Hose Connector Size	Fits Flexible Tubing I.D.
1	1/4”
2	3/8”
3	1/2”
4	3/4”

Apparatus, Midi-Cyanide

Apparatus for removing interfering substances in quantitative analysis of various industrial waste waters, saline and reagent grade water. Cyanide as hydrocyanic acid (HCN) is released from cyanide complexes by means of a reflux-distillation and absorbed in a scrubber containing a sodium hydroxide solution. Designed for 50 mL or less of aqueous samples where concentrations have exceeded calibration standards. Purge tube capacity is 50 mL. All hose connections are #1.

Kontes Article No.	Description	Approx. Overall Height (mm)	Case Qty.	Case Price
479160-0000	Complete	475	1	305.52
479160-0005	Complete	475	5	1,381.10
Component Parts				
479161-0000	(A) Head, ⅋ 29/42 Lower, ⅋ 14/20 Upper		1	120.28
282000-0000	(B) Cold Finger Condenser, ⅋ 14/20, #1 Hose Connection		1	55.20
479162-0023	(C) Dispersion Tube, Coarse Porosity, ⅋ 29/42, #1 Hose Connection		1	87.46
479155-0050	(D) Purge Tube, ⅋ 29/42 (2 Supplied)		1	52.26

Ref: Method 335.2 Contract Lab Program Statement of Work 788.

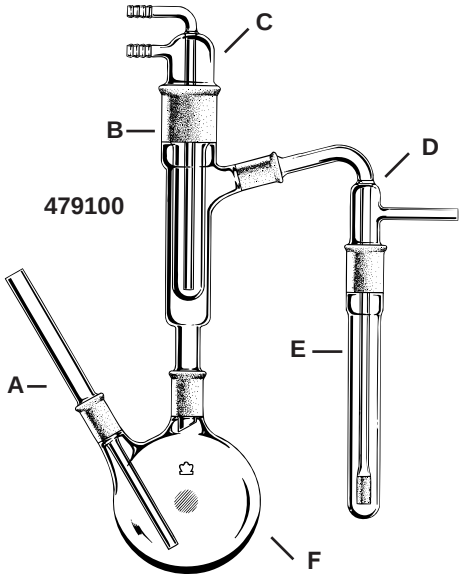


479160

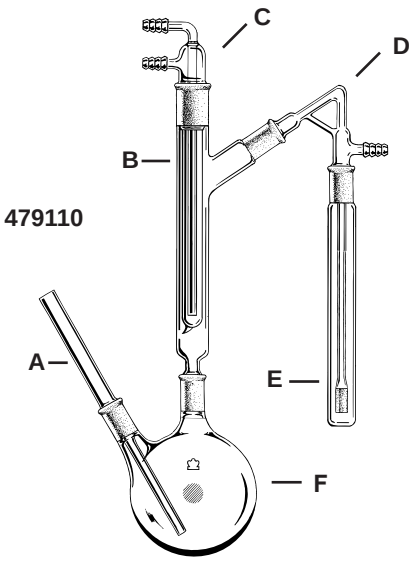
Apparatus, Cyanide

This apparatus has been successfully used in the analysis of industrial waste waters, saline and reagent grade water. Cyanide as hydrocyanic acid (HCN) is released from cyanide complexes by means of reflux-distillation and absorbed in a scrubber containing a sodium hydroxide solution. The cyanide ion in the absorbing solution is then determined colorimetrically or by volumetric titration.

Kontes Article No.	Flask Cap. (mL)	Hose Connections	Approx. Overall Height x Width (mm)	Case Qty.	Case Price
479100-0000	1000	#2	500 x 450	1	459.02
Component Parts					
479101-0000	(A) Inlet Tube, ⅋ 19/38			1	33.47
479102-0000	(B) Reflux Condenser, ⅋ 24/40 Lower, ⅋ 45/50 Upper, ⅋ 19/38 Side			1	127.98
479103-0000	(C) Cold Finger Condenser, ⅋ 45/50			1	106.82
479104-0000	(D) Dispersion Tube, Medium Porosity, ⅋ 19/38 Side, ⅋ 29/42 Lower			1	98.55
479105-0000	(E) Receiver Tube, ⅋ 29/42			1	42.98
605020-1419	(F) Flask, ⅋ 24/40 Center Neck, ⅋ 19/38 Side Neck			1	74.66



479100

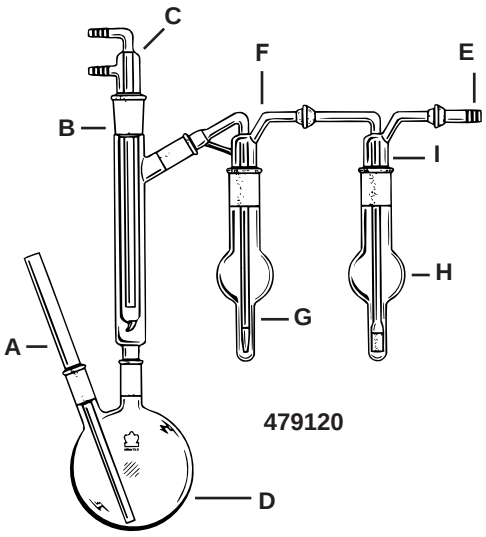


479110

Apparatus, Cyanide, ⅋ 19/38

Apparatus for removing interfering substances in quantitative analysis of various industrial waste waters, saline and reagent grade water. Cyanide as hydrocyanic acid (HCN) is released from cyanide complexes by means of a reflux-distillation and absorbed in a scrubber containing a sodium hydroxide solution. Design features compact ⅋ 19/38 joints.

Kontes Article No.	Description	Case Qty.	Case Price
479110-0000	Complete	1	357.16
Component Parts			
479101-0000	(A) Inlet Tube, ⅋ 19/38	1	33.47
479112-0000	(B) Reflux Body, ⅋ 19/38 Lower and Side, ⅋ 29/42 Upper	1	83.67
518501-0000	(C) Cold Finger Condenser, ⅋ 29/42	1	70.15
479114-0000	(D) Dispersion Tube, Medium Porosity, ⅋ 19/38 Lower and Side	1	98.55
479115-0000	(E) Receiver Tube, ⅋ 19/38	1	32.27
605020-0019	(F) Flask, ⅋ 19/38 Center and Side Necks, 1000 mL	1	73.40



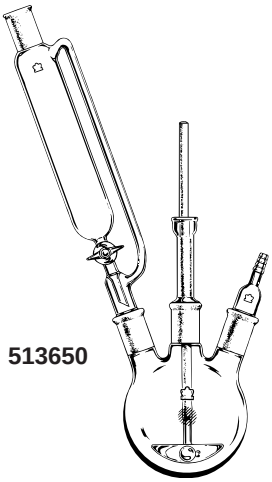
479120

Apparatus, Cyanide, ⅋ 19/38

Apparatus for removing interfering substances in quantitative analysis of industrial waste waters, saline and reagent grade water. Samples react with acid to convert cyanide to HCN. The first bubbler acts as a scrubber to remove sulfides. Cyanide is absorbed in the second bubbler.

Kontes Article No.	Description	Case Qty.	Case Price
479120-0000	Complete	1	480.18
Component Parts			
479101-0000	(A) Inlet Tube, ⅋ 19/38	1	33.47
479112-0000	(B) Reflux Body, ⅋ 19/38 Lower and Side, ⅋ 29/42 Upper	1	83.67
518501-0000	(C) Cold Finger Condenser, ⅋ 29/42	1	70.15
605020-0019	(D) Flask, ⅋ 19/38 Center and Side Necks, 1000 mL	1	73.40
523870-0189	(E) Hose Adapter, Socket, ⅋ 18/9	1	26.88
479121-0000	(F) Scrubber Tube, ⅋ 19/38 Side and ⅋ 29/42 Lower	1	129.29
652267-0000	(G) Scrubber Flask, ⅋ 29/42	1	32.40
652265-0000	(H) Absorber, ⅋ 29/42 Flask and	1	119.06
675310-0019	(I) Dispersion Tube, ⅋ 18/7 Upper and ⅋ 29/42 Lower Clamp, Size ⅋ 18/9 (2 Supplied) Pkg./12	12	42.47

Ref. EPA 600/4-79-020, Method 335.2



513650

Apparatus, Cyanides or Sulfides from Wastes

This apparatus is designed for the analysis of reactive wastes as specified in SW-846. Accessories 479154-0023 and 479155-0050 are both components to make a scrubber.

Kontes Article No.	Description	Case Qty.	Case Price
513650-0000	Complete	1	461.64
Component Parts			
634030-0250	Funnel, 250 mL, ⅋ 24/40	1	211.53
606020-1024	Flask, ⅋ 24/40, 500 mL	1	86.49
781030-0124	Stirrer, ⅋ 24/40	1	134.93
182900-2440	Adapter, ⅋ 24/40, (1 Supplied)	1	22.98
Accessories			
479155-0050	Purge Tube, ⅋ 29/42	1	52.26
479162-0023	Dispersion Tube, Coarse Porosity, ⅋ 29/42, #1 Hose Connection	1	87.46
788000-0021	Adapter, Stirrer	1	24.21
179700-0824	Adapter, BEVEL-SEAL™, ⅋ 24/40, 5-8 mm Range	1	28.44
676001-2440	Sleeve, PTFE, ⅋ 24/40, Pkg./6	6	62.34

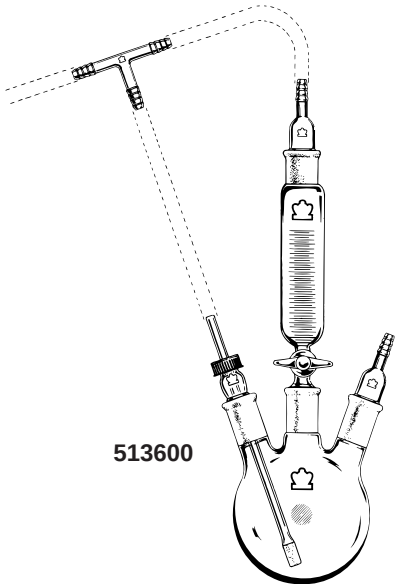
Ref: SW-846 -Method 7.3.3.2 for Hydrogen Cyanide. Method 7.3.4.2 for Hydrogen Sulfide.

Apparatus, Acid Soluble and Insoluble Sulfides

Used to measure concentrations of total and disolved acid soluable sulfides in water. Copper sulfide is the only common acid insoluable sulfide.

Kontes Article No.	Description	Case Qty.	Case Price
513600-0000	Complete	1	374.36
Component Parts			
633531-0125	Funnel, 125 mL, ⅋ 24/40	1	161.60
606020-1024	Flask, ⅋ 24/40, 500 mL	1	86.49
182900-2440	Adapter, ⅋ 24/40, (2 Supplied)	1	22.98
179700-0824	Adapter, BEVEL-SEAL™, ⅋ 24/40, 5-8 mm Range	1	28.44
956500-0023	Fritted Tube, Coarse, 12mm	1	44.02
Accessories			
893500-0022	Connector Tube, T-Shaped	1	15.46

Ref: SW-846 - Method 9030A and 9031.



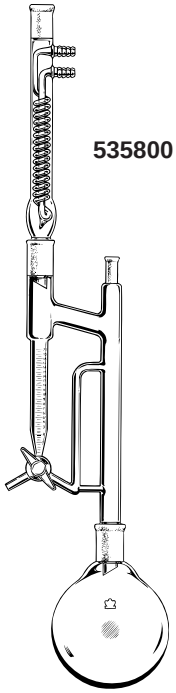
513600

Apparatus, Dean Stark

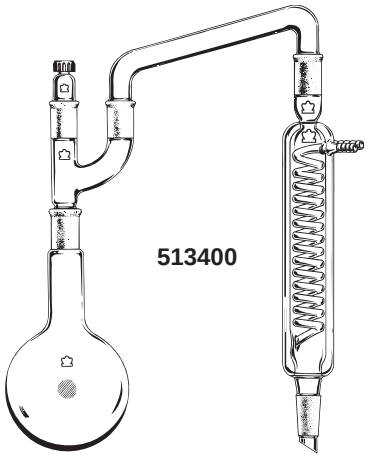
Designed for solvents both heavier and lighter than water. Unit is compact in both the ⅋ 24/40 and ⅋ 14/20 sizes. Lower three-way stopcock provides a sample port and the apparatus can be drained without disassembly. Trap area is positioned well above the boiling flask. Stopcock plug is 822501-0002.

Kontes Article No.	Flask Cap. (mL)	⅋ Joints	Hose Connections	Approx. Overall Height x Width	Case Qty.	Case Price
535800-0000	1000	24/40	#2	780 x 180	1	490.66
Component Parts						
535801-0000	Receiver, ⅋ 24/40				1	285.10
601000-0724	Boiling Flask, ⅋ 24/40, 1000 mL				1	32.50
457000-0175	Coil Condenser, ⅋ 24/40, 175 mm				1	212.33

Ref: Design suggested by Dr. A.J. East, Hoechst Corp.



535800



Apparatus, Fluoride

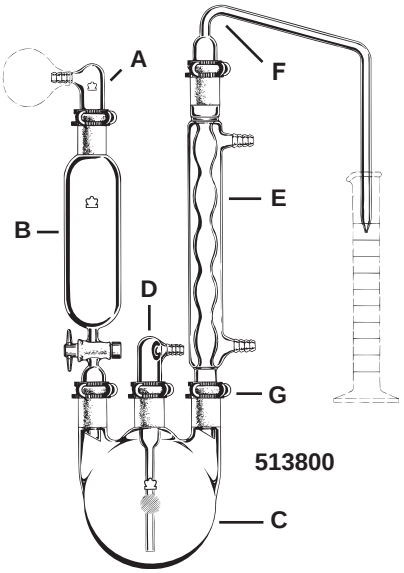
For determining the fluoride ion in water samples. The fluoride ion is isolated in the distillation.

Kontes Article No.	Flask Cap. (mL)	Joints	Hose Connections	Approx. Overall Height x Width (mm)	Case Qty.	Case Price
513400-0000	1000	24/40	#2	465 x 345	1	380.98

Component Parts

161500-2440	Claisen Adapter, 24/40	1	60.55
169500-2440	Connecting Adapter, 24/40	1	53.25
179700-2124	Thermometer Adapter, 24/40, Accommodation Range 5.5-6.5 mm	1	23.75
457270-2425	Coil Condenser, 24/40, 225 mm	1	246.64
601010-0724	Flask, 24/40, 1000 mL	1	34.45

Ref: ASTM D 1179-80 Fluoride Ion in Water Standard Methods for the Examination of Water and Wastewater Seventeenth Edition, Method 4500 F-B Direct for Distillation for Fluoride, pp. 4-86.



Apparatus, Monier-Williams Sulfites

For the determination of free sulfite and a reproducible portion of the bound sulfites in food, such as the carbonyl addition products. To ensure a complete seal during the analysis, each joint should be clamped. Five clamps are supplied with the complete apparatus.

Kontes Article No.	Flask Cap. (mL)	Funnel Cap. Cap(mL)	Joints	Hose Connect.	Approx. Overall H x W (mm)	Case Qty.	Case Price
513800-0000	1000	250	24/40	#2	595 x 300	1	494.01

Component Parts

183000-2440	(A) Inlet Adapter, 24/40	1	22.98
633030-0250	(B) Addition Funnel, 24/40, 250 mL	1	151.09
606000-1424	(C) Flask, 24/40, 1000 mL	1	100.69
513801-0000	(D) Flask Inlet Adapter, 24/40	1	50.84
431000-2430	(E) Allihn Condenser, 24/40, 300 mm Jacket	1	105.70
513802-0000	(F) Bubbler Tube, 24/40	1	66.03
675300-0024	(G) Polyacetal Clamp, Fits 24/40 and 24/25 Joints (5 Supplied)	12	39.53

Accessories

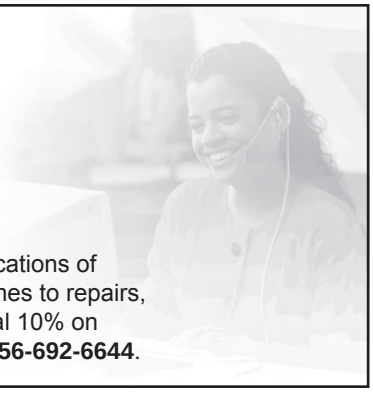
20024-100	Cylinder, 100 mL Graduated	1	537.84

Ref: Federal Register, Vol. 51 No. 131, July 9, 1986.



- **Custom Fabrications**
- **Quality Repairs**
- **Modifications of All Kinds**
- **No Order Too Small**
- **Quick Turnaround**

KONTES
custom glass shop
*call toll-free **800-682-6644***
customglass@kimble-chase.com



Contact the **Kontes Custom Glass Shop** at KIMBLE CHASE for modifications of standard products or fabrication of your unique designs. And when it comes to repairs, we can save you up to 75% of the cost of a new item. Save an additional 10% on repairs of Kontes or Kimble Brand products. Fax your requirements to **856-692-6644**.

Kjeldahl Distillation Apparatus

Design Features:

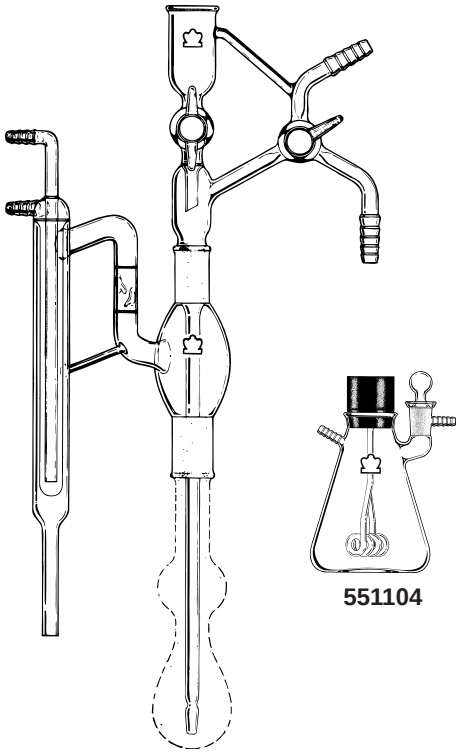
- Entrance tube for complete transfer to the distillation flask. No chance of introducing sample into the sidearm.
- Platinum gauze assures maximum distillation rates with negligible blank.
- Hopkins Condenser directly attached to distillation head. Removes possibility of atmosphere condensation and contamination.
- Pressurized steam entry into sample improves distilling efficiency. Velocity of ammonia emerging from condenser is maximized prior to entrapment in a boric acid solution.
- Sample can be based on the actual weight or the amount of distillable ammonia after digestion. Can be used for ultra-micro, macro or semi-micro determinations.

Digestion tube with sample is inserted into the distillation head. Steam generator is connected to the unit with flexible tubing (not supplied). The steam generator consists of a two liter flask with a stopcock vent and a 600 watt immersion heating coil. It will not be damaged if it runs dry. Heat control can be maintained by using an accessory variable-voltage transformer. See 551600 30 mL and 100mL flasks for use with short entrance tube. Stopcock plugs are PTFE

Power Requirement: 115-volt, 50/60 Hz, 600 watts.

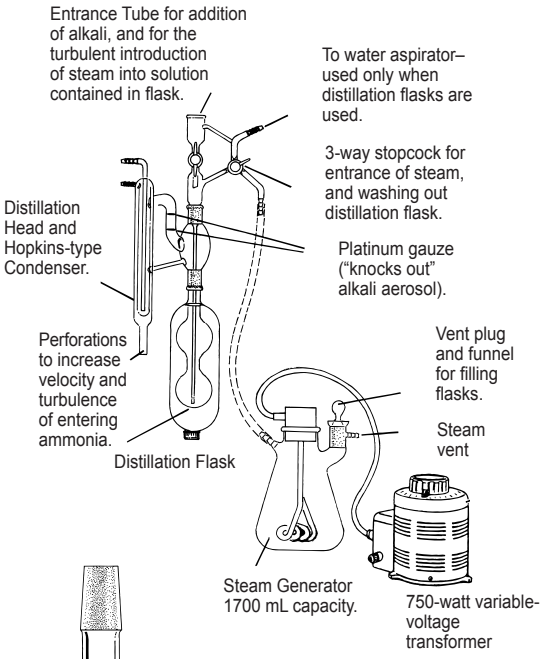
Kontes Article No.	Upper Joint	Lower Joint	Approx. Overall Height x Width (mm)	Case Qty.	Case Price
551100-0000	19/38	24/40	485 x 235	1	1,583.07
Component Parts					
551101-0000	Distillation Head and Condenser, #1 Hose Connectors			1	450.83
551104-0000	Steam Generator			1	811.49
551106-0285	Short Entrance Tube, 285 mm, #2 Hose Connectors			1	342.63
Replacement Part for 551106-0285 Entrance Tube					
821001-0004	Stopcock Plug, PTFE, Straight, 4 mm			1	13.81

Ref: EPA 600/4-79-020 Method 351.



551104

551100

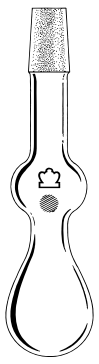


Kjeldahl Digestion / Distillation Flask

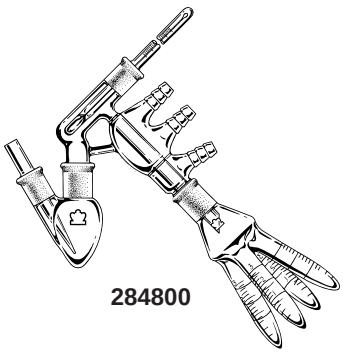
Dual purpose flask can be used in 551100 distillation apparatus. 24/40 allows connection to the distillation assembly following the digestion process, thus saving a transfer. Flask design includes an expansion bulb as a guard against bumping and foaming during digestion. The 30 mL flask has a three bulb configuration. Also allows a more vigorous introduction of steam during distillation.

Kontes Article No.	Cap. (mL)	Joint	Approx. Overall Height x Width (mm)	Case Qty.	Case Price
551600-0030	30	24/40	210 x 40	1	33.49
551600-0100	100	24/40	210 x 52	1	34.57

Hose Connector Tubing Size Chart	
Hose Connector Size	Fits Flexible Tubing I.D.
1	1/4"
2	3/8"
3	1/2"
4	3/4"



551600



284800

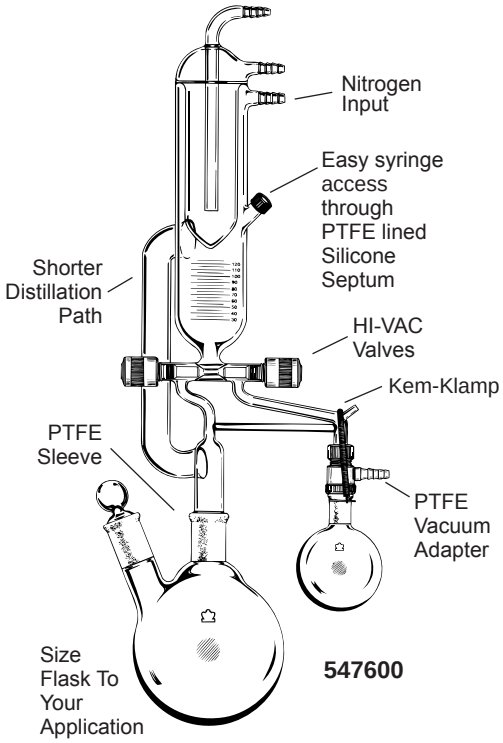
Apparatus, Short Path, Compact

This design utilizes a thermometer bulb as column packing. Compact head and condenser provide better separation by reducing wetted surfaces. Cow-type receiver has tubes that are aligned for best product recovery. Pear-shaped flask has a ⧩ 10/18 side arm for a bleed tube.

Kontes Article No.	⧩ Joints	Thermometer and Side Arm ⧩ Joints	Hose Connections	Approx. Overall Ht. x Width (mm)	Case Qty.	Case Price
284800-0000	14/20	10/18	#1	190 x 215	1	388.87

Component Parts

287100-0000	Distilling Head	1	153.98
288200-0000	Distillation Receiver	1	128.54
294750-0010	Flask, Pear Shaped, 10 mL	1	42.41
309000-0021	Thermometer 25 mm, 250°C	1	40.47
275400-0035	Bleed Tube, Size 35	1	15.01



547600

Apparatus, Solvent Repurification

Designed for the distillation, reflux, storage and delivery of solvents. Two grease-free 4 mm lower PTFE valves with 826601-0004 plugs permit the distilled solvent to be returned to the flask, taken-off or stored in the graduated receiver. Access port has 1/2”-20 male threads to accept a PTFE-faced silicone septum with a polypropylene open top cap. Hose connections are #2.

Kontes Article No.	Capacity (mL)	Graduations x Subdiv. (mL)	Lower ⧩ Joint	Approx. Overall Height x Width (mm)	Case Qty.	Case Price
547600-0125	Head Only 125	30 to 125 x 5	24/40	600 x 200	1	354.94
547600-0500	Head Only 500	50 to 500 x 25	24/40	710 x 200	1	471.08

Replacement Parts

774161-0013	PTFE-Faced Silicone Septum, 13 mm, Pkg./48 (1 Supplied)	48	34.65
179802-0021	Polypropylene Open Top Cap, 1/2”-20 Thread, Pkg./6 (1 Supplied)	6	28.30

Accessories

605020-1024	Two-Neck Boiling Flask, ⧩ 24/40, 500 mL	1	62.42
605020-1424	Two-Neck Boiling Flask, ⧩ 24/40, 1000 mL	1	76.63
605020-1824	Two-Neck Boiling Flask, ⧩ 24/40, 2000 mL	1	97.87
294000-0050	Single-Neck Take-Off Flask, ⧩ 14/20, 50 mL	1	18.32
294000-0100	Single-Neck Take-Off Flask, ⧩ 14/20, 100 mL	1	18.32
294000-0250	Single-Neck Take-Off Flask, ⧩ 14/20, 250 mL	1	22.01
179850-2314	Vacuum Take-Off Adapter, ⧩ 14/20	1	67.21
675500-1420	Kem-Klamp®, ⧩ 14/20	1	10.11
851000-2440	Pennyhead Stopper, ⧩ 24/40	1	26.63
675300-0024	Polyacetal Clamp, Fits ⧩ 24/40 and 24/25 Joints, Pkg./12	12	39.53

Hose Connector Tubing Size Chart

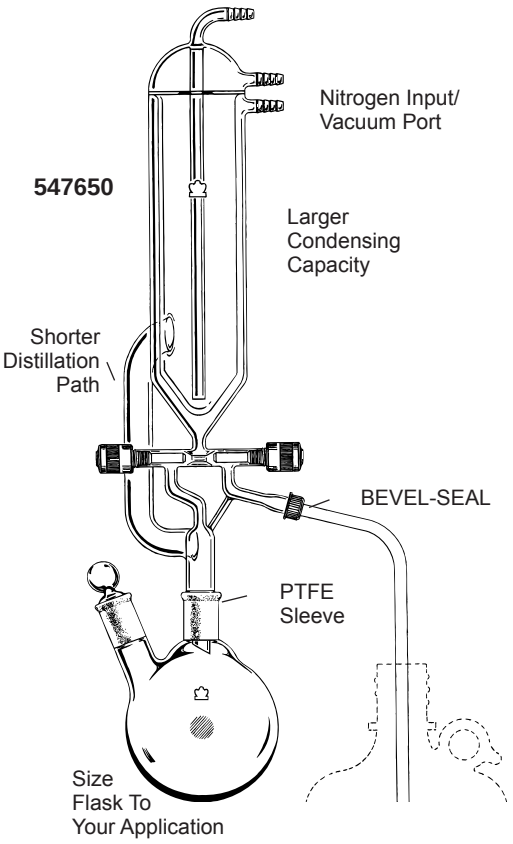
Hose Connector Size	Fits Flexible Tubing I.D.
1	1/4”
2	3/8”
3	1/2”
4	3/4”

Apparatus, Solvent Repurification, High Capacity Output Head for Freon 113 or Similar Solvents

Designed for the distillation, reflux and delivery of distilled product at the rate of 1 liter per hour. Two grease-free 4 mm lower PTFE valves, with 826601-0004 plugs permit return to flask or take-off. Unique take-off has #8 BEVEL-SEAL™ thread to accept a holed cap and an o-ring seal for direct connection of 1/4" O.D. PTFE tubing.

Designed in collaboration with Carl Craig, Enseca Rocky Mtn. Analytical, Wheat Ridge, CO. Ref: EPA-600/4-79, pg. 20, Method 413.1.

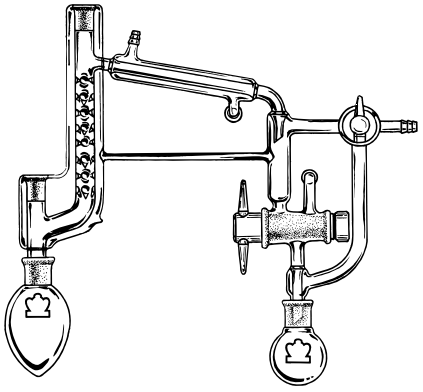
Kontes Article No.	Description	Output, (L/hr)	Lower ⧩ Joint	Tubing Conn.	Approx. Overall Height x Width (mm)	Case Qty.	Case Price
547650-0000	Head Only	1	24/40	1/4"	520 x 160	1	465.88
Accessories							
605020-1824	Two-Neck Boiling Flask, ⧩ 24/40, 2000 mL					1	97.87
606000-2624	Three-Neck Boiling Flask, ⧩ 24/40, 5000 mL					1	167.03
420823-0014	Tubing, PTFE, 1/4" O.D. x 10 ft.					1	70.09
851000-2440	Pennyhead Stopper, ⧩ 24/40					1	26.63
675300-0024	Polyacetal Clamp, Fits ⧩ 24/40 Joints, Pkg./12					12	39.53
501000-2024	Distillation Column, 200 mm, ⧩ 24/40					1	51.16



Apparatus, Vacuum, Vigreux

Vacuum jacketed fractionation apparatus used for distilling small quantities under vacuum. The ⧩ 10/18 outer joint at the top of the main tube permits insertion of a 309000, 25 mm immersion thermometer for vapor temperature or a 871000, 100 mm immersion thermometer for liquid temperature within the flask. The ⧩ 10/18 outer joint at the top of the Vigreux column permits insertion of a 309000, 25 mm immersion thermometer for vapor temperature readings. Lower joints are ⧩ 14/20 for the boiling flask and the receiving flask. PTFE upper stopcock plug is 822001-0002 . Lower plug is 823001-0002. Receiver may be removed without interrupting or disturbing the distillation.

Kontes Article No.		Approx. Overall Height x Width (mm)	Case Qty.	Case Price
285053-0000		300 x 290	1	715.12
Component Parts				
285054-0000	Distilling Head		1	670.76
294250-0050	Flask, Pear Shaped, 50 mL		1	24.01
294000-0025	Flask, Receiving, 25 mL		1	18.32

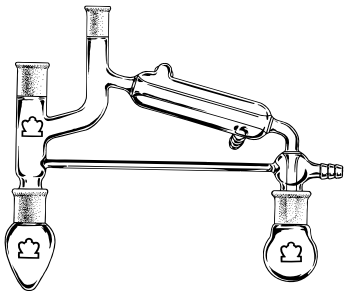


285053

Apparatus, Vacuum

Support rod adds strength to this small scale vacuum distillation apparatus. Main tube outer joint can be converted to a thermometer joint using a 273500, size 21 bushing adapter. The height of this joint is fixed in relation to the side arm to allow the use of a 50 mm immersion thermometer. ⧩ 10/18 joint on side tube accommodates a 25 mm immersion thermometer.

Kontes Article No.	⧩ Joint	Hose Connections	Approx. Overall Height (mm)	Case Qty.	Case Price
285250-0000	14/20	#1	175 x 195	1	274.04
Component Parts					
285251-0000	Distilling Head			1	242.72
294250-0010	Pear Shaped Flask, 10 mL			1	24.01
294000-0010	Receiving Flask, 10 mL			1	18.32



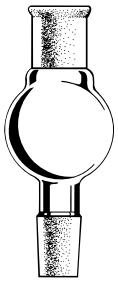
285250



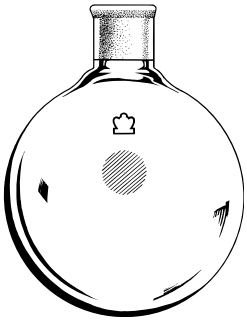
Typical Setup



276100



289080



294000



21800



21805

Bulb, Kugelrohr

With ⅋ joints on both ends to connect to other bulbs or jointed flasks. Adapter allows connection to a vacuum source.

Kontes Article No.	⅋ Joints	Bulb Dia. (mm)	Approx. Bulb Vol. (mL)	Approx. Height (mm)	Case Qty.	Case Price
289080-0031	14/20	31	10	65	1	35.23
289080-0035	14/20	35	15	70	1	36.94
289080-0041	14/20	41	25	75	1	37.84

Accessory Parts

294000-0050	⅋ 14/20 Single Neck Flask, 50 mL	1	18.32
294000-0100	⅋ 14/20 Single Neck Flask, 100 mL	1	18.32
294000-0250	⅋ 14/20 Single Neck Flask, 250 mL	1	22.01
276100-1420	⅋ 14/20 Outlet Adapter, Hose Connection #1	1	18.94

Column, Distilling, Jacketed

KIMAX one-piece sealed unit with a ⅋ outer joint at the upper end and a ⅋ inner joint at the lower end. Drip tip is provided at the lower end. **Inner tube has a single ring of indentations near the exit end to support packing material.** Supplied with a jacket so that the column may also be used as a condenser. Hose connections accept 5/16 inch I.D. flexible tubing.

Kimble Article No.	⅋ Joints	Length of Jacket (mm)	Case Qty.	Case Price
21800-1420	14/20	200	1	112.44

Column, Jacketed, Full Length ⅋ 24/40 Joints

KIMAX one-piece sealed unit with a ⅋ outer joint at the upper end and a ⅋ inner joint at the lower end. Drip tip is provided at the lower end. **Inner tube has a single ring of indentations near the exit end to support packing material.** Supplied with a jacket so the column may also be used as a condenser. Hose connections accept 5/16 inch I.D. flexible tubing. Inner tube I.D. is 13.5 mm.

Kimble Article No.	⅋ Joints	Length of Jacket (mm)	Approx. Vol. (mL)	Case Qty.	Case Price
21805-300	24/40	300	45	1	103.85

Column, Distilling / Condensing

With a ⅋ outer joint at top and a ⅋ inner drip joint at bottom. Indentations at the bottom for supporting packing material. Jacket permits the column to be used as a condenser.

Kontes Article No.	⅋ Joints	Hose Connections	Column Height (mm)	Case Qty.	Case Price
286820-0110	14/20	#1	110	1	58.98
286810-0200	19/22	#1	200	1	60.55
286810-0300	19/22	#1	300	1	68.53

Column, Plain

Plain fractionating column with 10 mm I.D. indentations to support packing. A variety of packing materials may be used for better separations.

Kontes Article No.	⅋ Joints	Column Height (mm)	Overall Height (mm)	Case Qty.	Case Price
286000-0021	14/20	130	170	1	44.49
286000-0022	14/20	250	190	1	45.93
501000-2024	24/40	200	305	1	51.16

Column, Plain

Plain fractionating column with indents to support packing. A variety of packing materials may be used for better separations.

Kontes Article No.	⅋ Joints	Column Height (mm)	Overall Height (mm)	Case Qty.	Case Price
286100-0000	14/20	120	170	1	24.26

Column, Vacuum Jacketed

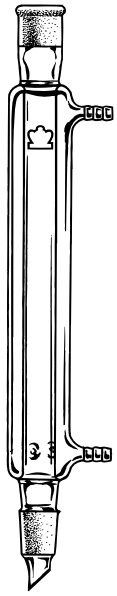
Vacuum jacketed fractionating column with 11 mm I.D. indentations to support column packing.

Kontes Article No.	⅋ Joints	Column Height (mm)	Case Qty.	Case Price
286500-0000	14/20	130	1	181.40

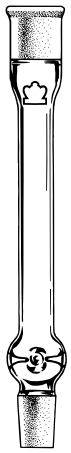
Column Packing, Beads, Solid Glass, Borosilicate

KIMAX KG-33 glass beads are highly resistant to attack by most cold or hot liquids and/or vapors. May be used as mixing beads, boiling stones, or packing for distillation columns. Beads are durable and will not disintegrate or affect delicate compounds. Packed in 1 lb.(approximately 0.45 Kg) containers, 360 cm^3 total volume.

Kimble Article No.	Approx. Dia. (mm)	Approx. Beads per cubic inch	Approx. Beads per pound	Case Qty.	Case Price
13500-3	3 ± 0.3	550	12,000	1 lb.	209.11
13500-4	4 ± 0.4	250	5,200	1	184.30
13500-5	5 ± 0.5	125	3,000	1	136.78
13500-6	6 ± 0.6	75	1,800	1	148.88



286810
286820



286000
501000



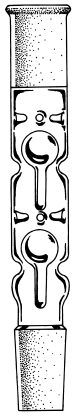
286100



286500



13500



503100



503000



21802



286700
286710
503500

Column, Snyder

Snyder distillation column with floating ball valves for improved vapor-liquid contact.

Kontes Article No.	Joints	Column x Chamber Length (mm)	Number of Chambers	Approx. Overall Height (mm)	Case Qty.	Case Price
503000-0121	24/40	225 x 50	3	305	1	90.95
503000-0122	24/40	375 x 50	6	455	1	160.06

Column, Improved Snyder

Improved design speeds evaporation and reduces hold-up within the column. Recoveries are excellent; i.e., with pesticides such as Lindane and Parathion in petroleum ether or ethyl ether. Higher boiling solvents may also be used to good advantage. Each section is approximately 50 mm long.

Kontes Article No.	Joints	Column x Chamber Length (mm)	Number of Chambers	Approx. Overall Height (mm)	Case Qty.	Case Price
503100-0002	24/40	120 x 50	2	200	1	103.19
503100-0003	24/40	170 x 50	3	250	1	111.45

Column, Vigreux

KIMAX column has a ⅋ outer joint at the upper end and a Ts inner joint at the lower end. Drip tip is provided at the lower end. Inner tube has twelve sets of rings of indentations spaced approximately 14 mm apart. Sets are alternately horizontal and slanted downward.

Kimble Article No.	Length of Jacket (mm)	Joints	Case Qty.	Case Price
21802-200	200	19/22	1	85.21

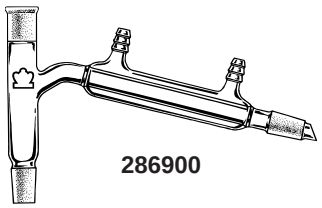
Column, Vigreux

Vigreux distilling column with indentations over the entire length for improved vapor-liquid contact.

Kontes Article No.	Joints	Column Height (mm)	Case Qty.	Case Price
286700-0000	14/20	130	1	60.02
286710-0150	19/22	150	1	69.81
286710-0300	19/22	300	1	88.08
503500-0221	24/40	150	1	66.89
503500-0222	24/40	300	1	80.91
503500-0223	24/40	600	1	138.34

Head, with Condenser, Medium Length ⅋ 14/20 Joints

Distillation head with a condenser sealed to the vertical tube. ⅋ 14/20 outer joint on the vertical tube can be converted to a thermometer joint using the 273500, size 21 bushing adapter. The height of this joint is fixed in relation to the side arm, permitting use of 25 mm immersion thermometers.

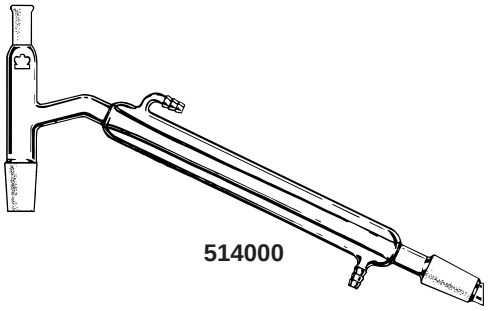


286900

Kontes Article No.	⅋ Joints	Condenser Joint	Hose Connections	Approx. Overall Height x Width (mm)	Case Qty.	Case Price
286900-0000	14/20	14/35	#1	120 x 200	1	97.23

Head, with Condenser, Full Length ⅋ Joints

Simple take-off unit with a condenser sealed to the adapter at a 75° angle. With bottom and side ⅋ inner drip joints. ⅋ 10/30 outer joint on top accepts a 75 mm immersion thermometer. Hose connections are No. 2.

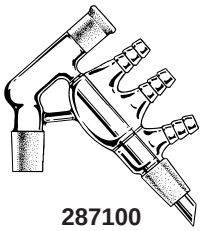


514000

Kontes Article No.	⅋ Joints	Thermometer ⅋ Joint	Jacket Length (mm)	Approx. Overall Height x Width (mm)	Case Qty.	Case Price
514000-2440	24/40	10/30	250	180 x 280	1	150.07

Head, Short Path

When a ⅋ thermometer is inserted in the top of this apparatus, the bulb and stem serve as column packing. Close-coupled condenser and vacuum connection offer an extremely short condensate travel path.



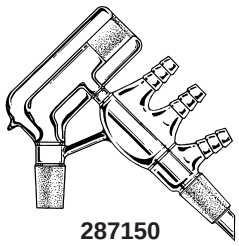
287100
287110
513750

Kontes Article No.	⅋ Joints	Thermometer ⅋ Joint	Hose Connections	Approx. Overall Height x Width (mm)	Case Qty.	Case Price
287100-0000*	14/20	10/18	#1	105 x 95	1	153.98
287110-0000	19/22	10/18	#1	108 x 98	1	198.36
513750-0000	24/40	14/20	#2	180 x 160	1	189.20
513750-2942	29/42	14/20	#2	180 x 160	1	118.80

* See 284800-0000 for a complete apparatus.

Head, Short Path, Vacuum Jacketed

Vacuum jacketed design for more efficiency. When a ⅋ thermometer is inserted in the top of this apparatus, the bulb and stem serve as column packing. The close coupled condenser and vacuum connection offer an extremely short condensate travel path.



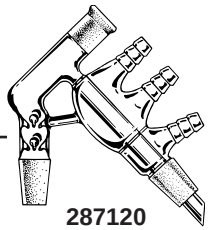
287150
513770

Kontes Article No.	⅋ Joints	Thermometer ⅋ Joint	Hose Connections	Approx. Overall Height x Width (mm)	Case Qty.	Case Price
287150-0000	14/20	10/18	#1	105 x 110	1	340.59
513770-0000	24/40	14/20	#2	180 x 175	1	386.27

Head, Short Path, Vigreux

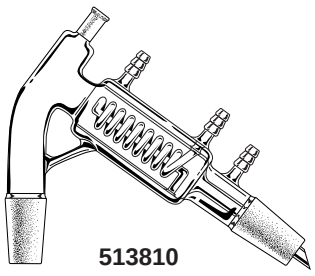
Design uses Vigreux indentations for increased surface area within the vapor path. This promotes better refluxing prior to condensation, yielding a better separation. With a ⅋ thermometer in place, the bulb and stem serve as column packing. Closely coupled condenser and vacuum connections provide a short condensate travel path.

Vigreux indents for improved vapor-liquid contact.



287120
513760

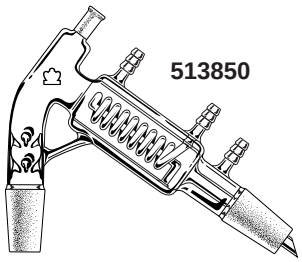
Kontes Article No.	⅋ Joints	Thermometer ⅋ Joint	Hose Connections	Approx. Overall Height x Width (mm)	Case Qty.	Case Price
287120-0000	14/20	10/18	#1	105 x 95	1	174.87
513760-0000	24/40	14/20	#2	180 x 160	1	214.02


513810

Head, Short Path, Improved

Designed with a combination cold coil and Leibig condenser. Water flows into the middle hose connection through the coil and exits the outer jacket through the top hose connection. Excellent for use when distilling medium to high boiling point solvents. Top outer joint is ⅋10/30 for use with a 51mm immersion thermometer.

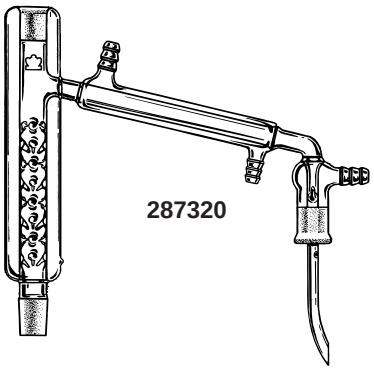
Kontes Article No.	⅋ Lower Inner Joint	Thermometer ⅋ Joint	Hose Connections	Approx. Overall Height x Width (mm)	Case Qty.	Case Price
513810-2440	24/40	10/30	#2	160 x 195	1	299.28


513850

Head, Short Path, Improved, Vigreux

Designed with a combination cold coil and Leibig condenser. Vigreux indentations improve efficiency. Water flows into the middle hose connection, through the coil and exits the outer jacket through the top hose connection. Excellent for use when distilling medium to high boiling point solvents. Top outer joint is ⅋10/30 for use with a 51mm immersion thermometer.

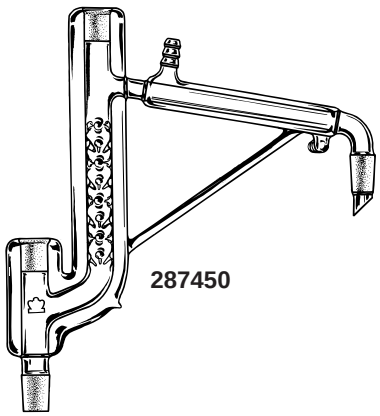
Kontes Article No.	⅋ Lower Inner Joint	Thermometer ⅋ Joint	Hose Connections	Approx. Overall Height x Width (mm)	Case Qty.	Case Price
513850-2440	24/40	10/30	#2	160 x 195	1	312.90


287320

Head, Vacuum Jacketed Vigreux, with Condenser

Distillation head with a condenser sealed to a jacketed Vigreux distilling column. ⅋ thermometer joint on the top of the vertical column. Vacuum adapter section of this apparatus takes a 287902 distribution adapter and four 287802 receiving flasks. Joints may be held with springs or ⅋ polyacetal clamps.

Kontes Article No.	⅋ Joints	Thermometer ⅋ Joint	Hose Connections	Approx. Overall Height x Width (mm)	Case Qty.	Case Price
287320-0000	14/20	10/18	#1	195 x 175	1	334.07
Accessories						
287902-0000	Distribution Adapter				1	114.51
287802-0000	Round Bottom Receiving Flask, 15 mL, (4 Required)				1	24.01
662750-0012	1/2" Springs, Pkg./10 pairs, (2 Pairs Required)				20	17.33
662750-0001	1" Springs, Pkg./10 pairs, (1 Pair Required)				20	58.24
675300-0014	Polyacetal ⅋ Clamps, Pkg./12, (Recommended Option)				12	37.72


287450

Head, Vacuum Jacketed Vigreux, with Condenser

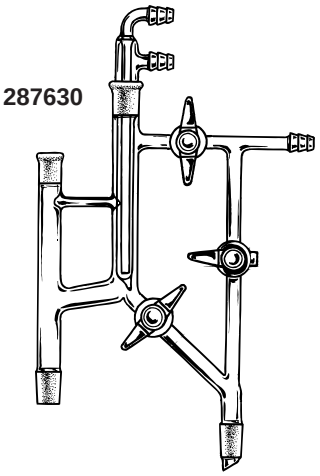
Jacketed Vigreux distillation head with two ⅋ joints for 25 mm immersion thermometers. Integral West condenser is braced for strength. Drip joint on the condenser may be connected to a variety of receivers.

Kontes Article No.	⅋ Joints	Thermometer ⅋ Joints	Hose Connections	Approx. Overall Height x Width (mm)	Case Qty.	Case Price
287450-0000	14/20	10/18	#1	220 x 195	1	369.32
Accessories						
288251-0000	Distillation Receiver				1	25.69
675300-0014	Polyacetal ⅋ Clamp, Pkg./12				12	37.72

Head, Variable Reflux with PTFE Plug

Cold finger condenser allows reflux: product ratio. ⅋ outer joint at top requires a 75 mm immersion thermometer. Distillate can be removed or receivers changed using PTFE stopcocks.

Stopcocks have PTFE plugs. The top and bottom are 821001-0002 and the middle is 822001-0002.

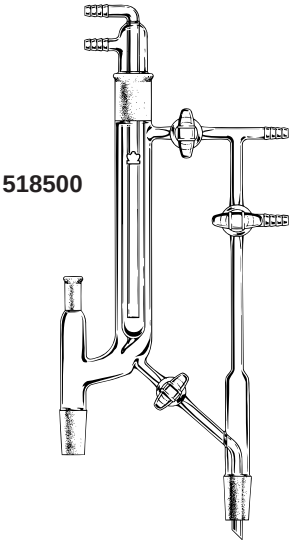


Kontes Article No.	⅋ Joints	Top Thermometer ⅋ Joint	Hose Connections	Approx. Overall Height x Width (mm)	Case Qty.	Case Price
287630-0000	14/20	10/18	#1	280 x 172	1	369.32

Kontes Article No.	Description	Case Qty.	Case Price
287631-0000	Distilling Head	1	315.80
282000-0000	Condenser	1	55.20

Head, Variable Reflux with Glass Plugs

Rotation of cold finger condenser allows collection of distillate or return to flask. Stopcocks allow removal of the product or a receiver change without interrupting the distillation. Lower receiver joint has a drip tip. The distance between column/condenser top and bottom stopcocks is 135 mm. ⅋ 10/30 outer side joint accepts a 75 mm immersion thermometer.



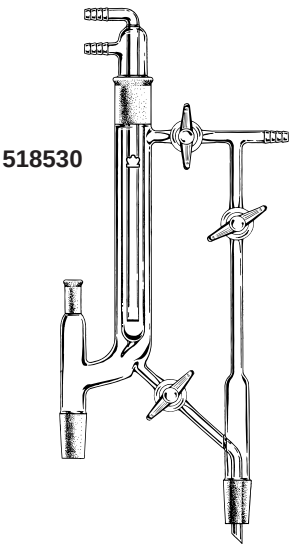
Kontes Article No.	Column ⅋ Joint	Condenser ⅋ Joints	Receiver ⅋ Joint	Hose Connections	Approx. Overall Height x Width (mm)	Case Qty.	Case Price
518500-2440	24/40	29/42	24/40	#2	420 x 200	1	576.80

Component Parts

518501-0000	Condenser	1	70.15
518502-2440	Distilling Head, ⅋ 24/40	1	511.54

Head, Variable Reflux with PTFE Plugs

Rotation of cold finger condenser allows collection of distillate or return to flask. Stopcocks allow removal of the product or a receiver change without interrupting the distillation. Lower receiver joint has a drip tip. ⅋ 10/30 outer side joint accepts a 75 mm immersion thermometer. Stopcock plugs are PTFE. Top and bottom plugs are 821001-0004 and the side is 824001-0004.



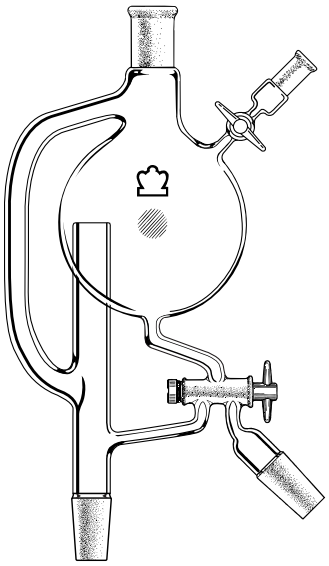
Kontes Article No.	Column ⅋ Joint	Condenser ⅋ Joints	Receiver ⅋ Joint	Hose Connections	Approx. Overall Height x Width (mm)	Case Qty.	Case Price
518530-2440	24/40	29/42	24/40	#2	420 x 200	1	576.80
518530-2942	29/42	29/42	24/40	#2	420 x 200	1	606.82

Component Parts

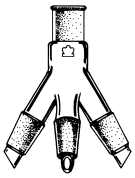
518501-0000	Condenser	1	70.15
518532-2440	Distilling Head, ⅋ 24/40	1	511.54

Hose Connector Tubing Size Chart

Hose Connector Size	Fits Flexible Tubing I.D.
1	1/4”
2	3/8”
3	1/2”
4	3/4”



518550



251175

Head, Solvent, Modified

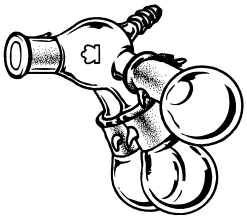
Designed to maintain distilled solvents in an inert atmosphere. The top of the main vapor tube is open with an additional vapor tube to decrease the risk of pressure buildup. The upper sampling port has a 4mm stopcock with a ⅋14/20 outer joint for the head. A double oblique stopcock allows removal of distilled solvent or return to flask.

Kontes Article No.	⅋ Take-Off Joint	⅋ Upper and Lower Joints	Capacity (mL)	Case Qty.	Case Price
518550-1425	14/20	24/40	250	1	356.43
518550-1450	14/20	24/40	500	1	387.70

Micro-Distillation Distributor Adapter

Rotating three-way distributor adapter. Precise alignment allows distillate to drip directly into the receiver with no wetted surfaces or holdup. Receiver arms are 120° apart.

Kontes Article No.	⅋ Joints	Approx. Overall Height x Width (mm)	Case Qty.	Case Price
251175-0000	14/20	95 x 75	1	98.85

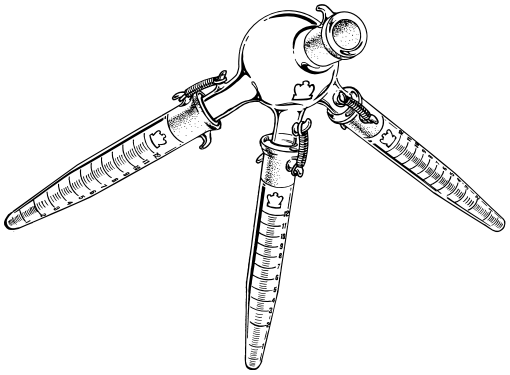


287800
535750

Receiver, Cow-Type

Cow-type design having three receivers spaced 45° apart. Condensers with drip joints will protrude into the spherical section, keeping wetted surfaces and product hold-up to a minimum.

Kontes Article No.		⅋ Joints	⅋ Joint to Condenser	Hose Connection	Case Qty.	Case Price
287800-0000		14/20	14/20	#1	1	165.71
535750-0000		24/40	24/25	#2	1	321.03
Component Parts for 287800-0000						
287801-0000	Distribution Adapter				1	98.85
287802-0000	Receiving Flask, 15 mL, (3 Supplied)				1	24.01
662750-0012	1/2" Springs (2 Pairs Supplied), Pkg./10 pairs				20	17.33
Component Parts for 535750-0000						
535751-0000	Distribution Adapter				1	224.45
535752-0000	Receiving Flask, 250 mL, (3 Supplied)				1	32.37
662750-0034	3/4" Springs (2 Pairs Supplied), Pkg./10 pairs				20	119.55
Optional Parts						
675300-0014	Polyacetal Clamp, Fits ⅋ 14/20 Joints, Pkg./12				12	37.72
675300-0024	Polyacetal Clamp, Fits ⅋ 24/40 and 24/25 Joints, Pkg./12				12	39.53



288050

Receiver, Short Path

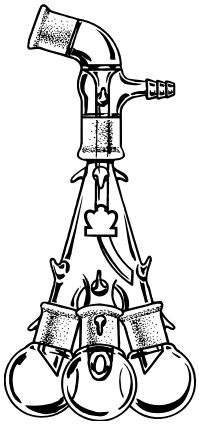
135° angle between center line of condenser and receivers enables distillate to fall directly into receivers. This receiver can be used with the 284800 short path distillation apparatus.

Kontes Article No.		⅋ Joints	Receiver Cap. (mL)	Grad x Subdiv. (mL)	Approx. Overall Height x Length (mm)	Case Qty.	Case Price
288050-0000		14/20	12	0-2 x 0.1 2-12 x 0.2	170 x 240	1	174.87
Component Parts							
288051-0000	Distribution Adapter					1	97.87
288250-0000	Graduated Receiver, (3 Supplied)					1	27.81
662750-0012	1/2" Springs (2 Pairs Supplied), Pkg./10 pairs					20	17.33
Optional Part							
675300-0014	Polyacetal Clamp, Fits ⅋ 14/20 Joints, Pkg./12					12	37.72

Receiver, Rotating, 4-Place

Rotating distillation receiver allows four flasks to be progressively filled. Vacuum adapter is bent at a 105° angle.

Kontes Article No.	Joints	Hose Connection	Flask Capacity (mL)	Approx. Overall Height x Width (mm)	Case Qty.	Case Price
287900-0000	14/20	#1	15	205 x 90	1	254.46
287910-0000	19/22	#1	25	132 x 95	1	302.76
544000-2440	24/40	#2	50	385 x 160	1	400.62
Component Parts for 287900						
287901-0000	Vacuum Adapter				1	41.50
287902-0000	Distribution Adapter				1	114.51
287802-0000	Receiving Flask, 15 mL (4 Supplied)				1	24.01
662750-0012	1/2" Springs (2 Pairs Supplied), Pkg./10 pairs				20	17.33
662750-0001	1" Springs (1 Pair Supplied), Pkg./10 pairs				20	58.24
Component Parts for 287910						
287911-0000	Vacuum Adapter				1	63.82
287912-0000	Distribution Adapter				1	142.24
287913-0000	Receiving Flask, 25 mL (4 Supplied)				1	26.49
662750-0012	1/2" Springs (2 Pairs Supplied), Pkg./10 pairs				20	17.33
662750-0001	1" Springs (1 Pair Supplied), Pkg./10 pairs				20	58.24
Component Parts for 544000						
544001-2440	Vacuum Adapter				1	80.27
536002-0000	Distribution Adapter				1	253.17
536003-0000	Receiving Flask, 50 mL, (4 Supplied)				1	33.27
662750-0114	1 1/4" Springs (1 Pair Supplied), Pkg./10 pairs				20	105.68
662750-0012	1/2" Springs (4 Pairs Supplied), Pkg./10 pairs				20	17.33
Optional Parts						
675300-0014	Polyacetal 14/20 Clamp, Pkg./12				12	37.72
675300-0019	Polyacetal 19/22 Clamp, Pkg./12				12	38.46
675300-0024	Polyacetal 24/40 Clamp, Pkg./12				12	39.53

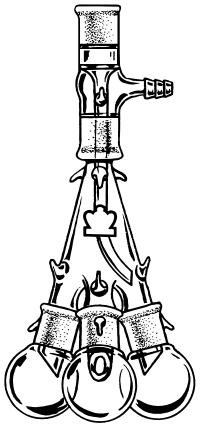


287900
287910
544000

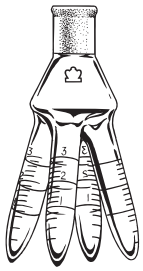
Receiver, Rotating, 4-Place

Rotating distillation receiver allows four fractions to be collected. Vacuum adapter has a vertical orientation.

Kontes Article No.	Joints	Hose Connection	Flask Capacity (mL)	Approx. Overall Height x Width (mm)	Case Qty.	Case Price
288100-0000	14/20	#1	15 mL	210 x 90	1	247.95
Component Parts						
288101-0000	Vacuum Adapter				1	42.94
287902-0000	Distribution Adapter				1	114.51
287802-0000	Receiving Flask, 15 mL, (4 Supplied)				1	24.01
662750-0012	1/2" Springs (2 Pairs Supplied), Pkg./10 pairs				20	17.33
662750-0001	1" Springs (1 Pair Supplied), Pkg./10 pairs				20	58.24
Optional Part						
675300-0014	Polyacetal 14/20 Clamps, Pkg./12				12	37.72



288100



288200

Receiver, Cow-Type

Cow-type having single ⅋ joint at the top. Four graduated lower receiver tubes are accessible via a syringe or pipet for product recovery. Receiver tubes are graduated. This receiver is a component of the 284800 distillation apparatus.

Kontes Article No.	⅋ Joint	Capacity (mL)	Grad. x Subdiv. (mL)	Case Qty.	Case Price
288200-0000	14/20	3 per Tube	0-3 x 0.2	1	128.54



288250

Receiver, Graduated Tube, with Hooks

Useful as a centrifuge or extraction tube as well as a receiver. WIth hooks for springs.

Kontes Article No.	⅋ Joint	Capacity (mL)	Grad. x Subdiv. (mL)	Approx. Overall Length (mm)	Case Qty.	Case Price
288250-0000	14/20	12	0-2 x 0.1 2-12 x 0.2	142	1	27.81
Optional Part						
675300-0014	Polyacetal ⅋ 14/20 Clamps, Pkg./12				12	37.72

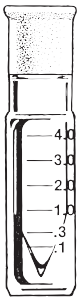


288251

Receiver, Graduated Tube

Useful as a centrifuge or extraction tube as well as a receiver. Uses ⅋ polyacetal clamps, not included.

Kontes Article No.	⅋ Joint	Capacity (mL)	Grad. x Subdiv. (mL)	Approx. Overall Length (mm)	Case Qty.	Case Price
288251-0000	14/20	12	0-2 x 0.1 2-12 x 0.2	142	1	25.69
288251-0040	14/20	40	0-10 x 0.5 10-40 x 1	145	1	32.37
Optional Part						
675300-0014	Polyacetal ⅋ 14/20 Clamps, Pkg./12				12	37.72



288260

Receiver, Graduated Vial

Useful as an extraction tube as well as a receiver. Multi-function, high-recovery vial with flat bottom for stability.

Kontes Article No.	⅋ Joint	Capacity (mL)	Graduations (mL)	Approx. Overall Length (mm)	Case Qty.	Case Price
288260-0001	14/20	4	0.1, 0.3, 1, 2, 3, 4	82	1	21.66



Safety Program - *Play it safe in the lab.*

Our Safety Program discusses the ten basic safety rules of handling glassware as well as the technical properties and physics of glass. Available as a DVD.

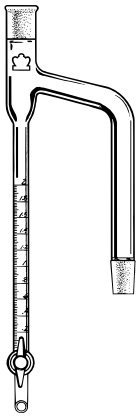
Kimble Article No.	Format	Case Qty.	Case Price
99991D-99	DVD	1	23.99

See more safety products in the *SAFETYWARE* section.

Receiver, PTFE Stopcock

Straight distillation receiver with a 821001-0002 PTFE stopcock plug.

Kontes Article No.	Joints	Graduations x Subdivisions (mL)	Approx. Overall Height x Width (mm)	Case Qty.	Case Price
288730-0000	14/20	0-2 x 0.02	245 x 75	1	135.72

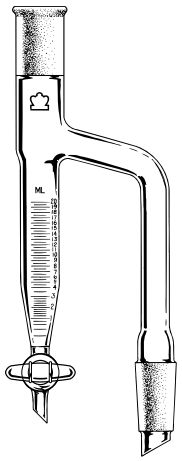


288730

Receiver, Moisture Test with Glass Plug

Barrett-type designed to determine the water content in petroleum or bituminous material. Made to ASTM specifications, with the addition of a top joint and lower stopcock. Stopcock plug is 2mm.

Kontes Article No.	Joints	Capacity (mL)	Graduations x Subdivisions (mL)	Approx. Overall Height x Width (mm)	Case Qty.	Case Price
288770-0010	14/20	10	0-10 x 0.1	190 x 65	1	141.48

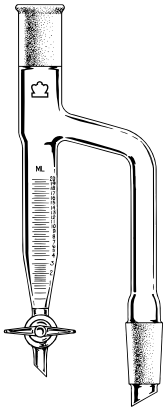


288770

Receiver, Moisture Test

Barrett-type usually used in the determination of water in petroleum or bituminous products. Supplied with an 821001-0002, 2 mm PTFE stopcock plug.

Kontes Article No.	Joints	Capacity (mL)	Graduations x Subdivisions (mL)	Approx. Overall Height x Width (mm)	Case Qty.	Case Price
288790-0002	14/20	2	0-2 x 0.02	225 x 65	1	141.48
288790-0005	14/20	5	0-5 x 0.20	205 x 65	1	148.28
288790-0010	14/20	10	0-10 x 0.1	190 x 65	1	156.45
751280-0010	24/40	10	0-10 x 0.1	245 x 95	1	155.03
751280-0020	24/40	20	0-3 x 0.2 3-20 x 0.5	250 x 95	1	164.22

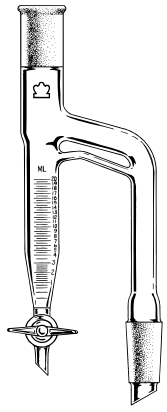


288790
751280

Receiver, Moisture Test

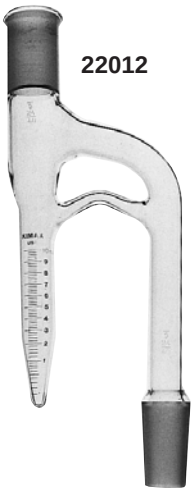
Barrett-type with an overflow tube. Usually used in the determination of water in petroleum or bituminous products. Supplied with an 821001-0002, 2 mm PTFE stopcock plug.

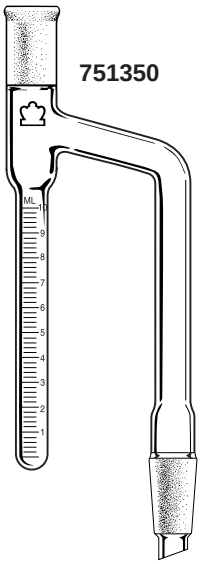
Kontes Article No.	Joints	Capacity (mL)	Graduations x Subdivisions (mL)	Approx. Overall Height x Width (mm)	Case Qty.	Case Price
751530-0010	24/40	10	0-3 x 0.2	265 x 95	1	164.22
751530-0020	24/40	20	3-20 x 0.5	265 x 95	1	173.44



751530

Hose Connector Tubing Size Chart	
Hose Connector Size	Fits Flexible Tubing I.D.
1	1/4"
2	3/8"
3	1/2"
4	3/4"


22012


751350

Receiver, Dean-Stark, Modified, Full Length ⅋ 24/40 Joints

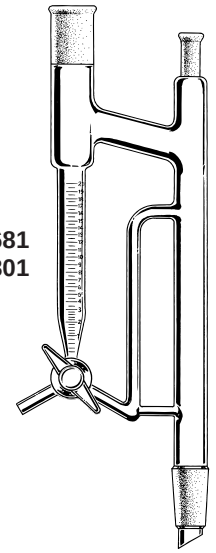
KIMAX distilling receiver with ⅋ joints and a siphon return arm. Sidearm bridge equalizes pressure. Designed from ASTM Specification E123, Style A.

Kimble Article No.	⅋ Joints	Cap. (mL)	Subdiv. (mL)	±Tol. (mL)	Approx. Overall Length (mm)	Case Qty.	Case Price
22012-10	24/40	10	0-1 in 0.1 1-10 in 0.2	0.05 0.1	237	1	147.05

Receiver, Moisture Test

Bidwell-Sterling designed for the determination of moisture in foods and organics. Made to ASTM specifications E123. Also conforms to many methods of the American Oil Chemists Society.

Kontes Article No.	⅋ Joints	Capacity (mL)	Subdiv. (mL)	Approx. Overall Height x Width (mm)	Case Qty.	Case Price
751350-0005	24/40	5	0.1	275 x 90	1	88.98
751350-0010	24/40	10	0.1	280 x 90	1	91.68


288681
535801

Receiver, Moisture Test

Dean Stark design for solvents that are either heavier or lighter than water. Unit is compact in both the ⅋ 24/40 and ⅋ 14/20 sizes. Lower three-way stopcock provides a sample port and the apparatus can be drained without disassembly. Trap area is positioned well above the boiling flask. Ideally suited for the determination of water content in organic solvents. Thermometer joint is ⅋ 10/30. Stopcock plug is 822501-0002.

Ref: Design suggested by Dr. A. J. East, Celanese Corp.

Kontes Article No.	⅋ Joints	Capacity (mL)	Graduations x Subdiv. (mL)	Approx. Overall Height x Width (mm)	Case Qty.	Case Price
288681-0000	14/20	5	0-5 x 0.2	265 x 115	1	253.17
535801-0000	24/40	20	0-3 x 0.2 3-20 x 0.5	355 x 130	1	285.10


197500
275090
275095

Trap, Foam-Type

Placed above a boiling flask to prevent foaming-type reactions from entering either the distilling column or the condenser. Particularly useful with rotary evaporators.

Kontes Article No.	Top Outer ⅋ Joint	Bottom Inner ⅋ Joint	Bulb Diameter (mm)	Approx. Overall Height (mm)	Case Qty.	Case Price
275095-0000	14/20	14/20	42	115	1	52.74
275090-0000	19/22	19/22	42	120	1	54.02
275095-2414	24/40	14/20	50	150	1	49.84
197500-2440	24/40	24/40	50	160	1	54.14
275095-2924	24/40	29/26	50	150	1	55.79
275095-2914	29/42	14/20	50	150	1	59.86
275095-2919	29/42	19/22	50	150	1	61.22
197500-2942	29/42	29/42	50	165	1	57.14


517000

Trap, Foam-Type

Foam-type designed to prevent carry-over into other components of the distillation assembly. Baffles allow vapor to continue through the column and condenser.

Kontes Article No.	⅋ Joints	Bulb Diameter (mm)	Approx. Overall Height x Width (mm)	Case Qty.	Case Price
517000-2440	24/40	65	215 x 65	1	176.93

Freeze Drying Apparatus

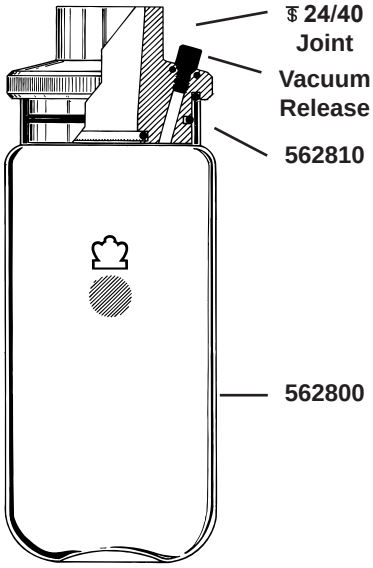
Rotary Evaporator Adapter

Polyethylene unit with a ⅋ 24/40 outer joint and a vacuum release, adapts 562800 freeze dry flasks to rotary evaporators for concentration or removal of solvent from single or multiple samples. A vacuum-tight seal is assured through the use of double FKM o-rings. A special PTFE screen is provided to prevent loss of material.

Kontes Article No.	⅋ Joint	Case Qty.	Case Price
562810-2440	24/40	1	91.67

Replacement Parts

758252-0008	Plug Seal, Size 008, Pkg./10	10	14.30
758252-0118	Screen Retainer, Size 118, Pkg./10	10	25.12
758252-0140	Rim Seal, Size 140, Pkg./10	10	65.74
758252-0226	Shaft Seal, Size 226, Pkg./5	5	46.96

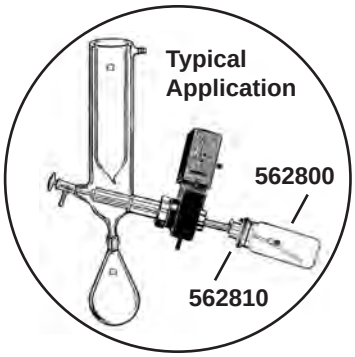


Rotary Evaporator Assembly with 562810 Adapter and 562800 Flask

Flask Only

Thick wall borosilicate glass flask has an extra wide opening for easy access to the sample. Base is formed so that the unit is free standing, requiring no special support. This flask may be used with rotary evaporators or removable vacuum hose by selecting the appropriate adapter listed below.

Kontes Article No.	Capacity (mL)	Approx. Overall Height (mm)	Approx. O.D. (mm)	Case Qty.	Case Price
562800-0250	250	105	75	1	88.14
562800-0500	500	175	75	1	94.51
562800-1000	1000	200	100	1	108.73
562800-2000	2000	280	120	1	157.77



Vacuum Adapter

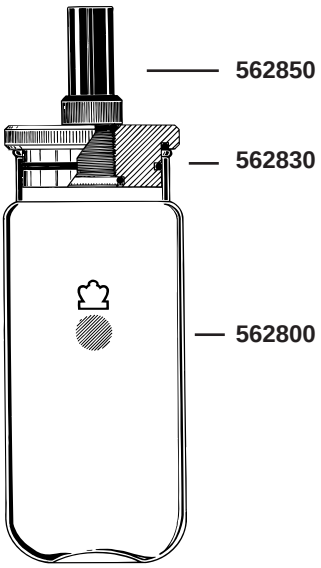
Polyethylene vacuum adapter for 562800 freeze dry flasks allows connection to a vacuum system with either 1/2" (12.7 mm) or 3/4" (19.1 mm) I.D. hose. This unit also employs the same double FKM o-ring seal and special PTFE screen found in 562810, but does not include the 562850 hose adapters listed below.

Kontes Article No.	Case Qty.	Case Price
562830-0000	1	70.35

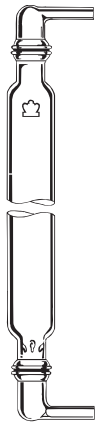
Hose Adapter

For connection to vacuum hose and a 562830 vacuum adapter. 1/2" (12.7 mm) I.D. size will fit 3/4" (19.1 mm) I.D. hose; 5/16" (7.9 mm) I.D. will accept 1/2". Supplied with a size 018 FKM o-ring.

Kontes Article No.	Adapter I.D.	Description	Case Qty.	Case Price
562850-0012	1/2"	For Hose with 3/4" I.D.	1	27.71
562850-0516	5/16"	For Hose with 1/2" I.D.	1	27.71



Vacuum Assembly

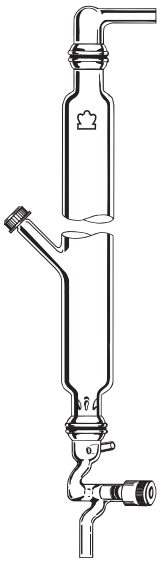


655910

Drying Tower, AIRLESS-WARE®

Desiccant may be easily added and removed from the joint on top of the column. Column can be charged with potassium hydroxide or sodium hydroxide to protect mechanical vacuum pumps from corrosive acids. Joints are size 25 o-ring connectors. Supplied with two size 124 FKM o-rings.

Kontes Article No.		Column Body O.D. x Height (mm)	Approx. Overall Height (cm)	Case Qty.	Case Price
655910-0000		54 x 845	103.5	1	147.48
Component Parts					
655911-0000	Tower Only			1	101.80
655912-0000	Adapter, Size 25 O-Ring Connector, Pkg./1, (2 Supplied)			1	30.92
Accessory Part					
675000-0035	Pinch Clamp, Size 35			1	19.36



655960

Drying Tower, Oxygen Removal, AIRLESS-WARE®

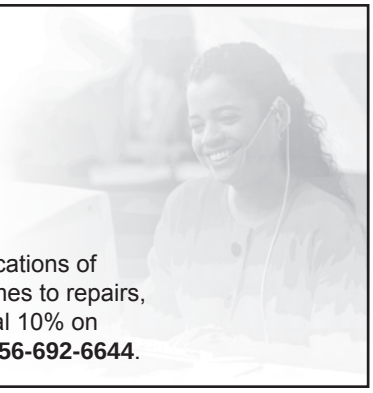
External heating cord, available as an accessory, maintains elevated operating temperatures to increase the capacity of the catalyst. Catalyst may be regenerated in the tower with a reducing stream of hydrogen at 150°C. Lower adapter allows removal of water collected after regeneration. BASF catalyst and 250°C thermometer are included. HI-VAC® valve is 0-4 mm. Replacement plug is 826501-0004. Replacement thermometer port cap is 410119-1508 and o-ring is 758252-0010. Supplied with two size 124 FKM o-rings.

Kontes Article No.		Column Body O.D. x Height (mm)	Approx. Overall Height (cm)	Case Qty.	Case Price
655960-0000		54 x 845	118.5	1	486.77
Component Parts					
655962-0000	Tower Only, with Thermometer Port, 15-415			1	105.70
655912-0000	Adapter, Size 25 O-Ring Connector			1	30.92
655961-0000	Valve Adapter, Size 25 O-Ring Connector			1	127.55
655952-0000	BASF Catalyst, Pkg./1 kg			1	220.55
870605-1260	Thermometer 250°C (not shown)			1	19.83
675310-0035	Polyacetal Clamp, Size 35, Lt. Orange, (2 Supplied)			12	62.71
Accessories					
729520-0448	Heating Cord, 8'			1	108.15
675000-0035	Pinch Clamp, Size 35			1	19.36



- **Custom Fabrications**
- **Quality Repairs**
- **Modifications of All Kinds**
- **No Order Too Small**
- **Quick Turnaround**

KONTES
custom glass shop
*call toll-free **800-682-6644***
customglass@kimble-chase.com



Contact the **Kontes Custom Glass Shop** at KIMBLE CHASE for modifications of standard products or fabrication of your unique designs. And when it comes to repairs, we can save you up to 75% of the cost of a new item. Save an additional 10% on repairs of Kontes or Kimble Brand products. Fax your requirements to **856-692-6644**.

Drying, Straight, ⅋ 14/20 Joints

Vertical-type for use with a suitable desiccant such as calcium chloride, or a molecular sieve.

Kontes Article No.	⅋ Joints	Approx. Overall Height (mm)	Case Qty.	Case Price
291000-0000	14/20	130	1	36.01



291000

Drying, Straight

Straight tube with a bulb desiccant chamber. Also useful as a molecular sieve for running anhydrous reactions. Designed for use with BEVEL-SEAL™ adapters or a rubber stopper.

Kontes Article No.	Stem O.D. (mm)	Approx. Overall Height x Width (mm)	Case Qty.	Case Price
562490-0000	8	145 x 30	1	17.07

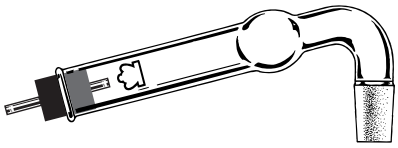


562490

Drying, Bent, ⅋ Joint

75° angle-type for use in fume hoods where a vertical-type tube will not fit. Beaded rim resists breakage. Supplied with rubber stopper and glass inlet tube.

Kontes Article No.	⅋ Joint	Rubber Stopper Size	Approx. Overall Height x Width (mm)	Case Qty.	Case Price
291100-0000	14/20	#00	65 x 105	1	28.57
291100-0019	19/22	#00	65 x 105	1	31.43

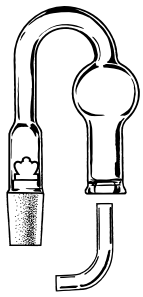


291100

Drying, U-Shaped, Medium Length ⅋ Joint

"U" shaped and supplied with a bent inlet tube.

Kontes Article No.	⅋ Joint	Approx. Overall Height x Width (mm)	Case Qty.	Case Price
291200-0000	14/20	90 x 55	1	30.42
291210-0000	19/22	120 x 80	1	32.23

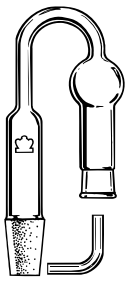


291200
291210

Drying, U-Shaped, Full Length ⅋ Joint

Inner joint at the bottom with a bulb desiccant chamber. Unit is supplied with a vent tube as illustrated.

Kontes Article No.	⅋ Joint	Approx. Overall Height x Width (mm)	Case Qty.	Case Price
562500-2440	24/40	185 x 80	1	39.15

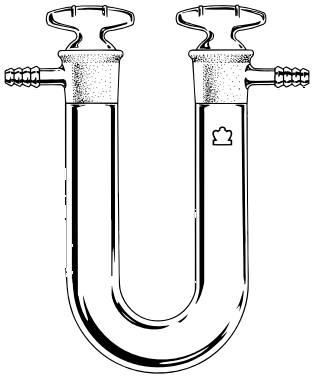


562500

Drying, U-Shaped

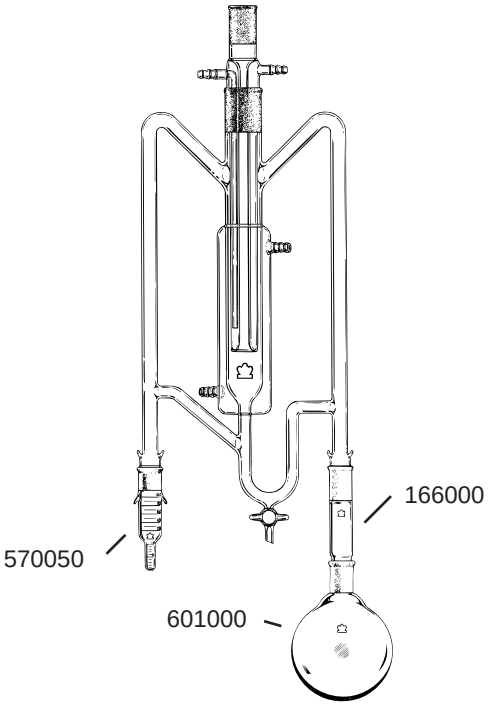
Schwartz-type absorption tube with hollow, medium length, ⅋ stoppers. Each stopper hole aligns with a side hose connector for on/off action.

Kontes Article No.	⅋ Joints	Tube O.D. (mm)	Hose Connections	Approx. Overall Height x Width (mm)	Case Qty.	Case Price
891000-1420	14/20	17	#1	168 x 133	1	151.09



891000

Hose Connector Tubing Size Chart	
Hose Connector Size	Fits Flexible Tubing I.D.
1	1/4"
2	3/8"
3	1/2"
4	3/4"



523010

Apparatus, Extraction / Distillation

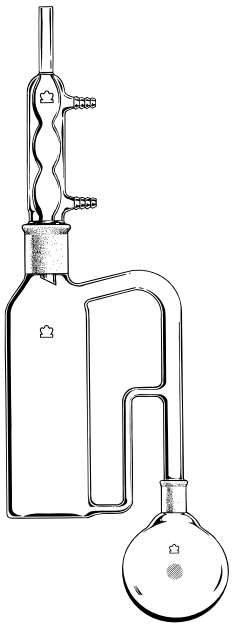
Unit allows simultaneous condensation of a steam distillate and an immiscible extracting solvent. PTFE stopcock plug is 821001. The design offers several advantages:

Larger interface at the condenser surface for extraction into the solvent phase.

Fresh solvent is continually supplied for the extraction so that accumulation of solutes is possible.

Solutes occuring in parts-per-billion quantities are concentrated 32,000 times in a single operation.

Kontes Article No.	Bottom and Top ⅌ Joints	Middle ⅌ Joint	Approx. Overall Height x Width (mm)	Case Qty.	Case Price
523010-0000	24/40	34/45	610 x 230	1	631.97
Component Parts					
523011-0000	Condenser			1	231.24
523012-0000	Extractor			1	444.09
Accessories					
166000-7524	Adapter, 24/40			1	36.01
601000-0624	Flask, 500 mL, 24/40			1	26.22
601000-0724	Flask, 1000 mL, 24/40			1	32.50
570050-1026	Concentrator Tube, 10 mL, 24/25			1	41.79
570050-1526	Concentrator Tube, 15 mL, 24/25			1	45.09



584190

Apparatus, Continuous Liquid/Liquid, Heavier Than Water

Extractor body designed for EPA priority pollutant samples where the extracting solvent is heavier than water. This technique is sometimes preferred to the separatory funnel. Designed for samples of one liter plus approximately 200 mL of extracting solvent. Several units may be set up using minimal bench space.

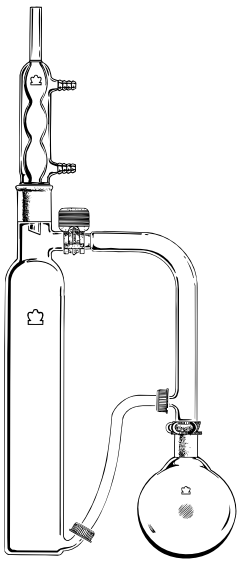
Extractor body has a ⅌ 45/50 top joint and a ⅌ 24/40 side joint. Condenser has a ⅌ 45/50 joint. Flask has a ⅌ 24/40 joint.

Kontes Article No.	Capacity (mL)	Condenser Jacket Length (mm)	Approx. Overall Height x Width (mm)	Case Qty.	Case Price
584190-0000	1000	260	785 x 235	1	303.50
Component Parts					
456000-0022	Condenser, ⅌ 45/50, 260 mm Jacket			1	120.21
601000-0724	Flask, ⅌ 24/40, 1000 mL			1	32.50
584191-0000	Extractor Body, ⅌ 45/50 Top, ⅌ 24/40 Side, 100 mm O.D.			1	180.00

Apparatus, Continuous Liquid/Liquid, Heavier Than Water, BEVEL-SEAL®

Extractor designed for EPA priority pollutant samples where the extracting solvent is heavier than water. *A unique feature of this unit is the removable sidearm and return tube designed for easy cleaning.* Taller overall height allows longer solvent residence time, increasing efficiency. Return tube can be modified by adding accessory PTFE stopcock to stop the flow when the extraction is complete.

Kontes Article No.	Description	Approx. Overall Height x Width (mm)	Case Qty.	Case Price
584360-0500	Complete 500 mL Extractor with Clamps	806 x 311	1	425.68
Component Parts for 584360-0500				
584361-0500	500 mL Body Complete (Includes body, tubing/fittings package and sidearm)		1	286.42
584362-0500	500 mL Body Only		1	180.00
584654-0000	PTFE Tubing/Fittings Package		1	33.76
584364-0300	Sidearm, BEVEL-SEAL, 300 mm, $ 35/25 Top, $ 24/40 Bottom		1	76.85
601000-0424	Flask, 250mL, $ 24/40		1	25.21
456000-0022	Condenser, $ 45/50		1	120.21
Component Parts for 584360-1000				
584654-0000	PTFE Tubing/Fittings Package		1	33.76
584364-0300	Sidearm, BEVEL-SEAL, 300 mm, $ 35/25 Top, $ 24/40 Bottom		1	76.85
601000-0624	Flask, 500mL, $ 24/40		1	26.22
456000-0022	Condenser, $ 45/50		1	120.21
Accessories				
179740-0808	Stopcock, BEVEL-SEAL, 4 mm		1	105.17
456250-0022	Condenser, Friedrich High Efficiency		1	160.28



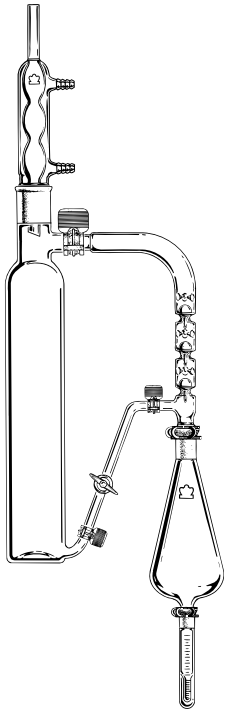
584360

Apparatus, Continuous Liquid/Liquid, with Built-In SLOW-DRY® Concentrator

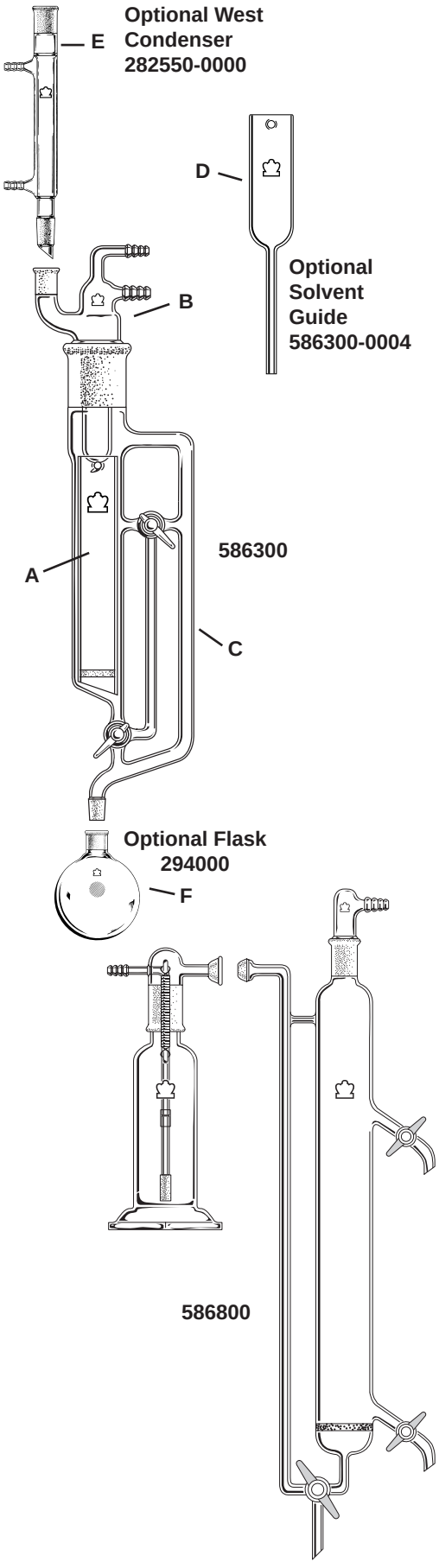
Extractor designed for EPA priority pollutant samples where the extracting solvent is heavier than water. Both extraction and concentration are performed with the same apparatus. Close the PTFE stopcock to stop flow when extraction is complete and concentration commences. *A unique feature of this unit is the removable Snyder column sidearm and return tube designed for easy cleaning*. Taller overall height allows longer solvent residence time, increasing efficiency. Return tube has 821001 plug.

Ball and Socket Heavier than Water

Kontes Article No.	Description	Approx. Overall Height x Width (mm)	Case Qty.	Case Price
584400-0000	Complete Extractor with Clamps	981 X 298	1	696.34
Component Parts				
584401-0000	Body Complete (Body, Return Arm, Sidearm and 3 Polyacetal Clamps)		1	451.98
584402-0000	Body Only, 80 mm O.D.		1	198.40
584403-0000	Return Arm,$ 18/9 Ball Joint		1	121.21
584404-0000	Sidearm,Snyder, $ 35/25 Top, $ 18/9 Side, $ 24/40 Bottom		1	128.09
456000-0022	Condenser, $ 45/50		1	120.21
570037-0500	Flask, 500mL, $ 24/40 Top, $ 19/22 Bottom		1	66.48
570071-1525	Concentrator Tube, 15 mL, $ 19/22, SLOW-DRY		1	52.26
Accessories				
456250-0022	Condenser, Friedrich High Efficiency		1	160.28
584780-2440	Inline Drying Adapter, $ 24/40		1	78.51



584400



Apparatus, Combination Solid/Liquid - Liquid/Liquid

The unique design of this extractor is based on continuous solvent displacement. As a solid/liquid extractor, a thimble is used and the sample is immersed in extracting solvent at all times to maximize efficiency.

As a liquid/liquid extractor, with heavier-than extracting solvents, the thimble is removed and the three-way stopcocks are configured for bottom take-off. With lighter-than solvents, a solvent guide is added and the three-way stopcocks are configured for sidearm take-off.

Supplied complete with extractor body, primary condenser and extraction thimble. Flask, solvent guide and secondary condenser are optional.

Designed at Argonne National Labs by Joseph Gregar & Ken Anderson, PHD.

Kontes Article No.	Description	Case Qty.	Case Price
586300-0000	Extraction Apparatus, Complete, ⓉS 14/20, ⓉS 45/50	1	374.45
Component Parts			
586300-0001	(A) Thimble Only	1	57.17
586300-0002	(B) Condenser Only, ⓉS 45/50	1	88.36
586300-0003	(C) Body Only	1	258.83
Optional Parts			
586300-0004	(D) Solvent Guide	1	25.12
282550-0000	(E) West Condenser, ⓉS 14/20	1	66.89
294000-0250	(F) Flask, 250mL, ⓉS 14/20	1	22.01

Apparatus, Sublation

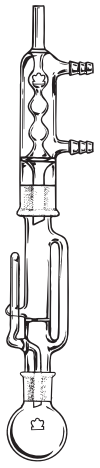
Designed for the isolation of surfactants from dilute aqueous solutions. The operation is described in (Standard Methods for the Examination of Water and Wastwater, 18th edition, Method 5540B).

Kontes Article No.	Description	Case Qty.	Case Price
586800-0000	Sublation Apparatus	1	472.98
Component Parts			
586801-0000	Sublator w/Coarse Frit	1	327.16
586802-0000	Dispersion Tube, ⓉS 29/42, Ⓢ 18/9, EC	1	102.16
183000-2440	Adapter, Gas Outlet, ⓉS 24/40	1	22.98
657002-0125	Gas Wash Bottle, 125 mL	1	47.30
662750-0002	2" Springs, Pkg/10pr. (1pr. supplied)	20	86.84
Accessory Part			
675310-0019	Polyacetal Ⓢ Clamp, Lt. Blue, Fits Joint Sizes 18/7, 18/9 (pkg.12)	12	42.47

Apparatus, Soxhlet, Micro

Soxhlet-type extraction apparatus for use with 292100 extraction thimble which has a coarse (C) porosity.

Kontes Article No.	Condenser Joint	Flask Joint	Flask Cap. (mL)	Hose Connections	Approx. Overall Height (mm)	Case Qty.	Case Price
292010-0000	19/22	14/20	25	#1	340	1	193.14
Component Parts							
283250-0000	Reflux Condenser					1	66.24
292011-0000	Extractor Body					1	133.93
294000-0025	Round Bottom Flask, 25 mL					1	18.32
Accessory							
292100-0000	Thimble, Coarse					1	35.09



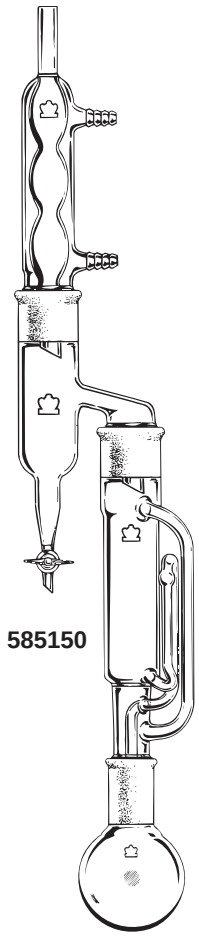
292010

Apparatus, Soxhlet / Dean-Stark

This apparatus combines two analytical techniques, Soxhlet extraction and Dean-Stark azeotropic distillation into a single process for the removal of both water and CDDs/CDFs from wet particulate samples. Determination of both water and CDDs/CDFs on the same sample aliquot is achieved without the need for desiccation prior to Soxhlet extraction. Loss of analytes and sample contamination are avoided. Uses a 586500-0000 fritted glass extraction thimble (not supplied). Stopcock plug is 821001.

Kontes Article No.	Description	Case Qty.	Case Price
585150-0023	Complete	1	550.51
Component Parts			
585151-0035	Dean/Stark Receiver, 55/50 Top and Side, 35 mL	1	202.33
456000-0023	Condenser, 55/50	1	139.27
586000-0023	Extractor, 55/50 Top and 24/40 Bottom	1	173.44
601000-0624	Flask, 24/40, 500 mL	1	26.22
Accessories			
586500-0233	Glass Thimble	1	57.01

CDD - Chlorinated Dibenzo-P-Dioxins
CDF - Chlorinated Dibenzo Furans



585150



586500





26850



24005

Soxhlet, Full Length Ⓢ Joints

Approximate capacities are measured to the base of the flask neck. Ⓢ joint sizes between Soxhlet tube and condenser are listed under 24027 or 24071 below. Ⓢ joint between the Soxhlet tube and flask is 24/40. Recommended thimble size is listed under 24071. Hose connections on condenser accept 5/16 inch I.D. flexible tubing.

Kimble Article No.	Cap. of Flask (mL)	Approx. Overall Height (mm)	Cap. of Tube to Top of Siphon (mL)	Approx. I.D. of Extraction Tube (mm)	Approx. Height of Siphon Tube (mm)	Case Qty.	Case Price
24005-30	125	565	43	30	73	1	279.10
24005-40	250	660	76	40	73	1	299.44
24005-50	500	720	185	50	113	1	336.73

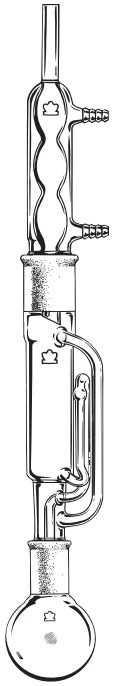
Component Parts

24027-30	Extraction Condenser Only, Ⓢ34/45, 30 mm	118.71
24027-40	Extraction Condenser Only, Ⓢ34/45, 40 mm	131.66
24027-50	Extraction Condenser Only, Ⓢ34/45, 50 mm	155.63
24071-30	Extraction Tube Only, Ⓢ34/45, Ⓢ24/40, 30 mm	144.46
24071-40	Extraction Tube Only, Ⓢ34/45, Ⓢ24/40, 40 mm	173.94
24071-50	Extraction Tube Only, Ⓢ34/45, Ⓢ24/40, 50 mm	195.96
25055-125	Flask, 125 mL, Ⓢ24/40	273.36
25055-250	Flask, 250 mL, Ⓢ24/40	270.60
25055-500	Flask, 500 mL, Ⓢ24/40	301.32

Flask, Pickel

KIMAX flask with three indentations that are evenly spaced to the center cap or thimble. Diameter at the top is closely controlled to insure a fit with metal condensers available from laboratory supply dealers.

Kimble Article No.	Approx. Height (mm)	Body O.D. (mm)	Case Qty.	Case Price
26850-99	133	45	6	127.80



585050

Apparatus, Soxhlet, Round Bottom Flask

Soxhlet-type extraction apparatus with a bulb-type Allihn condenser, used for the continuous extraction of solids with a suitable solvent. Improved design with a protected siphon tube, an enlarged vapor tube and sloping seals to prevent the trapping of liquid. Ⓢ joints connect the condenser to the extractor and the extractor to the flask. Uses paper, alundum or 586500 fritted glass extraction thimbles (not supplied).

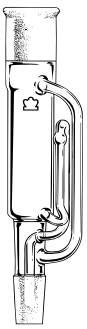
Kontes Article No.	Use with Thimble Size	Body I.D. x Length (mm)	Flask Cap. (mL)	Flask Ⓢ Joint	Condenser Ⓢ Joint	Approx. Overall Height (mm)	Hose Connection Size	Case Qty.	Case Price
585050-0022	0022/0222	41 x 157	500	24/40	45/50	680	#2	1	310.07
585050-0023	0023/0233	49 x 180	500	24/40	55/50	785	#2	1	350.81

Component Parts for 585050-0022

456000-0022	Condenser, Ⓢ 45/50	1	120.21
586000-0022	Extractor, Ⓢ 45/50 Top, Ⓢ 24/40 Bottom	1	156.35
601000-0624	Flask, R.B., 500 mL, Ⓢ 24/40	1	26.22

Component Parts for 585050-0023

456000-0023	Condenser, Ⓢ 55/50	1	139.27
586000-0023	Extractor, Ⓢ 55/50 Top, Ⓢ 24/40 Bottom	1	173.44
601000-0624	Flask, R.B., 500 mL, Ⓢ 24/40	1	26.22



586000

Body, Soxhlet

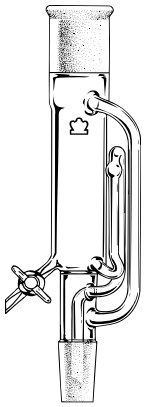
Extractor body only, used as component part of 585000, 585050 and 585250 Soxhlet extraction assemblies.

Kontes Article No.	Use with Thimble Size	Body I.D. x Length (mm)	Top Ⓢ Joint	Bottom Ⓢ Joint	Approx. Overall Height (mm)	Case Qty.	Case Price
586000-0021	0021/0211	31 x 135	34/45	24/40	270	1	127.11
586000-0022	0022/0222	41 x 157	45/50	24/40	300	1	156.35
586000-0023	0023/0233	49 x 180	55/50	24/40	340	1	173.44
586000-0024	0024/0244	70 x 240	71/60	29/42	415	1	295.61
586000-0025	0025/0255	105 x 300	103/60	29/42	475	1	545.25

Body, Soxhlet, with PTFE Stopcock

Extractor with PTFE stopcock outlet for periodic solvent removal. Stopcock has an 821001 PTFE plug.

Kontes Article No.	Use with Thimble Size	Body I.D. x Length (mm)	Top ⅌ Joint	Bottom ⅌ Joint	Approx. Overall Height (mm)	⅌ Stopcock Size Bore (mm)	Case Qty.	Case Price
586280-0021	0021/0211	31 x 135	34/45	24/40	270	2	1	214.15
586280-0022	0022/0222	41 x 157	45/50	24/40	300	2	1	243.07
586280-0023	0023/0233	49 x 180	55/50	24/40	340	2	1	253.58
586280-0024	0024/0244	70 x 240	71/60	29/42	415	4	1	352.10



586280

Thimble, All-Glass

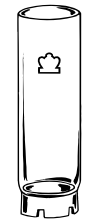
All-glass construction allows visual examination during the extraction and subsequent weighing. Unit has either a coarse or an extra-coarse glass fritted disc sealed in. 292100 for use in 292010 extraction apparatus. Other thimbles for extractor bodies 586000 and 586100.

Coarse Porosity

Kontes Article No.	Body O.D. (mm)	Disc Dia.(mm)	Approx. Height Above Frit (mm)	Approx. Overall Height (mm)	Approx. Capacity (mL)	Case Qty.	Case Price
292100-0000	11	9	40	55	2.5	1	35.09
586500-0211	25	20	70	85	25	1	46.52
586500-0222	35	30	75	90	55	1	49.26
586500-0233	45	40	115	130	150	1	57.01
586500-0244	57	50	135	150	275	1	72.60
586500-0255	90	80	150	230	850	1	352.10
586500-0266	125	112	260	300	2800	1	475.62

Extra Coarse Porosity

Kontes Article No.	Body O.D. (mm)	Disc Dia.(mm)	Approx. Height Above Frit (mm)	Approx. Overall Height (mm)	Approx. Capacity (mL)	Case Qty.	Case Price
586500-0021	25	20	70	85	25	1	43.61
586500-0022	35	30	75	90	55	1	46.52
586500-0023	45	40	115	130	150	1	60.69
586500-0024	57	50	135	150	275	1	72.60
586500-0025	90	80	150	230	850	1	352.10
586500-0026	125	112	260	300	2800	1	475.62



292100
586500

Heating Mantles with Replaceable Elements

These lower profile heating mantles for round and flat bottom boiling flasks allow the user to replace an individual heating element on site, thus eliminating costly downtime due to element failure. The element also acts as a spill containment chamber, reducing damage to other parts of the mantle. All necessary support rods and clamps are included. Percentage timer or proportional voltage power controllers are available. The percentage-timer version pulses full line voltage to each heating position according to the dial setting. The proportional voltage version supplies a constant steady-state voltage to each position. The 6-place mantles require two 3-place controls (4-1/2" x 8-1/4" x 4-1/4" each). Each 3-place unit is equipped with one 6" connected cord to mantle and one 4" power cord with grounding plug.

Heating Mantles

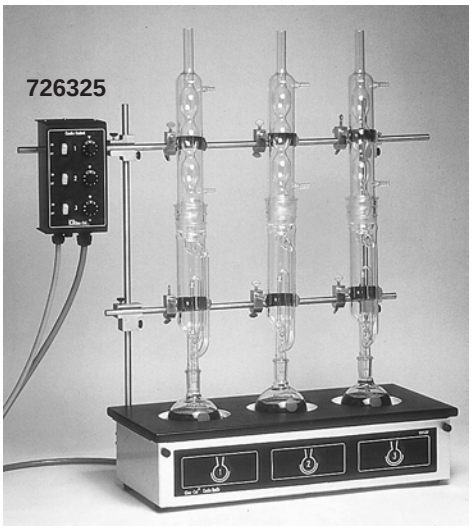
Kontes Article No.	Flask Cap. (mL) and Shape	Rating per Position	No. Pos.	Case Qty.	Case Price
726123-4051	500, RB	180W, 115V	3	1	1,119.08

Power Controllers

Kontes Article No.	Type	Voltage	No. Pos.	Case Qty.	Case Price
726325-0301	Proportional	115	3	1	455.06

Replacement Elements

Kontes Article No.	Flask Cap. (mL) and Shape	Rating	Case Qty.	Case Price
726170-4051	500, RB	180W, 115V	1	144.19



726325

726123
Extraction Glassware not included.



726170



971000-1090



971000-3047

SPE Disk Glassware and Manifolds

All SPE Manifolds are supplied with three-way valves that allow the venting to atmosphere of each station without affecting the vacuum in the rest of the system.

SPE Manifolds are manufactured from corrosion resistant stainless steel. Valves have stainless steel bodies with PTFE plugs.

The SPE Funnels have a sharp edge on the bottom inside diameter that, combined with the stronger spring in our aluminum clamps, minimizes any horizontal capillary action of the sample and solvent into the disk.

Extracted samples can be collected directly into K-D concentrator tubes, EPA water analysis vials, sample vials and test tubes.

PTFE-coated stainless steel support screen reduces the possibility of sample-to-sample cross contamination compared to the traditional glass frit. The PTFE coating also protects the support screen from corrosion caused by acid preserved samples.

The SPE Support Bases have a specially designed internal surface that reduces dead volume and minimizes holdback of the extracted analyte.

Get the most out of using 3M Empore™ Extraction Disks with our line of SPE Glassware and Manifolds.

They have been specially designed for use with solid phase extraction disks to give you the highest possible recoveries of extracted analytes from your drinking water, surface water and waste water samples. Using Kontes Brand SPE Glassware with 3M Empore extraction disks saves you time, saves you money and helps save our environment.

3M Empore™ is a trademark of 3M Company.

Kontes Article No.	Complete Description	Case Qty.	Case Price
971000-1047	SPE Manifold Set, 47 mm, 1-place (one 47 mm Glassware Set and one 1-place Manifold)	1 set	950.85
971000-3047	SPE Manifold Set, 47 mm, 3-place (three 47 mm Glassware Sets and one 3-place Manifold)	1 set	1,931.52
971000-6047	SPE Manifold Set, 47 mm, 6-place (six 47 mm Glassware Sets and one 6-place Manifold)	1 set	3,688.24
Replacement Components			
971100-0047	SPE Glassware Set, 47 mm (Funnel, Support Base, Support Screen, PTFE Gaskets & Clamp)	1	321.22
971100-0090	SPE Glassware Set, 90 mm (Funnel, Support Base, Support Screen, & Clamp)	1	579.88
971101-0347	SPE Funnel, 47 mm, 300 mL capacity	1	82.79
971101-1090	SPE Funnel, 90 mm, 1000 mL capacity	1	162.03
971102-0047	SPE Support Base, 47 mm	1	140.36
971102-0090	SPE Support Base, 90 mm	1	267.21
971103-0047	SPE Support Screen, 47 mm, PTFE-coated S.S.	1	138.57
971103-0090	SPE Support Screen, 90 mm, PTFE-coated S.S.	1	281.41
953753-0000	Anodized Aluminum Clamp, 47 mm	1	65.38
953753-0090	Anodized Aluminum Clamp, 90 mm	1	99.50
953811-0000	PTFE Gasket, 47 mm, 25/package (5 included with Glassware Set)	25	52.59
971200-0002	Valve Plug	1	52.41
971200-1000	SPE Stainless Steel Manifold, 1-place	1	628.20
971200-3000	SPE Stainless Steel Manifold, 3-place	1	965.04
971200-6000	SPE Stainless Steel Manifold, 6-place	1	1,755.27
Accessories			
971101-1047	SPE Funnel, 47 mm, 1000 mL capacity	1	112.28
971103-4247	SPE Support Screen, 47 mm, PCTFE	1	217.44
971103-4290	SPE Support Screen, 90 mm, PCTFE	1	434.92
676001-4035	PTFE Joint Sleeves, for ⓢ 40/35 joint, 6/package	6	75.07
953830-0000	Glass Cap for ⓢ 40/35 inner joint of Manifolds	1	29.98
923910-0115	Diaphragm Vacuum Pump, 110/115 VAC, 50/60 Hz	1	546.79

Recommended Procedures for Maximum Filter Life of Fritted Ware

New Filters - Wash new filters using suction with hot hydrochloric acid, followed by a water rinse.

Pressure Limits - The maximum safe differential pressure on a disc is 15 pounds per square inch.

Thermal Shock - Fritted ware has less resistance to thermal shock than non-porous glassware, hence excessive rapid temperature changes and direct exposure to a flame should be avoided. Heating in a furnace to 500°C may be done safely, provided the heating and cooling are gradual.

Dry ware may be put into a furnace that is set at 150°C, but attainment of a constant weight is usually done at 105°-110°C.

Cleaning of Used Filters

In many cases, precipitates can be removed by rinsing with water from the underside, with the pressure not exceeding 15 pounds per square inch. The suggestions that follow will be helpful in dealing with material that cannot be removed by the reverse water-wash.

Precipitate	Removal Agent
Albumen	Hot ammonia or hydrochloric acid.
Aluminous and siliceous residues	2% hydrofluoric acid followed by concentrated sulfuric acid. Rinse immediately with water until no trace of acid can be detected.
Copper or iron oxides	Hot hydrochloric acid plus potassium chlorate.
Glucose	Hot mixed acid (H_2SO_4 + HNO_3)
Fatty materials	Carbon tetrachloride
Mercuric sulfide	Hot agua regia
Mercury	Hot nitric acid
Organic Matter	Hot concentrated cleaning solution, or hot concentrated sulfuric acid with a few drops of sodium nitrite. (Bichromate cleaning solutions tend to permanently strain fritted ware which is undesirable for biochemical or pharmaceutical work.)
Silver chloride	Ammonium or sodium hyposulfite.

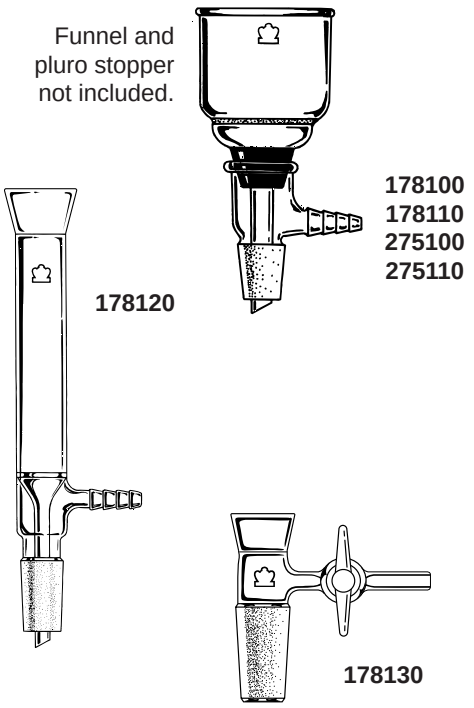
The use of strong alkalies, strong hydrofluoric acid and phosphoric acid should be avoided. Also, scratching of the surfaces will weaken the discs.

Porosities

The available porosities and principal uses are shown in the table below.

Porosity **Grade**	Desig-**nation**	Pore Size **Microns**	ISO 4793 New Identi-**fication**	Porosity **Scale**	**Principal Uses**
Extra Coarse	EC	170-220	P250	0	Coarse filtration. Gas dispersion, washing, absorption.
Coarse	C	40-60	P100	2	Coarse filtration. Gas dispersion washing, absorption. Membrane support.
Medium	M	10-15	P16	4	Filtration and extraction.
Fine	F	4-5.5	—	—	Filtration and extraction.

Pore sizes are determined by the method specified in ASTM E128, “Maximum Pore Diameter and Permeability of Rigid Porous Filters for Laboratory Use.”



Adapter, Vacuum

For reduced pressure distillation using a suitable glass vessel with an ℔ joint. Top designed for a pluro stopper. Funnel is not included.

Kontes Article No.	℔ Joint	Hose Connection	Fits Pluro Stopper	Fits Funnel Sizes (mL)	Case Qty.	Case Price
275100-0000	14/20	#1	#1	2-30	1	37.84
275110-0000	19/22	#1	#1	2-30	1	42.66
178100-2425	24/25	#2	#3	2-150	1	53.25
178110-2440	24/40	#2	#5 or #6	350-3000	1	54.02
178110-2942	29/42	#2	#5 or #6	350-3000	1	66.24

Adapter, Vacuum

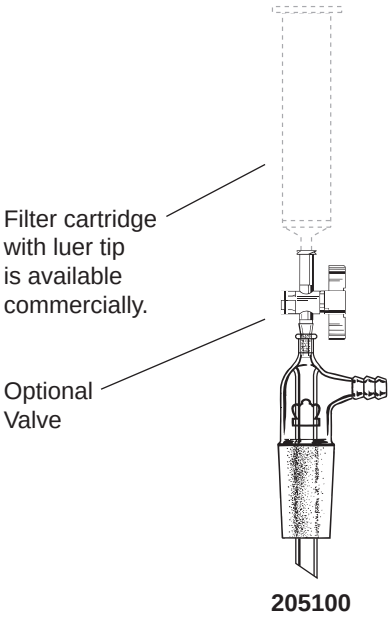
For reduced pressure filtration with plain stem buchner funnels. Top designed for a pluro stopper. Pluro stopper not supplied.

Kontes Article No.	℔ Joints	Flange I.D. (mm)	Hose Connection	Fits Pluro Stopper	Overall Height (mm)	Case Qty.	Case Price
178120-0014	14/20	23	#1	#2	110	1	48.09
178120-0024	24/40	31	#2	#3	220	1	58.70
178120-0124	24/40	38	#2	#4	230	1	58.70
178120-0029	29/42	31	#2	#3	220	1	66.83
178120-0129	29/42	38	#2	#4	230	1	66.83

Adapter, Vacuum with PTFE Stopcock

For reduced pressure filtration using plain stem buchner funnels. Stopcock permits control of vacuum source. Top designed for a pluro-stopper. Pluro stopper not included. Plug is 821001.

Kontes Article No.	℔ Joints	Fits Pluro Stopper	Accepts Up to Buchner Funnel Cap. (mL)	Case Qty.	Case Price
178130-1420	14/20	#2	30	1	78.68
178130-2440	24/40	#2	60	1	88.69
178130-2942	29/42	#3	150	1	91.18



Filtration, Vacuum, Luer

Use this adapter with disposable syringe cartridges for easy sample concentration and to eliminate the cleaning of glass frits and funnels. It also helps to reduce cross-contamination. Features top luer joint and integral vacuum connection.

Kontes Article No.	℔ Joint	Hose Connection	Approx. Overall Height (mm)	Case Qty.	Case Price
205100-1420	14/20	#1	75	1	52.77
205100-2440	24/40	#1	95	1	55.23

Optional Valves

420163-0000	Polycarbonate Body / HDPE plug	50	98.78
420163-1500	Nylon Body / HDPE plug	5	23.45
420163-4500	Nylon Body / HDPE plug	50	198.36



Stopper, Pluro, Set of Seven

This autoclavable neoprene rubber adapter set consists of seven cones designed to fit buchner and fritted glass funnels. Can be used singly, or nested with adjacent sizes. Eliminates boring of special size holes in rubber stoppers and difficulties of insertion and removal.

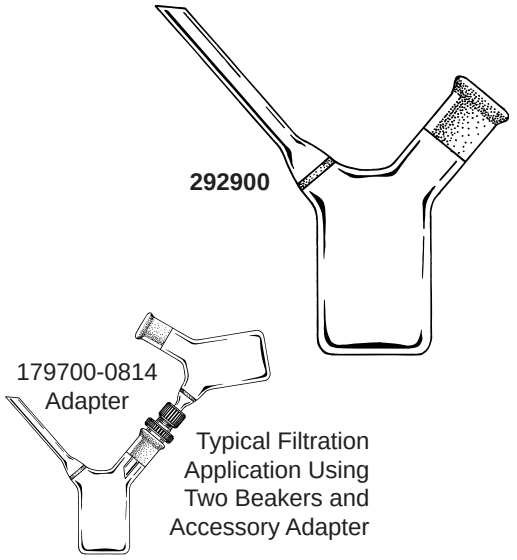
Size	O.D. Top & Bottom (mm)	I.D. Top & Bottom (mm)	Height (mm)	Wall (mm)
1	21x11	17x7	21	2
2	27x16	22x11	21	2.5
3	37x22	31x16	25	3
4	46x29	39x22	29	3.5
5	58x38	50x30	35	4
6	69x45	60x36	40	4.5
7	86x57	75x46	45	5.5

Kontes Article No.	Description	Case Qty.	Case Price
852050-0070	Set of Seven	7	27.03

Filtration Beaker, Macro Size

A container used in the formation of a precipitate. Slight pressure or vacuum can be used to speed filtration. 1/4" O.D. sidearm has a sealed-in fritted disc.

Kontes Article No.	Joint	Cap. (mL)	Disc Dia. (mm)	Disc Porosity	Approx. Overall Height x Width (mm)	Case Qty.	Case Price
292900-0030	14/20	30	10	Coarse	110 x 105	1	77.51
Accessory							
179700-0814	BEVEL-SEAL™ Glass Adapter					1	27.02



Typical Filtration Application Using Two Beakers and Accessory Adapter

Filter Bell

KIMAX jar useful for filtrations where it is desirable to collect filtrate in a crucible, beaker or flask for further work. May be used with either common chemical funnels or fritted ware. Larger size will accommodate a 250 mL Erlenmeyer flask. Bottom of the flange is ground, so that a seal may be made with a piece of ground flat glass. Flat glass is not supplied. Tooled hose connection is designed to accept 5/16 inch I.D. flexible tubing.

Kimble Article No.	Approx. O.D.(mm)	Approx. I.D. (mm)	Approx. Overall Height (mm)	Approx. Internal Height to Shoulder (mm)	Rubber Stopper Size	Case Qty.	Case Price
32450-7511	75	70	110	65	4	1	207.37



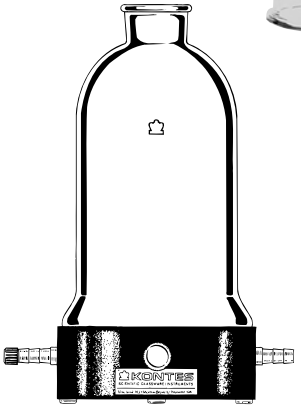
32450

Filter Dome

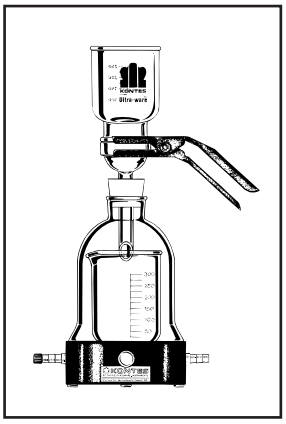
- **Constructed of non-metallic materials.**
- **Filtraters quickly and simply, 3 times faster than the gravity method.**
- **Filtrate is collected directly in a beaker, eliminating transfers.**

Filter domes are constructed of borosilicate glass and polypropylene. Chances of trace metal contamination are virtually eliminated. Designed for direct filtration and for use where transfers should be avoided. Filter domes are recommended for EPA-type sample digestions prior to Atomic Absorption Spectroscopy. Several units may be connected in a series and vacuum applied from a single source. The upper portion of the dome is tooled to accept a No. 8 stopper and the popular 47 and 90 mm funnel/support filtration assemblies. Valve and hose connections are made of CTFE. O-rings are FKM.

Kontes Article No.	Cap. (mL)	Hose Connections	Approx. Interior Height x Width (mm)	Approx. Overall Height x Width (mm)	Case Qty.	Case Price
953870-1000	1000	No. 2	140 x 95	230 x 155	1	432.26
953870-2000	2000	No. 2	190 x 95	285 x 155	1	454.59
Component Parts						
953872-0000	Filter Base with CTFE Fittings				1	285.10
953871-1000	Glass Dome Only, 1000 mL				1	149.78
953871-2000	Glass Dome Only, 2000 mL				1	168.16
Accessory filtration Assemblies						
953755-0000	47 mm, with Fritted Glass Support				1	135.01
953805-0000	47 mm, with Stainless Steel Support				1	167.71
953755-0090	90 mm, with Fritted Glass Support				1	470.45
953805-0090	90 mm, with Stainless Steel Support				1	528.72

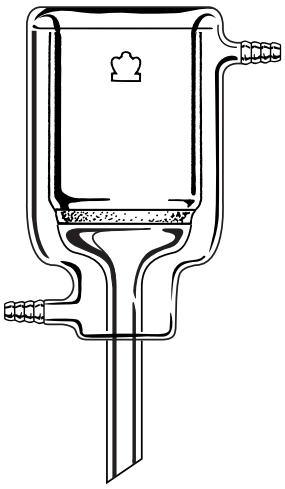


953870



Typical Setup

Hose Connector Tubing Size Chart	
Hose Connector Size	Fits Flexible Tubing I.D.
1	1/4"
2	3/8"
3	1/2"
4	3/4"



954900

Filter, Buchner, Jacketed

Useful where a support is required for either a paper or polymeric filter. Not for applications where pressure would exceed 15 psi. Sintered glass fritted disc is sealed in. Available in three porosities: Fine (F), Medium (M) and Coarse (C).

Kontes Article No.	Capacity (mL)	Disc Dia. (mm) x Porosity	Approx. Stem Length x O.D. (mm)	Approx. Overall Height x Body O.D. (mm)	Case Qty.	Case Price
954900-0326	30	30 x F	75 x 8	165 x 60	1	137.41
954900-0344	30	30 x M	75 x 8	165 x 60	1	125.95
954900-0323	30	30 x C	75 x 8	165 x 60	1	125.95
954900-0626	60	40 x F	75 x 10	155 x 70	1	147.42
954900-0644	60	40 x M	75 x 10	155 x 70	1	134.53
954900-0623	60	40 x C	75 x 10	155 x 70	1	134.53
954900-1526	150	60 x F	75 x 16	160 x 100	1	168.89
954900-1544	150	60 x M	75 x 16	160 x 100	1	134.53
954900-1523	150	60 x C	75 x 16	160 x 100	1	134.53
954900-3526	350	80 x F	75 x 19	190 x 110	1	194.65
954900-3544	350	80 x M	75 x 19	190 x 110	1	177.48
954900-3523	350	80 x C	75 x 19	190 x 110	1	177.48



28400

Filter, Buchner with KIMFLOW® Fritted Disc

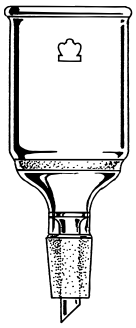
KIMAX funnel used wherever filter paper and membranes cannot withstand the chemical attack of the filtrate. Funnels are constructed with heavy-walled stems, and top rims are beaded for extra strength. With a marking spot. Designed from Federal Specification DD-F-776.

Kimble Article No.	Capacity (mL) and Porosity	Approx. Dia. of Disc (mm)	Approx. Height above Disc (mm)	Approx. Length of Stem (mm)	Stem O.D. (mm)	Stem I.D. (mm)	Shelf-Pack Qty.	Case Qty.	Case Price
28400-21	2 C	10	30	30	7	3	1	9	360.36
28400-22	2 M	10	30	30	7	3	1	9	360.36
28400-23	2 F	10	30	30	7	3	-	1	46.02
28400-151	15 C	20	45	75	8	4	1	6	223.68
28400-152	15 M	20	45	75	8	4	1	6	223.68
28400-153	15 F	20	45	75	8	4	-	1	45.22
28400-301	30 C	30	45	75	8	4	1	6	252.06
28400-302	30 M	30	45	75	8	4	1	6	253.08
28400-303	30 F	30	45	75	8	4	-	1	47.35
28400-601	60 C	40	50	75	10	6	1	6	279.36
28400-602	60 M	40	50	75	10	6	1	6	279.36
28400-603	60 F	40	50	75	10	6	-	1	52.30
28400-1501	150 C	60	50	75	15	10	1	4	333.00
28400-1502	150 M	60	50	75	15	10	1	4	329.84
28400-1503	150 F	60	50	75	15	10	-	1	93.84
28400-3501	350 C	80	75	75	20	14	1	3	345.84
28400-3502	350 M	80	75	75	20	14	1	3	345.84
28400-3503	350 F	80	75	75	20	14	-	1	129.99
28400-6001	600 C	90	90	100	20	14	1	3	416.40
28400-6002	600 M	90	90	100	20	14	1	3	414.60
28400-6003	600 F	90	90	100	20	14	-	1	162.04
28400-20001	2000 C	125	160	110	26	18	-	1	317.15
28400-20002	2000 M	125	160	110	26	18	-	1	317.15
28400-30001	3000 C	150	170	110	26	18	-	1	427.54
28400-30002	3000 M	150	170	110	26	18	-	1	427.54

Filter, Buchner, ⅋ 24/40 Joints

Useful where a support is required for either a paper or polymeric filter. Not for applications where pressure would exceed 15 psi. Coarse (C) porosity.

Kontes Article No.	⅋ Joint	Funnel Capacity (mL)	Disc Dia. (mm) x Porosity	Approx. Overall Height x Width (mm)	Case Qty.	Case Price
954001-0000	150	24/40	60 x C	145 x 70	1	155.03

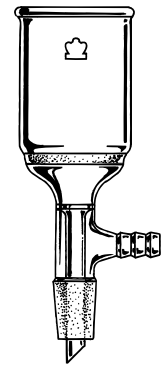


954001

Filter, Buchner

Funnel with sealed-in fritted disc and an integral #2 side hose connection. Useful with paper or polymeric filters. Not recommended for use above 15 psi.

Kontes Article No.	⅋ Joint	Funnel Capacity (mL)	Disc Dia. (mm) x Porosity	Approx. Overall Height x Width (mm)	Case Qty.	Case Price
293050-0123	14/20	15	20 x C	135 x 25	1	74.56
293050-0126	14/20	15	20 x F	135 x 25	1	74.56
293050-0144	14/20	15	20 x M	135 x 25	1	74.56
293050-0326	14/20	30	30 x F	130 x 45	1	74.56
293050-0344	14/20	30	30 x M	130 x 45	1	74.56
293050-0323	14/20	30	30 x C	130 x 45	1	74.56
293050-0623	14/20	60	40 x C	160 x 70	1	74.56
293050-0626	14/20	60	40 x F	160 x 70	1	74.56
293050-0644	14/20	60	40 x M	160 x 70	1	74.56
954100-0126	24/40	15	20 x F	145 x 50	1	102.16
954100-0144	24/40	15	20 x M	145 x 50	1	102.16
954100-0123	24/40	15	20 x C	145 x 50	1	102.16
954100-0326	24/40	30	30 x F	145 x 55	1	107.73
954100-0344	24/40	30	30 x M	145 x 55	1	107.73
954100-0323	24/40	30	30 x C	145 x 55	1	107.73
954100-0626	24/40	60	40 x F	160 x 60	1	113.98
954100-0644	24/40	60	40 x M	160 x 60	1	113.98
954100-0623	24/40	60	40 x C	160 x 60	1	113.98
954100-1526	24/40	150	60 x F	160 x 70	1	151.09
954100-1544	24/40	150	60 x M	160 x 70	1	151.09
954100-1523	24/40	150	60 x C	160 x 70	1	151.09
954100-3523	24/40	350	80 x C	190 x 90	1	164.22
954100-3526	24/40	350	80 x F	190 x 90	1	164.22
954100-3544	24/40	350	80 x M	190 x 90	1	164.22
954100-6023	24/40	600	90 x C	240 x 100	1	197.72
954100-6026	24/40	600	90 x F	240 x 100	1	197.72
954100-6044	24/40	600	90 x M	240 x 100	1	197.72
954120-1523	29/42	150	60 x C	160 x 70	1	151.09
954120-1526	29/42	150	60 x F	160 x 70	1	151.09
954120-1544	29/42	150	60 x M	160 x 70	1	151.09
954120-3523	29/42	350	80 x C	190 x 90	1	164.22
954120-3526	29/42	350	80 x F	190 x 90	1	164.22
954120-3544	29/42	350	80 x M	190 x 90	1	164.22
954120-6023	29/42	600	90 x C	240 x 100	1	197.72
954120-6026	29/42	600	90 x F	240 x 100	1	197.72
954120-6044	29/42	600	90 x M	240 x 100	1	197.72

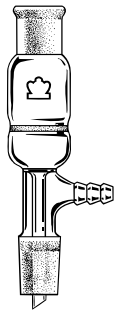


293050
954100
954120

Filter, Cylindrical, ⅋ 14/20 Joint

Filter funnel with ⅋ 14/20 joints and a 20 mm diameter fritted disc. Available in three porosities: Fine (F), Medium (M) and Coarse (C).

Kontes Article No.	Disc Porosity	Hose Connection	Approx. Overall Height (mm)	Case Qty.	Case Price
293001-0026	F	#1	110	1	83.42
293001-0044	M	#1	110	1	83.42
293001-0023	C	#1	110	1	83.42



293001



955250



38004

Filter, Hirsch

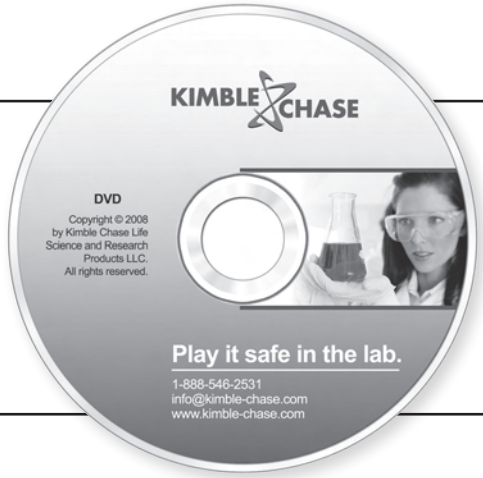
Conical funnel shape directs filtrate through a reduced area frit to concentrate crystal residue for rewashing. Available in three porosities: Fine (F), Medium (M) and Coarse (C).

Kontes Article No.	Top Dia. (mm)	Disc Dia. (mm)	Porosity	Stem Length x O.D. (mm)	Approx. Overall Height (mm)	Case Qty.	Case Price
955250-3523	40	10	C	145 x 6	180	1	23.49
955250-5026	50	20	F	70 x 8	115	1	51.64
955250-7526	75	30	F	75 x 8	145	1	71.61
955250-5044	50	20	M	70 x 8	115	1	50.84
955250-7544	75	30	M	75 x 8	145	1	71.61
955250-5023	50	20	C	70 x 8	115	1	48.87
955250-7523	75	30	C	75 x 8	145	1	71.61

Filtering Pump, Vacuum

KIMAX pump designed for minimum free air flow of 6.5 liters per minute with 40 lbs. of water pressure. With the same water pressure, a 500 mL filter flask is evacuated to the vapor pressure of water (approximately 29.3" of mercury vacuum) in approximately 1.5 minutes. Since water backs up into all pumps tested when operated on a closed system at pressures of less than 35 lbs., a check valve of improved design is an integral part of this pump. Stems are designed to accept 5/16 inch I.D. flexible tubing.

Kimble Article No.	Case Qty.	Case Price
38004-99	1	80.41



Safety Program - *Play it safe in the lab.*

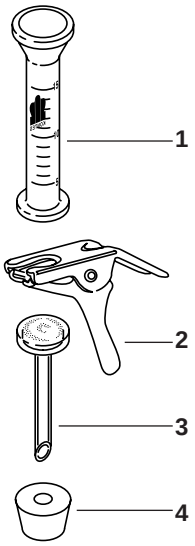
Our Safety Program discusses the ten basic safety rules of handling glassware as well as the technical properties and physics of glass. Available as a DVD.

Kimble Article No.	Format	Case Qty.	Case Price
99991D-99	DVD	1	23.99

See more safety products in the *SAFETYWARE* section.

Microfiltration Assembly, 25 mm, with Support, ULTRA-WARE®

The 25 mm vacuum microfiltration assemblies are designed to handle small volumes of liquids for analysis of particulate or microbiological contamination. The funnel is graduated from 5 to 15 mL in 1 mL increments. Prefilter size is 16 mm diameter and the approximate filter area is 2.5 cm^2. Connection to our 125 mL filtration flask (available below as an accessory) is made with a No. 5 silicone stopper.



953705

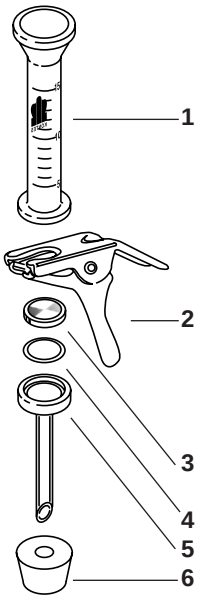
with Fritted Glass Support

Used for general filtration. Unit is supplied with a coarse fritted glass support base, 15 mL graduated funnel, anodized aluminum clamp and a No. 5 silicone stopper.

Kontes Article No.	Support Type	Graduated Funnel Cap. (mL)	Filter Size (mm)	Approx. Overall Height x Diam. (mm)	Case Qty.	Case Price
953705-0000	Fritted Glass	15	25	152 x 25	1	133.59

Component Parts			
953701-0000	(1) Glass Funnel, 25 mm, 15 mL capacity	1	42.77
953703-0000	(2) Anodized Aluminum Clamp, 25 mm	1	42.64
953702-0001	(3) Fritted Glass Support Base, 25 mm	1	62.27
953715-0501	(4) No. 5 Silicone Stopper, 3/8" (9.5 mm) Hole, for Use with Accessory 125 mL Filtration Flask	1	11.94

Accessories			
953701-0125	Glass Funnel, 25 mm, 150 mL Capacity	1	101.99
953701-0325	Glass Funnel, 25 mm, 300 mL Capacity	1	102.34
953710-0000	Filtration Flask, 125 mL, No. 5 Rubber Stopper Joint, #2 Hose Connection	1	28.42
953715-0801	No. 8 Silicone Stopper, 3/8" (9.5 mm) Hole, for Use with 1000 mL Filtration Flask	1	14.86
953760-0000	Filtration Flask, 1000 mL, No. 8 Stopper Joint, 1/4" Hose Connection	1	50.73



953730

with Stainless Steel Support

Used for filtering viscous or proteinaceous solutions or to produce ultra clean filtrate. This unit is supplied with a 316 stainless steel support screen, PTFE support screen gasket, glass support base, 15 mL graduated funnel, anodized aluminum clamp and a #5 silicone stopper.

Kontes Article No.	Support Type	Graduated Funnel Cap. (mL)	Filter Size (mm)	Approx. Overall Height x Diam. (mm)	Case Qty.	Case Price
953730-0000	Stainless	15	25	152 x 25	1	150.65

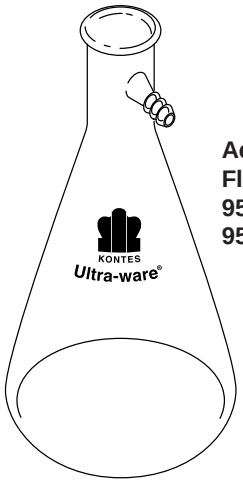
Component Parts			
953701-0000	(1) Glass Funnel, 25 mm,15 mL Capacity	1	42.77
953703-0000	(2) Anodized Aluminum Clamp, 25 mm	1	42.64
953711-0000	(3) Stainless Steel Support Screen, 25 mm	1	64.24
953712-0000	(4) PTFE Support Screen Gasket, Pkg./25 (1 Supplied)	25	27.99
953726-0001	(5) Glass Support Base, 25 mm	1	35.10
953715-0501	(6) No. 5 Silicone Stopper, 3/8" (9.5 mm) Hole, for Use with Accessory 125 mL Filtration Flask	1	11.94

Accessories			
953701-0125	Glass Funnel, 25 mm, 150 mL Capacity	1	101.99
953701-0325	Glass Funnel, 25 mm, 300 mL Capacity	1	102.34
953710-0000	Flask, 125 mL, No. 5 Rubber Stopper Joint, No. 2 Hose Connection	1	28.42
953715-0801	No. 8 Silicone Stopper, 3/8" (9.5 mm) Hole, for Use with 1000 mL, Filtration Flask	1	14.86
953760-0000	Filtration Flask, 1000 mL, No. 8 Stopper Joint, 1/4" Hose Connection	1	50.73

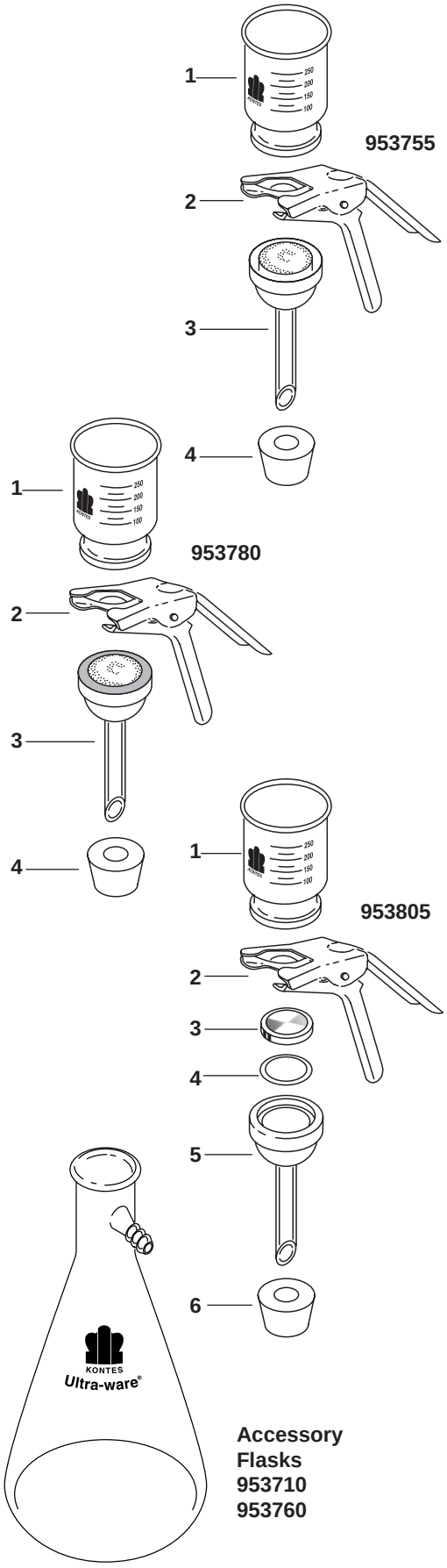
Filtering Flask, ULTRA-WARE®

This flask is manufactured from heavy wall borosilicate glass to assure the mechanical strength needed for vacuum filtration. The side arm accepts standard 1/4" (6 mm) I.D. tubing for connection to vacuum sources. A second flask should be connected between the filtering flask and the vacuum source to prevent accidental entry of the filtrate into the vacuum line or pump.

Kontes Article No.	Description	Case Qty.	Case Price
953710-0000	Flask, 125 mL, #5 Rubber Stopper Joint, #2 Hose Connection	1	28.42
953760-0000	Flask, 1000 mL, #8 Rubber Stopper Joint, #2 Hose Connection	1	50.73
953760-2000	Flask, 2000 mL, #8 Rubber Stopper Joint, #2 Hose Connection	1	86.70
953760-4000	Flask, 4000 mL, #8 Rubber Stopper Joint, #2 Hose Connection	1	126.15



Accessory Flasks 953710 953760



Microfiltration Assembly, 47 mm, with Support, ULTRA-WARE®

These vacuum microfiltration assemblies are designed to handle up to 500 mL of sample liquids for the analysis of particulate or microbiological contamination. The funnel is graduated from 100 to 250 mL in 25 mL increments. Prefilter size is 35 mm and the approximate filter area is 9.6 cm^2. Connection to our 1 liter filtration flask (available below as an accessory) is made with a #8 silicone stopper.

with Fritted Glass Support

Used for general filtration. This unit is supplied with a coarse fritted glass support base, 300 mL graduated funnel, anodized aluminum clamp and a #8 silicone stopper.

Kontes Article No.	Support Type	Graduated Funnel Cap. (mL)	Filter Size (mm)	Approx. Overall Height x Diam. (mm)	Case Qty.	Case Price
953755-0000	Fritted Glass	300	47	229 x 76	1	135.01

Component Parts

953751-0000	(1) Glass Funnel, 47 mm,300 mL	1	55.16
953753-0000	(2) Anodized Aluminum Clamp, 47 mm	1	65.38
953752-0001	(3) Fritted Glass Support Base, 47 mm	1	78.53
953763-0801	(4) #8 Silicone Stopper, 9/16" (14.3 mm) Hole, Fits Accessory 1L Flask	1	14.93

Accessories

953761-0000	Glass Funnel, 47 mm, 100 mL Capacity	1	52.59
953771-0000	Glass Funnel, 47 mm, 500 mL Capacity	1	93.46
953781-0000	Glass Funnel, 47 mm, 1000 mL Capacity	1	112.65
953760-0000	Filtration Flask, 1000 mL Capacity, #8 Stopper Joint, 1/4" Hose Connection	1	50.73
953760-1002	Filtration Flask, Safety Coated, 1L Cap., #8 Stop. Jt., 1/4" Hose Con.	1	97.72

with PTFE-Faced Fritted Glass Support

Used when autoclaving with the filter in place. The PTFE coating prevents the membrane from adhering to the ground glass surface. This unit is supplied with a PTFE faced fritted glass support base, PTFE-faced 300 mL graduated funnel, anodized aluminum clamp and a #8 silicone stopper.

Kontes Article No.	Support Type	Graduated Funnel Cap. (mL)	Filter Size (mm)	Approx. Overall Height x Diam. (mm)	Case Qty.	Case Price
953780-0000	PTFE-Faced	300	47	229 x 76	1	204.66

Component Parts

953776-0000	(1) PTFE-Faced Glass Funnel, 47 mm, 300 mL	1	78.53
953753-0000	(2) Anodized Aluminum Clamp, 47 mm	1	65.38
953777-0001	(3) PTFE-Faced Fritted Glass Support Base, 47 m	1	132.54
953763-0801	(4) #8 Silicone Stopper, 9/16" (14.3 mm) Hole, Fits Accessory 1L Flask	1	14.93

Accessories

953760-0000	Filtration Flask, 1000 mL Capacity, #8 Stopper Joint, 1/4" Hose Connection	1	50.73
953760-1002	Filtration Flask, Safety Coated, 1L Cap., #8 Stop. Jt., 1/4" Hose Con.	1	97.72

with Stainless Steel Support

Used for filtering viscous or proteinaceous solutions or to produce ultra clean filtrate. This unit is supplied with a 316 stainless steel support screen, PTFE support screen gasket, glass support base, 300 mL graduated funnel, anodized aluminum clamp and a #8 silicone stopper.

Kontes Article No.	Support Type	Graduated Funnel Cap. (mL)	Filter Size (mm)	Approx. Overall Height x Diam. (mm)	Case Qty.	Case Price
953805-0000	Stainless	300	47	229 x 76	1	167.71

Component Parts

953751-0000	(1) Glass Funnel, 47 mm,300 mL	1	55.16
953753-0000	(2) Anodized Aluminum Clamp, 47 mm	1	65.38
953810-0000	(3) Stainless Steel Support Screen, 47 mm	1	138.94
953811-0000	(4) PTFE Support Screen Gasket, Pkg./25, (1 Supplied)	25	52.59
953801-0001	(5) Glass Support Base, 47 mm	1	56.44
953763-0801	(6) #8 Silicone Stopper, 9/16" (14.3 mm) Hole, Fits Accessory 1L Flask	1	14.93

Accessories

953761-0000	Glass Funnel, 47 mm, 100 mL Capacity	1	52.59
953771-0000	Glass Funnel, 47 mm, 500 mL Capacity	1	93.46
953781-0000	Glass Funnel, 47 mm, 1000 mL Capacity	1	112.65
953760-0000	Filtration Flask, 1L Capacity, #8 Stopper Joint, 1/4" Hose Connection	1	50.73
953760-1002	Filtration Flask, Safety Coated, 1L Cap., #8 Stop. Jt., 1/4" Hose Con.	1	97.72

Microfiltration Apparatus, 47 mm All-Glass, with Fritted Glass Support Base, ULTRA-WARE®

The 47 mm filtration apparatus with fritted glass support is recommended for routine filtration analysis of corrosive liquids and the removal of particulates from HPLC solvents. The ground joint connection eliminates the phthalate contamination that can occur when using silicone or neoprene stoppers. The support base has a coarse porosity glass frit and an integral vacuum connection that is located above the drip tip to prevent contamination of the vacuum line with filtrate droplets. Each apparatus is supplied with funnel, anodized aluminum clamp, 47 mm fritted glass support base and filtration flask. Joints are ⧩ 40/35.

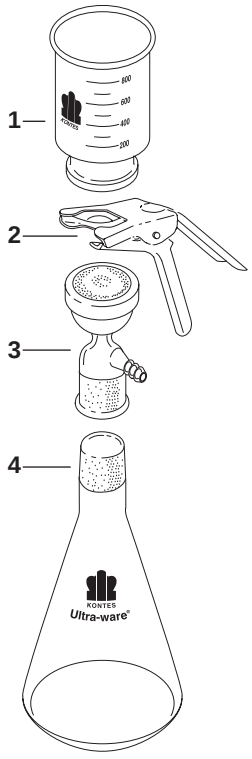
Kontes Article No.	Funnel Cap. (mL)	Flask Cap. (mL)	Filter Size (mm)	Hose Connection	Approx. Overall Height x Width (mm)	Case Qty.	Case Price
953825-0000	300	1000	47	#2	430 x 137	1	324.06
953835-0000	500	2000	47	#2	515 x 165	1	420.71
953845-0000	1000	4000	47	#2	600 x 205	1	453.40

Component Parts

953751-0000	(1) Glass Funnel, 47 mm, 300 mL	1	55.16
953771-0000	(1) Glass Funnel, 47 mm, 500 mL	1	93.46
953781-0000	(1) Glass Funnel, 47 mm, 1000 mL	1	112.65
953753-0000	(2) Aluminum Clamp, 47 mm	1	65.38
953826-0000	(3) Fritted Glass Support Base, 47 mm, ⧩ 40/35	1	176.23
953827-0000	(4) Flask, 1000 mL, ⧩ 40/35	1	110.51
953828-0000	(4) Flask, 2000 mL, ⧩ 40/35	1	180.48
953829-0000	(4) Flask, 4000 mL, ⧩ 40/35	1	206.07

Accessories

676001-4035	PTFE Joint Sleeve, ⧩ 40/35, 6/Pkg.	6	75.07
953761-0000	Glass Funnel, 47 mm, 100 mL	1	52.59
953830-0000	Flask Cap, Outer Joint, ⧩ 40/35	1	29.98



953825
953835
953845

Microfiltration Apparatus, 47 mm, with Stainless Steel Support, ULTRA-WARE®

The 47 mm filtration apparatus with stainless steel support is recommended when filtering viscous or proteinaceous solutions to give the maximum flow rate. This apparatus is also used to produce ultra clean filtrate since the stainless steel screen will not shed particles into the filtrate. Like the apparatus with fritted glass support, the ground joint connection eliminates the possible phthalate contamination that can occur when using silicone or neoprene stoppers. Each apparatus is supplied with funnel, anodized aluminum clamp, stainless steel support screen, PTFE gasket, 47 mm glass support base and filtration flask.

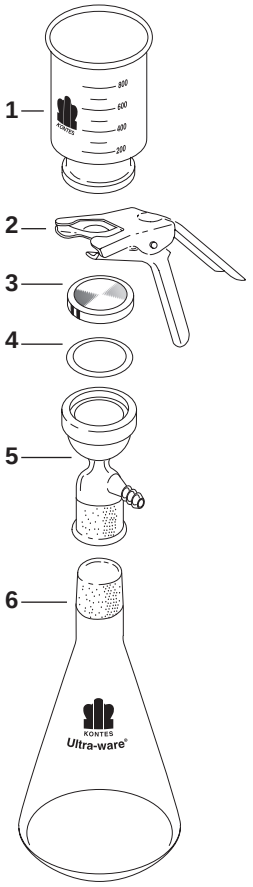
Kontes Article No.	Funnel Cap. (mL)	Flask Cap. (mL)	Filter Size (mm)	Hose Connection	Approx. Overall Height x Width (mm)	Case Qty.	Case Price
953855-1047	300	1000	47	#2	430 x 137	1	288.53

Component Parts

953751-0000	(1) Glass Funnel, 47 mm, 300 mL	1	55.16
953753-0000	(2) Anodized Aluminum Clamp, 47 mm	1	65.38
953810-0000	(3) Stainless Steel Support Screen, 47 mm	1	138.94
953811-0000	(4) PTFE Support Screen Gasket, Pkg./25, (1 Supplied)	25	52.59
953852-0001	(5) Glass Support Base, 47 mm, ⧩ 40/35 Outer Joint	1	133.96
953827-0000	(6) Filtration Flask, 1000 mL, ⧩ 40/35 Inner Joint	1	110.51

Accessories

676001-4035	PTFE Joint Sleeve, ⧩ 40/35, 6/Pkg.	6	75.07
953761-0000	Glass Funnel, 47 mm, 100 mL Capacity	1	52.59
953771-0000	Glass Funnel, 47 mm, 500 mL Capacity	1	93.46
953781-0000	Glass Funnel, 47 mm, 1000 mL Capacity	1	112.65
953828-0000	Filtration Flask, 2000 mL Capacity, ⧩ 40/35 Inner Joint	1	180.48
953829-0000	Filtration Flask, 4000 mL Capacity, ⧩ 40/35 Inner Joint	1	206.07
953830-0000	Flask Cap, Outer Joint, ⧩ 40/35	1	29.98



953855



with Bottle and Fritted Glass Support

This filtration assembly is specially designed to collect the filtrate directly into a media-style bottle. The fritted glass support base connects directly to the bottle with a unique cap and sealing ring. The support base has sealed-in coarse porosity (40-60 µm) fritted glass disc. The media-style bottle is vacuum and pressure rated from -1 to 1.5 bar. The Filtration Assembly is supplied complete with 300 mL funnel, clamp, support base and bottle.

with Bottle and Stainless Steel Support

This filtration assembly is similar to the one listed above except that the support base has a removable stainless steel support screen. This assembly is recommended for viscous or proteinaceous solutions and for producing ultra-clean filtrate. The Filtration Assembly is supplied complete with 300 mL funnel, aluminum clamp, support screen, PTFE gasket, support base and bottle.



179950



Typical Set-up

47 mm Filtration Assembly with Bottle and Fritted Glass Support

SPECIFICATIONS

Materials:

Funnel and Base:	Borosilicate Glass
Clamp:	Anodized Aluminum
Bottle Adapter:	Borosilicate Glass
Tubing Adapter:	Polypropylene with size 108 FKM o-ring
Caps:	PBT
Sealing Rings:	PTFE-faced Silicone

Filter Size: 47 mm diameter
Filter Area: Approximately 9.6 cm^2
Prefilter Size: 35 mm diameter
Funnel Capacity: 300 mL maximum, graduated from 100 mL to 250 mL in 25 mL increments
Connection: GL-45 thread to 1 liter vacuum and pressure rated media-style bottle

47 mm Filtration Assembly with Bottle and Stainless Steel Support

SPECIFICATIONS

Materials:

Funnel and Base:	Borosilicate Glass
Support Screen:	316 Stainless Steel
Screen Gasket:	PTFE
Clamp:	Anodized Aluminum
Bottle Adapter:	Borosilicate Glass
Tubing Adapter:	Polypropylene with size 108 FKM o-ring
Caps:	PBT
Sealing Rings:	PTFE-faced Silicone

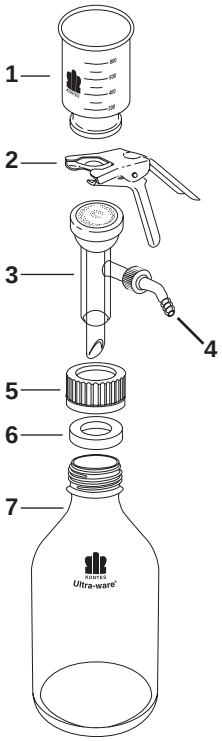
Filter Size: 47 mm diameter
Filter Area: Approximately 9.6 cm^2
Prefilter Size: 35 mm diameter
Funnel Capacity: 300 mL maximum, graduated from 100 mL to 250 mL in 25 mL increments
Connection: GL-45 thread to 1 liter vacuum and pressure rated media-style bottle

Adapter Assembly, GL 45 Thread

This adapter assembly is designed to allow connection of a 47 mm or 90 mm filtration support base with a straight drip tip to a bottle or reservoir with a GL 45 thread. This allows the filtrate to be collected directly into a media-type bottle when using a standard membrane filtration assembly. All components are steam autoclavable.

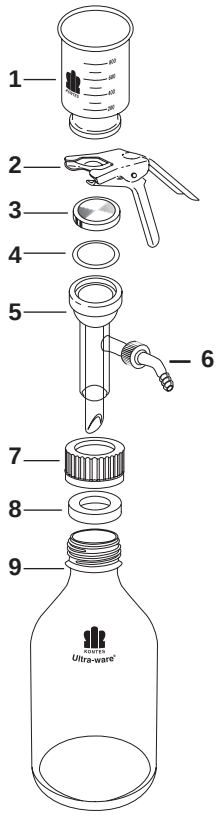
Kontes Article No.	Description	Case Qty.	Case Price
179950-4532	Filtration Adapter Assembly	1	78.17
Component Parts			
179951-3213	Glass Adapter Only, 32 mm	1	26.30
410170-3220	Cap, PBT, GL 32, 20 mm opening	1	4.00
410171-2916	Sealing Ring, Silicone/PTFE, 29mm	1	11.94
410170-4534	Cap, PBT, GL 45, 34 mm opening	1	6.83
410171-4226	Sealing Ring, Silicone/PTFE, 42mm	1	21.18
736400-1413	Tubing Adapter, Assembly 1/4" x 13-425, #1 Hose Connection	1	7.94
Accessory Parts			
953907-0000	Solvent Bottle Adapter, GL-45	1	56.27

Kontes Article No.	Description	Case Qty.	Case Price
953750-5347	47 mm Filtration Assembly with Bottle and Fritted Glass Support	1	294.21
Component Parts			
953751-0000	(1) Glass Funnel, 47 mm, 300 mL capacity	1	55.16
953753-0000	(2) Anodized Aluminum Clamp, 47 mm	1	65.38
953752-5047	(3) Fritted Glass Support Base, 47 mm	1	120.09
736400-1413	(4) Tubing Adapter, Assembly 1/4" x 13-425	1	7.94
410170-4534	(5) Cap, PBT, GL 45, 34 mm opening	1	6.83
410171-4226	(6) Sealing Ring, Silicone/PTFE, 42 mm	1	21.18
953900-0010	(7) Bottle, Vacuum/Pressure, 1000 mL	1	34.81
Accessories			
953771-0000	Glass Funnel, 47 mm, 500 mL capacity	1	93.46
953781-0000	Glass Funnel, 47 mm, 1000 mL capacity	1	112.65
923910-0115	Diaphragm Vacuum Pump, 110/115 VAC	1	546.79



953750

Kontes Article No.	Description	Case Qty.	Case Price
953800-5347	47 mm Filtration Assembly with Bottle and Stainless Steel Support	1	319.78
Component Parts			
953751-0000	(1) Glass Funnel, 47 mm, 300 mL capacity	1	55.16
953753-0000	(2) Anodized Aluminum Clamp, 47 mm	1	65.38
953810-0000	(3) Stainless Steel Support Screen, 47 mm	1	138.94
953811-4701	(4) PTFE Support Screen Gasket, 47 mm	1	2.42
953801-5047	(5) Glass Support Base, 47 mm	1	77.10
736400-1413	(6) Tubing Adapter, Assembly 1/4" x 13-425	1	7.94
410170-4534	(7) Cap, PBT, GL 45, 34 mm opening	1	6.83
410171-4226	(8) Sealing Ring, Silicone/PTFE, 42 mm	1	21.18
953900-0010	(9) Bottle, Vacuum/Pressure, 1000 mL	1	34.81
Accessories			
953771-0000	Glass Funnel, 47 mm, 500 mL capacity	1	93.46
953781-0000	Glass Funnel, 47 mm, 1000 mL capacity	1	112.65
923910-0115	Diaphragm Vacuum Pump, 110/115 VAC	1	546.79
953715-0501	Stopper Size 5, 3/8" Hole	1	11.94



953800

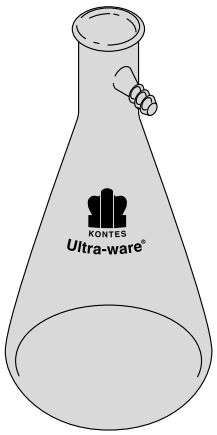
Filtering Flask, Plastic Safety Coated

These erlenmeyer style flasks are manufactured from heavy-wall borosilicate glass to assure the mechanical strength needed for vacuum filtration. The 125 mL flask has a No. 5 stopper joint. The 1, 2 and 4 liter flasks have a No. 8 stopper joint. All flasks have a #2 side arm for connection to 1/4" (6 mm) I.D. flexible tubing.

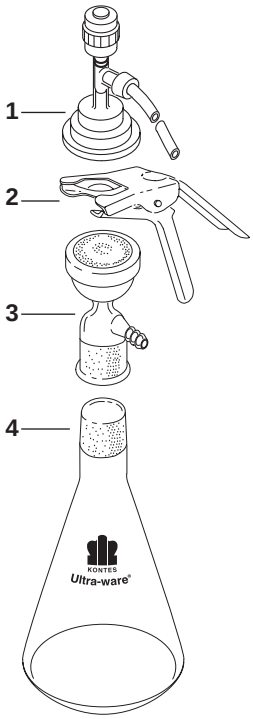
Kontes Article No.	Description	Case Qty.	Case Price
953760-0122	Filter Flask, Coated, 125 mL	1	56.86
953760-1002	Filter Flask, Coated, 1L	1	97.72
953760-2002	Filter Flask, Coated, 2L	1	142.14
953760-4002	Filter Flask, Coated, 4L	1	173.39

Accessory Filtration Assembly

Kontes Article No.	Support Type	Grad. Funnel Capacity (mL)	Filter Size (mm)	Approx. Overall Height x Dia. (mm)	Case Qty.	Case Price
953755-0000	Fritted Glass	300	47	229 x 76	1	135.01



953760



953820

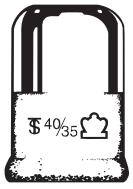
Microfiltration Apparatus, 47 mm All-Glass, with Solvent Pickup Adapter, ULTRA-WARE®

This system eliminates pouring HPLC solvents into funnels. The solvent pickup adapter draws solventdirectly from a reagent bottle through a 47 mm filter and into a filter flask. After filtration is complete, the HI-VAC valve on the solvent pickup adapter can be turned off for vacuum degassing.

Existing ULTRA-WARE® and Millipore filtration assemblies are easily converted to in-line filtration/degassing by replacing existing funnels with solvent pickup adapters. They clamp to support bases in the same way that funnels do.

This system comes with a solvent pickup adapter, coarse porosity fritted glass filter base, inner joint flask and an aluminum clamp. Filter base has an integral hose connection above the filtrate drip tip to prevent contamination of the vacuum line with filtrate droplets.

Kontes Article No.	Filter Size (mm)	Flask Cap. (mL)	Hose Connection	Joints	Approx. Overall Height x Width (mm)	Case Qty.	Case Price
953820-1047	47	1000	#2	40/35	430 x 137	1	433.49
953820-4047	47	4000	#2	40/35	525 x 205	1	504.57
Component Parts							
953906-0047	(1) Solvent Pickup Adapter with 1/4" OD PTFE Tubing					1	156.32
953753-0000	(2) Anodized Aluminum Clamp, 47 mm					1	65.38
953826-0000	(3) Fritted Glass Support Base, 40/35 Outer Joint					1	176.23
953827-0000	(4) Flask, 1000 mL, 40/35 Inner Joint					1	110.51
953829-0000	(4) Flask, 4000 mL, 40/35 Inner Joint					1	206.07
Accessory							
953830-0000	Flask Cap, Outer Joint 40/35					1	29.98



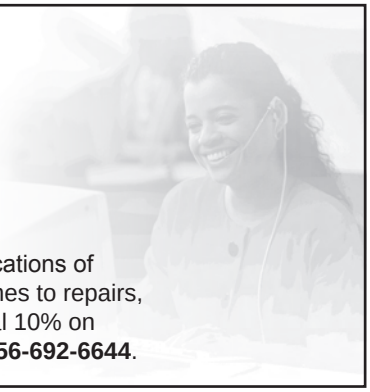
953830

Hose Connector Tubing Size Chart	
Hose Connector Size	Fits Flexible Tubing I.D.
1	1/4"
2	3/8"
3	1/2"
4	3/4"



- **Custom Fabrications**
- **Quality Repairs**
- **Modifications of All Kinds**
- **No Order Too Small**
- **Quick Turnaround**

KONTES
custom glass shop
*call toll-free **800-682-6644***
customglass@kimble-chase.com



Contact the **Kontes Custom Glass Shop** at KIMBLE CHASE for modifications of standard products or fabrication of your unique designs. And when it comes to repairs, we can save you up to 75% of the cost of a new item. Save an additional 10% on repairs of Kontes or Kimble Brand products. Fax your requirements to **856-692-6644**.

Microfiltration Assembly, 90 mm, with Support, ULTRA-WARE®

The 90 mm vacuum microfiltration assemblies are designed for large sample volumes or samples with high particulate loads that would tend to clog a 47 mm diameter filter. **Filtration rates are up to four times faster than 47 mm filters.** The funnel is graduated from 300 to 1000 mL in 50 mL increments. Maximum funnel capacity is 1100 mL. Prefilter size is 70 mm diameter and the approximate filter area is 38.5 cm^2. Connection to our 1 liter filtration flask (available as an accessory) is made with a #8 silicone stopper.

with Fritted Glass Support

Used for general filtration. Unit is supplied with a coarse fritted glass support base, 1 liter graduated funnel, anodized aluminum clamp and a #8 silicone stopper.

Kontes Article No.	Support Type	Graduated Funnel Cap. (mL)	Filter Size (mm)	Approx. Overall Height x Diam. (mm)	Case Qty.	Case Price
953755-0090	Fritted Glass	1000	90	160 x 350	1	470.45

Component Parts

953781-0090	(1) Glass Funnel, 90 mm,1000 mL	1	131.12
953753-0090	(2) Anodized Aluminum Clamp, 90 mm	1	99.50
953752-0090	(3) Fritted Glass Support Base, 90 mm	1	221.72
953763-0801	(4) #8 Silicone Stopper, 9/16" (14.3 mm) Hole, Fits Accessory 1L Flask	1	14.93

Accessories

953760-0000	Filtration Flask, 1000 mL Capacity, #8 Stopper Joint, 1/4" Hose Connection	1	50.73
953760-1002	Filtration Flask, Safety Coated, 1L Cap., #8 Stop. Jt., 1/4" Hose Con.	1	97.72

with Replaceable Fritted Glass Support

Used for general filtration. The fritted glass support disc can be replaced if it becomes clogged or exchanged if sample to sample cross contamination is a concern. This unit is supplied with a coarse fritted glass support disc, glass support base, 1 liter graduated funnel, anodized aluminum clamp and a #8 silicone stopper.

Kontes Article No.	Support Type	Graduated Funnel Cap. (mL)	Filter Size (mm)	Approx. Overall Height x Diam. (mm)	Case Qty.	Case Price
953770-0090	Fritted Glass	1000	90	160 x 350	1	511.65

Component Parts

953781-0090	(1) Glass Funnel, 90 mm,1000 mL	1	131.12
953753-0090	(2) Anodized Aluminum Clamp, 90 mm	1	99.50
953772-0090	(3) Fritted Glass Support Disc, Coarse, 90 mm	1	181.92
953801-0090	(4) Fritted Glass Support Base, 90 mm, Shell	1	118.35
953763-0801	(5) #8 Silicone Stopper, 9/16" (14.3 mm) Hole, Fits Accessory 1L Flask	1	14.93

Accessories

953760-0000	Filtration Flask, 1000 mL Capacity, #8 Stopper Joint, 1/4" Hose Connection	1	50.73
953760-1002	Filtration Flask, Safety Coated, 1L Cap., #8 Stop. Jt., 1/4" Hose Con.	1	97.72
953715-0501	Stopper Size 5, 3/8" Hole	1	11.94

with Stainless Steel Support

Used for filtering viscous or proteinaceous solutions or to produce ultra-clean filtrate. This unit is supplied with a 316 stainless steel support screen, glass support base, 300 mL graduated funnel, anodized aluminum clamp and a No. 8 silicone stopper.

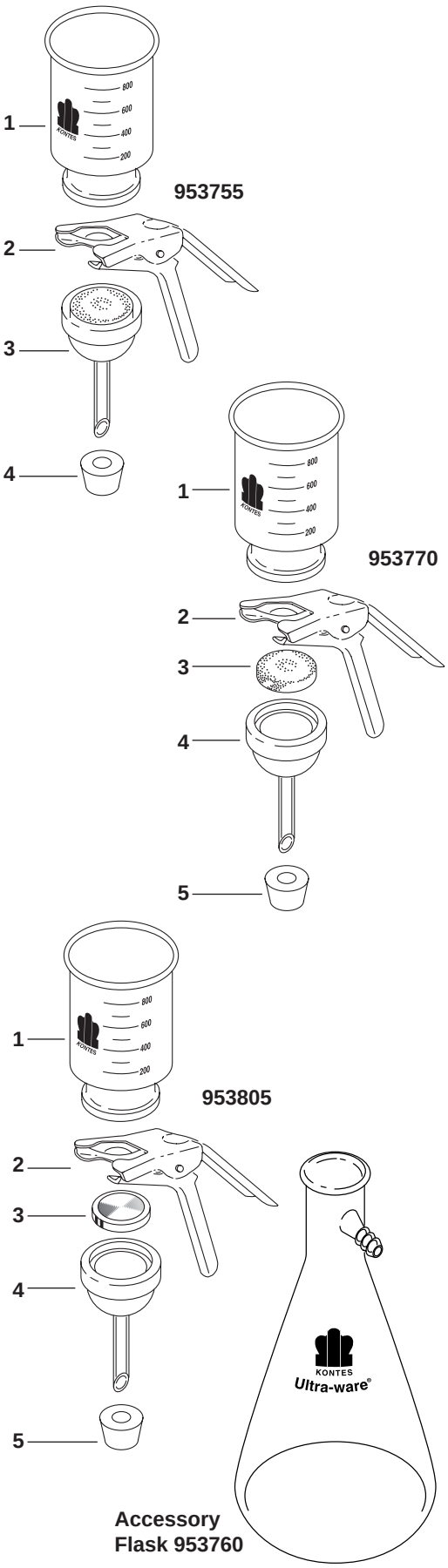
Kontes Article No.	Support Type	Graduated Funnel Cap. (mL)	Filter Size (mm)	Approx. Overall Height x Diam. (mm)	Case Qty.	Case Price
953805-0090	Stainless	1000	90	160 x 350	1	528.72

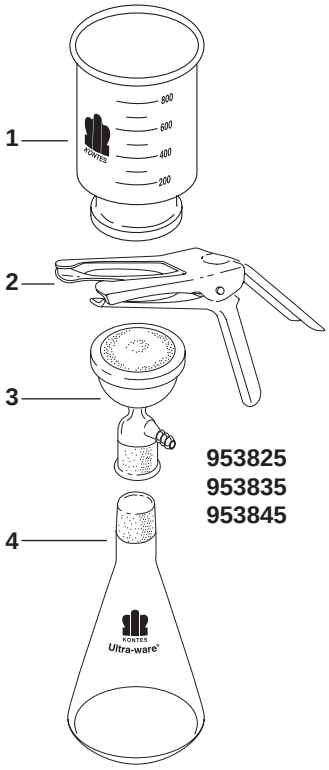
Component Parts

953781-0090	(1) Glass Funnel, 90 mm,1000 mL	1	131.12
953753-0090	(2) Aluminum Clamp, 90 mm	1	99.50
953810-0090	(3) Stainless Steel Support Screen, 90 mm	1	281.41
953801-0090	(4) Glass Support Base, 90 mm	1	118.35
953763-0801	(5) #8 Silicone Stopper, 9/16" (14.3 mm) Hole, Fits Accessory, 1 L	1	14.93

Accessories

953760-0000	Filtration Flask, 1L Capacity, #8 Stopper Joint, 1/4" Hose Connection	1	50.73
953760-1002	Filtration Flask, Safety Coated, 1L Cap., #8 Stop. Jt., 1/4" Hose Con.	1	97.72

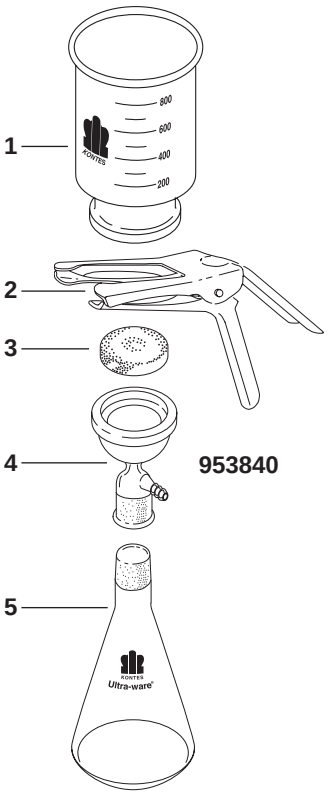




Microfiltration Apparatus, 90 mm All-Glass, with Fritted Glass Support, ULTRA-WARE®

The 90 mm filtration assembly with fritted glass support is designed for large volume filtration analysis of corrosive liquids or samples with high particulate loads that would tend to clog a 47 mm diameter filter. This unit is also recommended for filtering large volumes of HPLC solvents. The ground glass connection eliminates the possibility of phthalate contamination that can occur when using silicone or neoprene stoppers. Each apparatus is supplied with 1000 mL funnel, 90 mm coarse porosity fritted glass support base, anodized aluminum clamp and filtration flask.

Kontes Article No.	Description	Case Qty.	Case Price
953825-0090	90 mm Filtration Apparatus with 1000 mL Funnel and 1 liter Flask	1	739.05
953835-0090	90 mm Filtration Apparatus with 1000 mL Funnel and 2 liter Flask	1	784.55
953845-0090	90 mm Filtration Apparatus with 1000 mL Funnel and 4 liter Flask	1	808.71
Component Parts			
953781-0090	(1) Glass Funnel, 90 mm, 1000 mL capacity	1	131.12
953753-0090	(2) Anodized Aluminum Clamp, 90 mm	1	99.50
953826-0090	(3) Fritted Glass Support Base, 90 mm, ⅋ 40/35 outer joint	1	451.97
953827-0000	(4) Filtration Flask, 1000 mL capacity, ⅋ 40/35 inner joint	1	110.51
953828-0000	(4) Filtration Flask, 2000 mL capacity, ⅋ 40/35 inner joint	1	180.48
953829-0000	(4) Filtration Flask, 4000 mL capacity, ⅋ 40/35 inner joint	1	206.07
Accessories			
676001-4035	PTFE Joint Sleeve, ⅋ 40/35, 6/pkg.	6	75.07
953830-0000	Flask Cap, ⅋ 40/35 outer joint	1	29.98



Microfiltration Apparatus, 90 mm All-Glass, with Replaceable Fritted Glass Support, ULTRA-WARE®

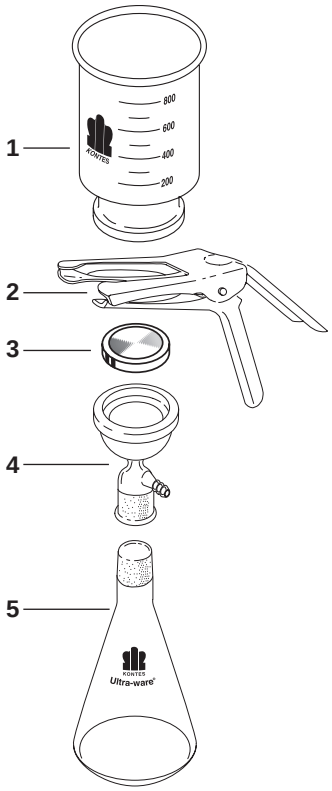
The 90 mm filtration apparatus with replaceable fritted glass support is recommended for large volume filtration analysis of corrosive liquids or samples with high particulate loads. The glass support disc can be replaced if it becomes clogged or if sample to sample contamination is a concern. Like the apparatus with fritted glass support, the ground joint connection eliminates the possibility of phthalate contamination that can occur when using silicone or neoprene stoppers. Each apparatus is supplied with 1000 mL funnel, 90 mm glass support base, coarse porosity fritted glass disc, anodized aluminum clamp and filtration flask.

Kontes Article No.	Description	Case Qty.	Case Price
953840-1090	90 mm Filtration Apparatus with 1000 mL Funnel and 1 liter Flask	1	852.77
953840-2090	90 mm Filtration Apparatus with 1000 mL Funnel and 2 liter Flask	1	898.25
953840-4090	90 mm Filtration Apparatus with 1000 mL Funnel and 4 liter Flask	1	918.15
Component Parts			
953781-0090	(1) Glass Funnel, 90 mm, 1000 mL capacity	1	131.12
953753-0090	(2) Anodized Aluminum Clamp, 90 mm	1	99.50
953772-0090	(3) Fritted Glass Support Disc, 90 mm	1	181.92
953841-0090	(4) Glass Support Base, 90 mm, ⅋ 40/35 outer joint	1	392.28
953827-0000	(5) Filtration Flask, 1000 mL capacity, ⅋ 40/35 inner joint	1	110.51
953828-0000	(5) Filtration Flask, 2000 mL capacity, ⅋ 40/35 inner joint	1	180.48
953829-0000	(5) Filtration Flask, 4000 mL capacity, ⅋ 40/35 inner joint	1	206.07
Accessories			
676001-4035	PTFE Joint Sleeve, ⅋ 40/35, 6/pkg.	6	75.07
953830-0000	Flask Cap, ⅋ 40/35 outer joint	1	29.98

Microfiltration Apparatus, 90 mm, with Stainless Steel Support, ULTRA-WARE®

The 90 mm filtration apparatus with stainless steel support is recommended when filtering large volumes of viscous or proteinaceous solutions to give the maximum flow rate. This unit is also used to produce ultra clean filtrate since the screen will not shed particles into the filtrate. Each apparatus is supplied with stainless steel support screen, glass support base, 1000 mL funnel, anodized aluminum clamp and filtration flask.

Kontes Article No.	Description	Case Qty.	Case Price
953855-1090	90 mm Filtration Apparatus with S.S. Support, 1 L Funnel and 1 L Flask	1	933.79
Component Parts			
953781-0090	(1) Glass Funnel, 90 mm, 1000 mL capacity	1	131.12
953753-0090	(2) Anodized Aluminum Clamp, 90 mm	1	99.50
953810-0090	(3) Stainless Steel Support Screen, 90 mm	1	281.41
953841-0090	(4) Glass Support Base, 90 mm, ⅋ 40/35 outer joint	1	392.28
953827-0000	(5) Filtration Flask, 1000 mL capacity, ⅋ 40/35 inner joint	1	110.51
Accessories			
953830-0000	Flask Cap, ⅋ 40/35 outer joint	1	29.98
676001-4035	PTFE Joint Sleeve, ⅋ 40/35, 6/pkg.	6	75.07



953855



Safety System 3 - *See page 116 for complete details.*

Eliminates the safety hazards of aluminum foil-wrapped solvent containers.

- This unique Solvent Bottle Adapter is made from PBT and converts ULTRA-WARE® GL-45 mobile phase caps to standard 4L solvent bottles for direct connection to your HPLC pump.
- ULTRA-WARE® Economy Three Hole Cap is manufactured from PTFE with a TFE/propylene o-ring and a polypropylene screw collar.
- System includes Bottom-of-the-Bottle™ Inlet / Sparge Filter.

Kontes Article No.	Description	Price
953930-0000	Safety System 3 with GL-45 Bottle Adapter	158.51
953930-0001	Safety System 3 without GL-45 Bottle Adapter	107.11



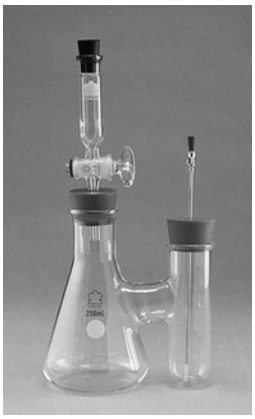
881700

Antibiotic Moisture Content

For determining moisture loss on drying in tablets, troches, or capsules. Sample is weighed, transferred to the flask, and placed in a vacuum oven. Drying is done in the oven at a temperature of 60°C and a pressure of 5 mm or less of mercury for three hours. The percent of loss is then calculated.

Kontes Article No.	Joints	Capacity (mL)	Case Qty.	Case Price
881700-0000	10/10	2.2	1	53.61

Ref: Method is defined in Code of Federal Regulations and the U.S. Pharmacopea, Addendum A to Supplement 3, 1982.

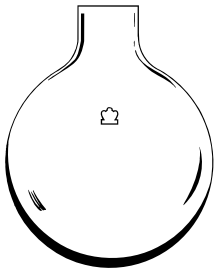


881900

Biometer

Designed for use in studying and determining carbon dioxide evolution for aerobic biodegradation of an organic chemical in natural soils. This refers to the reduction in complexity of the chemical through the metabolic activity of organisms, particularly bacteria and fungi. The biometer flask is available in two sizes and is constructed of borosilicate glass. Comes complete with rubber stoppers, stainless steel syringe and stopcock filter column. Stopcock plug is 801001-0002.

Kontes Article No.		Capacity (mL)	Case Qty.	Case Price
881900-0250		250	1	118.07
Component Parts				
881901-0250	Flask Only, 250 mL		1	59.39
881902-0000	Column Filter		1	58.33
868270-1406	Needle SS 14 Gauge 6" Blunt End		1	16.53



994910

Blank, Glassblower, Round Bottom

Single neck round bottom flask blank having uniform wall thickness.

Kontes Article No.	Capacity (mL)	Approx. Dia. (mm)	Case Qty.	Case Price
994910-0100	100	62	1	7.53
994910-0250	250	83	1	10.10
994910-0500	500	102	1	12.22
994910-1000	1000	130	1	17.61
994910-2000	2000	161	1	49.59
994910-3000	3000	185	1	54.03
994910-5000	5000	221	1	85.96



25630

Baffled Shake

Designed for use with rotary and reciprocating shakers where baffle indents provide greater turbulance to improve oxygen transfer rates or aeration. Flask has a neck with a plain fire-polished finish and suitable for a plastic cap.

Kimble Article No.	Capacity (mL)	Base Diameter (mm)	Approx. Height (mm)	Approx. O.D. Neck (mm)	Case Qty.	Case Price
25630-125	125	66	125	25	6	97.26
25630-250	250	82	142	38	6	112.38
25630-500	500	102	183	38	6	122.16
25630-1000	1000	128	230	38	6	205.20
25630-2000	2000	161	288	38	6	323.28

Accessory Closures		Shelf-Pack Qty.	Case Qty.	Case Price
73660-25	KIM-KAP™ Polypropylene Closure, 25 mm	100	500	77.56
73660-38	KIM-KAP Polypropylene Closure, 38 mm	50	250	81.19

See culture flask closures listed under 73660.

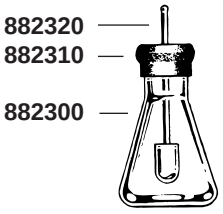
Incubation, Center Well

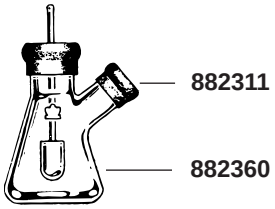
Used for metabolic studies of biological materials. Particularly useful in measuring $C_{14}O_2$ yields following incubation. Also suitable for in vitro incubations, insulin bio-assays, persulfate oxidations, and the "distillation" of any volatile acid or base. Since either an acid or alkali is introduced at the end of the reaction, it is possible to use this easy system with either a phosphate or bicarbonate buffer. The disposable center well can easily be cut off when transferred to a liquid scintillation counting vial. 882360 sidearm flask enables syringe needle entry without disturbing established conditions.

Polypropylene center well is 70 mm in length. Approximate overall height x width for 10 mL is 50 x 31 mm; 25 mL is 60 x 40 mm. Rubber stopper provides a double seal and has an off-center hole for the insertion of the center well.

Order as component parts. Specify article number. Only sold in the packages shown below.

Kontes Article No.	Components	Case Qty.	Case Price
882300-0010	Flask Only, 10 mL	12	72.25
26500-25	Kimble KIMAX® Flask Only, 25 mL	48	180.00
882360-0010	Sidearm Flask Only, 10 mL	12	149.23
882310-0000	Stopper Only, Top	144	101.62
882311-0000	Stopper Only, Sidearm	144	77.10
882320-0000	Center Well, Polypropylene, 10 mm diameter	144	72.86





Long Neck, with Capacity Scale

KIMAX flask has a thick-walled tubing neck with a plain fire polished finish, sealed to an Erlenmeyer-shaped body. Neck is long enough to accept a metal or plastic cap, or a cotton plug may be used if desired. All flasks have durable white ceramic enamel scales to indicate approximate volumes at various levels. Designed from ASTM Specification E1404, Type IV, Class 1 requirements.

Kimble Article No.	Cap. (mL)	Graduated Interval (mL)	Subdiv. (mL)	Approx. Widest Dia. (mm)	Approx. Height (mm)	Cap Size & Neck O.D. (mm)	Shelf-Pack Qty.	Case Qty.	Case Price
25615-125	125	50 to 125	25	66	125	25	6	24	239.76
25615-250	250	50 to 225	25	82	142	38	6	24	262.80
25615-500	500	100 to 500	50	102	183	38	6	24	362.64
25615-1000	1000	250 to 1000	50	128	230	38	6	24	607.68
25615-2000	2000	600 to 2000	100	161	288	38	6	12	546.36

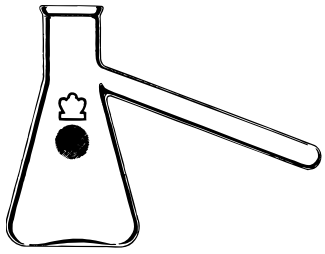


25615

Nephelo Culture Flask

Culture flask with a sidearm for insertion into a nephelometer. Bacterial or protein cell production can be monitored in situ.

Kontes Article No.	Flask Size (mL)	Approx. Sidearm O.D. x Length (mm)	Approx. Overall Height x Width (mm)	Case Qty.	Case Price
881750-0214	125	14 x 130	116 x 170	1	30.25
881750-0219	125	19 x 130	116 x 170	1	30.25
881750-0414	250	14 x 130	132 x 180	1	33.22
881750-0419	250	19 x 130	132 x 180	1	33.22



881750

See CYTOSTIR Stirred Bioreactors under ***Cell Culture.***

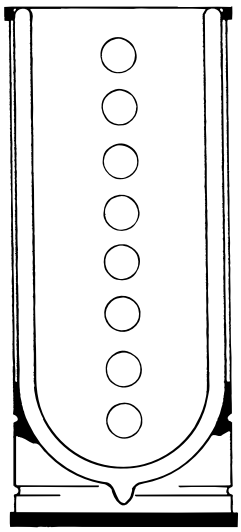


611290

Dewar, Cylindrical Low-Form

Unique, low-form design provides users with an ideal container for subambient work. Biological applications such as rapid freeze and recovery of tissue/organ specimens are possible. Dewar is solid-silvered. Configuration allows for agitation in a flask with a magnetic stirrer. Coolant temperatures can range from dry ice/acetone to liquid nitrogen.

Kontes Article No.	Overall Capacity (mL)	Flask (mL)	Approx. Coolant Capacity with Round Bottom Flask Inserted (mL)	I.D. x Depth (mm)	Case Qty.	Case Price
611290-0150	150	100	100	80 x 35	1	193.13
611290-0350	350	100	200	80 x 75	1	193.13
611290-0500	500	300	250	105 x 80	1	236.20
611290-0850	850	500	450	130 x 75	1	251.86
611290-1500	1500	1000	500	145 x 100	1	351.83
611290-2500	2500	1000	1500	170 x 135	1	793.42



611795

Flask, Dewar

Specially constructed dewar is fully jacketed with aluminum. Viewing ports allow a visible inspection of the contents through the strip-silvered glass dewar flask.

Kontes Article No.	I.D. x Depth (mm)	Case Qty.	Case Price
611795-2430	95 x 300	1	294.92

Dissolution, Test Vessel

KIMAX dissolution test vessel constructed of borosilicate glass, with a round bottom. Designed for Dissolution Testing Procedure for drug bioavailability as published by Kirchhoefer in Journal of the Association of Official Analytical Chemists, Vol. 59, March 1976, and U.S.P.

Kimble Article No.	Nominal Capacity (mL)	Approx. O.D. O.D. Height (mm)	Shelf-Pack Qty.	Case Qty.	Case Price
33730-1000	1000	108 x 160	1	2	179.04

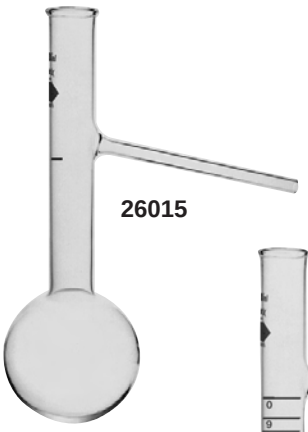


33730

Distilling Flask, Engler

KIMAX distilling flask. Sidearm tube is sealed at an angle of 75° from the neck and is 137 ± 3 mm from the bottom of the flask. It is designed from ASTM Specification E133 and intended for use in ASTM D86, D233, D801, and D802.

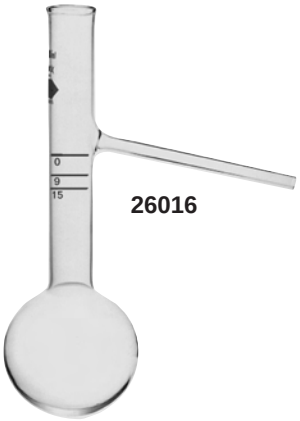
Kimble Article No.	Capacity (mL)	Rubber Stopper Size	Approx. Height (mm)	Arm O.D. (mm)	Shelf-Pack Qty.	Case Qty.	Case Price
26015-125	125	2	214	7	12	24	433.20



Distilling Flask, Engler, Three Reference Lines

KIMAX distilling flask, same as 26015-125, except with three reference lines. For use with Haage automatic distillation apparatus or others that call for three thermometer depth insertions. Ref: ASTM D86.

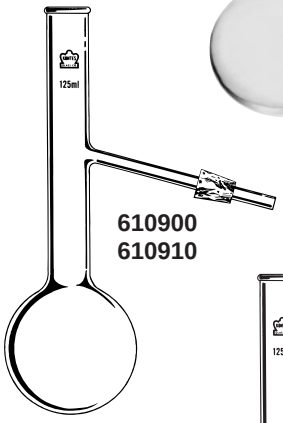
Kimble Article No.	Capacity (mL)	Rubber Stopper Size	Approx. Height (mm)	Arm O.D. (mm)	Shelf-Pack Qty.	Case Qty.	Case Price
26016-125	125	2	214	7	12	24	478.80



Distilling Flask, Barrett and Engler, ASTM E133

Barrett and Engler distilling flasks made to ASTM E 133 specifications. These flasks feature smooth, consistent, heavy walls for uniform heating and minimal breakage. Supplied with one cork for the sidearm.

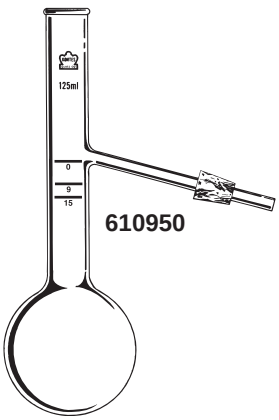
Kontes Article No.	Capacity (mL)	Rubber Stopper Size	Approx. Height (mm)	Type	Case Qty.	Case Price
610910-0125	125	2	215	Engler	12	324.53
610900-0200	200	3	180	Barrett	24	667.44



Distilling Flask, Engler, with Reference Lines

Heavy wall flask identical to 610910-0125 but with reference lines for use with automatic distillation apparatus indicating thermometer insertion points. Ref: ASTM D86

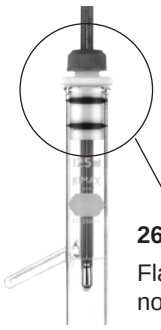
Kontes Article No.	Capacity (mL)	Rubber Stopper Size	Approx. Height (mm)	Case Qty.	Case Price
610950-0125	125	2	215	12	314.01



Centering Device, Thermometer, for Distilling Flasks

Designed for 6.5mm O.D. manual thermometer or 1/4" temperature sensor probe as used on standard Automated Distillation Apparatus with Kimble 26015-125 flasks. This PTFE device with FKM o-ring seal assures centering of sensor probe in flask neck. Cap is made of yellow polypropylene.

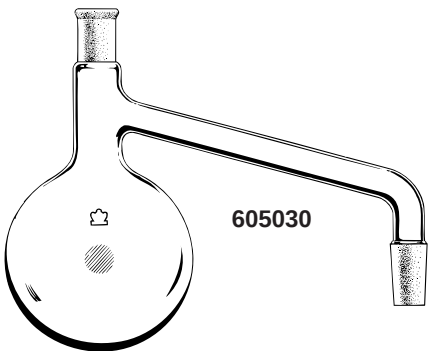
Kimble Article No.	Case Qty.	Case Price
26015C-125	1	61.17

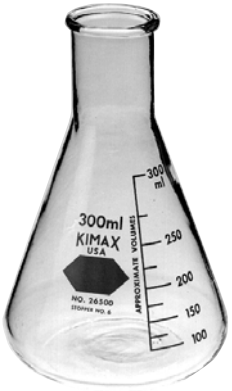


Flask and thermometer not included.

Distilling, with Side Arm

Kontes Article No.	Capacity (mL)	Joints	Case Qty.	Case Price
605030-1524	1000	24/40	1	99.96





26500

Erlenmeyer, Narrow Mouth, Reinforced Beaded Top, with Capacity Scale

KIMAX flasks for economy and versatility. These flasks are the choice for general laboratory usage. Tops are reinforced and tooled with a rounded finish, containing more glass to give them maximum mechanical strength. Body is thick walled with a long tapered outside contour to minimize chipping when struck or rubbed together. All flasks have durable white ceramic enamel scales to indicate approximate volumes at various levels, useful in measuring and mixing solutions where a high degree of accuracy is not necessary. Designed from ASTM Specification E1404, Type I, Class 1 requirements.

Kimble Article No.	Cap. (mL)	Graduated Interval (mL)	Subdiv. (mL)	Rubber Stopper Size	Approx. Widest Dia. (mm)	Approx. Height (mm)	Shelf-Pack Qty.	Case Qty.	Case Price
26500-25	25	10 to 25	5	0	39	65	12	48	180.00
26500-50	50	20 to 50	10	1	50	78	12	48	180.00
26500-125	125	50 to 125	25	5	66	108	12	48	171.84
26500-250	250	50 to 225	25	6	82	130	12	48	178.08
26500-300	300	100 to 300	25	6	88	140	12	48	221.28
26500-500	500	100 to 500	50	7	102	174	6	36	168.48
26500-1000	1000	250 to 1000	50	9	128	213	6	24	182.40
26500-2000	2000	600 to 2000	100	10	161	275	4	8	141.76
26500-4000	4000	1000 to 4000	250	10	208	355	–	1	224.72
26500-6000	6000	1500 to 6000	500	10	241	395	–	1	413.24



26520

Erlenmeyer Starter Pack

An assortment of popular size Erlenmeyer flasks from our 26500 series. The pack consists of 5 flasks (one each) in sizes of 50, 125, 250, 500 and 1000 mL. Ideal for start-up requirements and customers who need a variety of Erlenmeyers but have limited lab space and glassware needs.

Kimble Article No.	Cap. (mL)	Graduated Interval (mL)	Subdiv. (mL)	Rubber Stopper Size	Approx. Widest Dia. (mm)	Approx. Height (mm)	Case Qty.	Case Price
26520-1	50	20 to 50	10	1	50	78	1 of each size	38.02
	125	50 to 125	25	5	66	108		
	250	50 to 225	25	6	81	130		
	500	100 to 500	50	7	102	174		
	1000	250 to 1000	50	9	128	213		

Screened In Colors – Blue, Green, Yellow and Red



Erlenmeyer, Narrow Mouth, Color

KIMAX flasks for economy and versatility. All flasks have durable, color, ceramic enamel scales to indicate approximate volumes at various levels. Designed from ASTM Specification E1404, Type I, Class 1 requirements.

—— Kimble Article Nos. ——										
Bright Blue	Cool Green	Sunny Yellow	Raging Red	Cap. (mL)	Grad. Interval (mL)	Subdiv. (mL)	Rubber Stopper Size	Approx. Widest Dia. x Ht. (mm)	Case Qty.	Price
26500B-50	26500G-50	26500Y-50	26500R-50	50	20 to 50	10	1	50x78	12	45.00
26500B-125	26500G-125	26500Y-125	26500R-125	125	50 to 125	25	5	66x108	12	42.96
26500B-250	26500G-250	26500Y-250	26500R-250	250	50 to 225	25	6	82x130	12	44.52
26500B-500	26500G-500	26500Y-500	26500R-500	500	100 to 500	50	7	102x174	6	28.08
26500B-1000	26500G-1000	26500Y-1000	26500R-1000	1000	250 to 1000	50	9	128x213	6	45.60

Erlenmeyer, Filtering, Heavy Wall, with Capacity Scale

KIMAX flask designed to afford maximum strength. Necks are tooled for a uniform stopper fit with a thick flat flange. Without side tubulation. Durable white ceramic enamel scale to indicate approximate volume. 500mL size is designed from ASTM Specification E1406, Type I requirements.

Kimble Article No.	Cap. (mL)	Graduated Interval (mL)	Subdiv. (mL)	Rubber Stopper Size	Approx. Widest Dia. (mm)	Approx. Height (mm)	Case Qty.	Case Price
27050-500	500	150 to 500	50	7	104	190	1	32.05
27050-1000	1000	300 to 1000	50	8	135	238	1	43.53
27050-2000	2000	600 to 2000	100	9	168	300	1	81.15
27050-4000	4000	1000 to 4000	250	12	208	380	1	109.40



27050

Erlenmeyer, Wide Mouth, Heavy-Duty Tooled Top Finish, with Capacity Scale

KIMAX flask with a wide mouth. Designed from ASTM Specification E1404, Type I, Class 2 requirements.

Kimble Article No.	Cap. (mL)	Graduated Interval (mL)	Subdiv. (mL)	Rubber Stopper Size	Approx. Widest Dia. (mm)	Approx. Height (mm)	Shelf-Pack Qty.	Case Qty.	Case Price
26650-125	125	50 to 125	25	6	66	108	12	48	201.12
26650-250	250	50 to 225	25	8	77	130	12	48	214.08
26650-500	500	100 to 500	50	10	97	172	6	36	202.32
26650-1000	1000	250 to 1000	50	11	122	216	6	24	224.88
26650-2000	2000	600 to 2000	200	13	161	265	4	8	140.48



26650

Erlenmeyer, Kontes / Guth Kool-Grip®

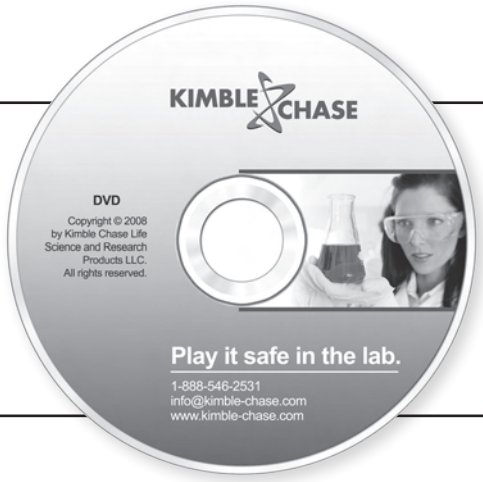
Designed for safety, cork coating is now available on a limited series of standard graduated Erlenmeyer flasks, Kimble series 26500 with narrow mouth, reinforced beaded top and capacity scale. These flasks feature heat-insulating cork which is permanently bonded to borosilicate glassware making them comfortable to handle and secure to hold.

Kontes Article No.	Description	Case Qty.	Case Price
617800-0250	Flask, Erlenmeyer, 250 mL	1	9.79
617800-0500	Flask, Erlenmeyer, 500 mL	1	11.65
617800-1000	Flask, Erlenmeyer, 1000 mL	1	13.70
617800-2000	Flask, Erlenmeyer, 2000 mL	1	15.39



617800

SAFETY 1st

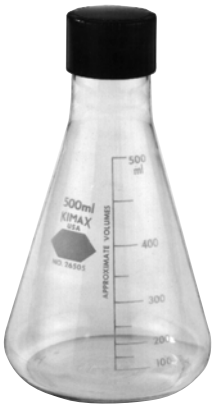


Safety Program - *Play it safe in the lab.*

Our Safety Program discusses the ten basic safety rules of handling glassware as well as the technical properties and physics of glass. Available as a DVD.

Kimble Article No.	Format	Case Qty.	Case Price
99991D-99	DVD	1	23.99

See more safety products in the *SAFETYWARE* section.

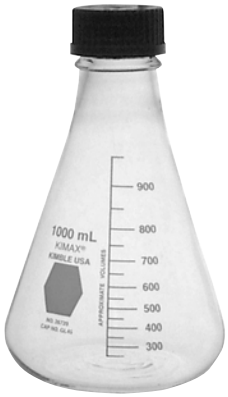


26505

Erlenmeyer, Screw Cap, with Capacity Scale

KIMAX flask with a screw-thread finish. Used to mix and store culture media, and in other culturing techniques. Included are long caps with cemented-in white rubber liners, not attached. Designed from ASTM Specification E1404, Type III requirements. Replacement cap is 45066B.

Kimble Article No.	Cap. (mL)	Graduated Interval (mL)	Subdiv. (mL)	Approx. Widest Dia. (mm)	Approx. Height (mm)	GPI Thread Finish	Shelf-Pack Qty.	Case Qty.	Case Price
26505-50	50	20 to 50	10	50	78	24-410	6	24	411.12
26505-125	125	50 to 125	25	66	115	24-410	6	24	402.72
26505-250	250	50 to 225	25	82	128	28-410	6	24	417.84
26505-500	500	100 to 500	50	102	175	38-430	6	24	427.92
26505-1000	1000	250 to 1000	50	128	215	38-430	6	12	247.68
26505-2000	2000	600 to 2000	100	161	273	38-430	2	8	292.80



26720

Erlenmeyer, GL 45 with Large Opening and Capacity Scale

These KIMAX Erlenmeyer Flasks have large opening, GL 45 thread closures to make filling easier and provide tight seals during storage. Flasks come with blue polypropylene caps and clear seal rings. Marking spots and scales are durable white ceramic enamel.

Kimble Article No.	Capacity (mL)	Approx. Widest Dia. (mm)	Approx. Widest Height with Cap (mm)	GPI Thread Finish	Case Qty.	Case Price
26720-500	500	102	165	GL 45	6	227.82



617310

Erlenmeyer, Plastic Safety Coated, with Screw Cap

These KIMAX Erlenmeyer Flasks have large openings, GL 45 thread closures to make filling easier and provide tight seals during storage. Flasks come with blue polypropylene caps and clear pour rings. Marking spots and scales are durable white ceramic enamel.

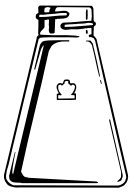
Kontes Article No.	Capacity (mL)	Approx. Widest Dia. (mm)	Approx. Height with Cap (mm)	GPI Thread Finish	Case Qty.	Case Price
617310-0250	250	81	130	GL 45	1	34.34
617310-0500	500	102	165	GL 45	1	35.62
617310-1000	1000	128	205	GL 45	1	44.76
617310-2000	2000	161	265	GL 45	1	58.72

See more safety products in the ***SAFETYWARE*** section.

Erlenmeyer, MICROFLEX®, Threaded

Erlenmeyer flask without graduations. See 410116 for accessory cap and 774161 for septum.

Kontes Article No.	Cap. (ml)	GPI Thread	Approx. Overall Height (mm)	Case Qty.	Case Price
747530-0520	5	20-400	32	1	10.57
747530-1020	10	20-400	45	1	10.57
747530-1520	15	20-400	48	1	12.27
747530-2520	25	20-400	60	1	12.27

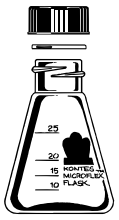


747530

Erlenmeyer, MICROFLEX®, Screw Cap

Graduated flask useful for sample collection, derivatization reactions, extractions, sample storage, micro mixing, etc. Supplied with open top phenolic cap and PTFE-lined silicone septum. See 410116 for replacement cap and 774161 for septum.

Kontes Article No.	Cap. (ml)	GPI Thread	Graduations x Subdiv.(ml)	Case Qty.	Case Price
749400-0025	25	20-400	10-25 x 5	12	127.88



749400

Erlenmeyer, ⅋ Pennyhead Stopper, with Capacity Scale

KIMAX flask with a ⅋ ground glass stopper neck finish. Stopper is included. Heights shown below are without the stopper. Designed from ASTM Specification E1404, Type II, Class 2 requirements. **Replacement stopper is 41900R (glass), 41901R (PTFE) or 28160R (poly).**

Kimble Article No.	Cap. (mL)	Graduated Interval (mL)	Subdiv. (mL)	⅋ Stopper	Approx. Widest Dia. (mm)	Approx. Height (mm)	Shelf-Pack Qty.	Case Qty.	Case Price
26600-25	25	10 to 25	5	16	39	62	2	12	212.40
26600-50	50	20 to 50	10	19	50	76	2	12	206.40
26600-125	125	50 to 125	25	22	66	118	2	12	245.28
26600-250	250	50 to 225	25	27	82	132	2	12	294.48
26600-500	500	100 to 500	50	32	102	159	2	8	243.52
26600-1000	1000	250 to 1000	50	32	128	203	1	6	234.60

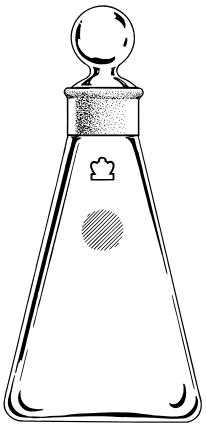


26600

Erlenmeyer, with ⅋ Outer Joint and Pennyhead Stopper

Single neck flask with a 850100 pennyhead stopper.

Kontes Article No.	Cap. (mL)	Stopper ⅋ Size	Approx. Overall Height (mm)	Case Qty.	Case Price
616500-0025	25	16	82	1	23.69
616500-0050	50	19	99	1	24.50
616500-0125	125	22	138	1	28.95
616500-0250	250	27	167	1	38.09
616500-0500	500	32	197	1	41.16
616500-1000	1000	32	243	1	45.88



616500

Erlenmeyer, RAY-SORB®, Color-Coded PTFE ⅋ Stopper

KIMAX flask RAY-SORB processed to protect solutions sensitive to light of the shorter wavelengths. Designed from ASTM Specification E 1404, Type II, Class 2 requirements. Without a capacity scale. **Replacement stopper is 41901R.**

Kimble Article No.	Capacity (mL)	⅋ Stopper	Stopper Color	Approx. Widest Dia. (mm)	Approx. Height (mm)	Case Qty.	Case Price
26610-50	50	19	green	50	76	1	54.50
26610-125	125	22	yellow	66	118	1	58.75
26610-250	250	27	red	82	132	1	64.45
26610-500	500	32	grey	102	159	1	61.15



Red-tinted, glassware blocks harmful UV.

See more red-tinted glassware under ***RAY-SORB® WARE***.

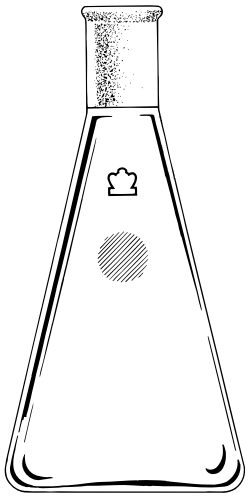


26510

Erlenmeyer, Narrow Mouth, ⅋ Joint, with Capacity Scale

KIMAX flask with a full length ⅋ ground glass neck finish. Designed from ASTM Specification E1404, Type II, Class 1 requirements.

Kimble Article No.	Cap. (mL)	Graduated Interval (mL)	Subdiv. (mL)	⅋ Joint	Approx. Widest Dia. (mm)	Approx. Height (mm)	Shelf-Pack Qty.	Case Qty.	Case Price
26510-50	50	20 to 50	10	19/38	50	105	6	12	310.56
26510-125	125	50 to 125	25	24/40	66	133	6	12	223.80
26510-250	250	50 to 225	25	24/40	82	155	6	12	229.44
26510-500	500	100 to 500	50	24/40	102	191	6	12	239.40
26510-1000	1000	250 to 1000	50	24/40	128	230	2	12	333.84
26510-2000	2000	600 to 2000	100	24/40	161	288	-	1	48.21

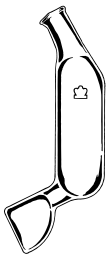


296500
296510
617000

Erlenmeyer, with ⅋ Joint

Single neck flask with a ⅋ outer joint.

Kontes Article No.	Capacity (mL)	⅋ Joint	Approx. Overall Height (mm)	Case Qty.	Case Price
296500-0005	5	14/20	41	1	21.27
296500-0010	10	14/20	55	1	21.27
296500-0015	15	14/20	55	1	21.27
296500-0025	25	14/20	68	1	22.18
296500-0050	50	14/20	85	1	18.02
296500-0100	100	14/20	112	1	18.67
296500-0125	125	14/20	112	1	18.79
296510-0025	25	19/22	60	1	19.05
296510-0050	50	19/22	80	1	19.45
296510-0100	100	19/22	112	1	19.82
296510-0125	125	19/22	112	1	25.32
296510-0250	250	19/22	150	1	25.32
617000-0124	50	24/40	90	1	23.63
617000-0224	125	24/40	125	1	23.63
617000-0424	250	24/40	155	1	24.15
617000-0524	300	24/40	165	1	24.15
617000-0624	500	24/40	200	1	25.32
617000-0724	1000	24/40	230	1	29.23
617000-0824	2000	24/40	293	1	37.19
617000-1024	4000	24/40	335	1	95.54
617000-1124	6000	24/40	400	1	128.54
617000-0229	125	29/42	125	1	26.78
617000-0429	250	29/42	150	1	27.44
617000-0629	500	29/42	200	1	28.26
617000-0729	1000	29/42	230	1	33.37
617000-0829	2000	29/42	294	1	42.25
617000-0834	2000	34/45	290	1	48.97
617000-0645	500	45/50	175	1	47.10
617000-0745	1000	45/50	215	1	56.25
617000-0845	2000	45/50	275	1	56.92
617000-1045	4000	45/50	342	1	88.52
617000-1145	6000	45/50	410	1	149.37



617600

Fat Extraction

Primarily used to determine fat content in dairy products but may also be used for other food products. Settling chamber at the lower portion has a capacity of approximately 25 mL; the extraction chamber has a diameter of 35 mm. Top opening has a pouring lip and is tooled for a #0 rubber stopper.

Kontes Article No.	Capacity (mL)	Approx. Overall Height x Width (mm)	Case Qty.	Case Price
617600-0025	25	80 x 192	1	54.51

Ref: Method of Analysis-Fourteenth Edition

Filtering, Heavy Wall, Side Tubulation, with Capacity Scale

KIMAX flask with side tubulation. Flasks are designed to take 1 atmosphere of vacuum or 29" of mercury. All sizes have side hose connection designed to accept 5/16 inch I.D. flexible tubing. Designed from ASTM Specification E1406, Type II, Class I requirements. Made with a heavier wall than a standard Erlenmeyer flask.

Kimble Article No.	Cap. (mL)	Graduated Interval (mL)	Subdiv. (mL)	Rubber Stopper Size	Approx. Widest Dia. (mm)	Approx. Height (mm)	Shelf-Pack Qty.	Case Qty.	Case Price
27060-25	25	5 to 25	5	3	40	74	6	18	344.34
27060-50	50	20 to 50	10	4	48	81	6	18	344.34
27060-100	100	25 to 100	25	5	65	105	6	18	359.64
27060-125	125	50 to 125	25	5	69	111	6	18	359.64
27060-250	250	50 to 250	25	6	83	163	6	18	264.78
27060-500	500	150 to 500	50	7	104	190	6	18	463.50
27060-1000	1000	300 to 1000	50	8	135	238	6	12	487.68
27060-2000	2000	600 to 2000	100	9	168	300	1	12	968.64
27060-4000	4000	1000 to 4000	250	12	208	380	1	6	711.42

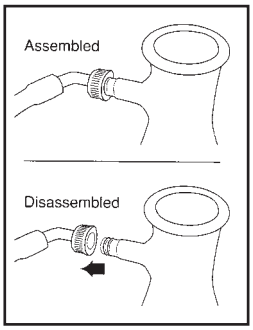


27060

Filtering, Heavy Wall, Quick-Release Hose Barb Connector, with Capacity Scale

KIMAX flask, ASTM E1406, Type II, Class II, with a quick-release connector designed as a safety feature to accommodate standard 1/4 inch I.D. tubing, not included. Tubing can remain permanently attached since the opposite end is designed to be easily assembled via a positive threaded seal. Proper positioning of the connector provides greater flask stability as tubing angled downward has less tendency to tilt the flask. Flasks are designed to take 1 atmosphere of vacuum or 29" of mercury. Made with a heavier wall than a standard Erlenmeyer flask.

Kimble Article No.	Cap. (mL)	Graduated Interval (mL)	Subdiv. (mL)	Rubber Stopper Size	Approx. Widest Dia. (mm)	Approx. Height (mm)	Shelf-Pack Qty.	Case Qty.	Case Price
27070-250	250	50 to 250	25	6	83	163	-	2	42.06
27070-500	500	150 to 500	50	7	104	190	2	8	250.16
27070-1000	1000	300 to 1000	50	8	135	238	-	1	51.30
27070-2000	2000	600 to 2000	100	9	168	300	-	1	89.75
27070-4000	4000	1000 to 4000	250	12	208	380	-	1	118.92





27070

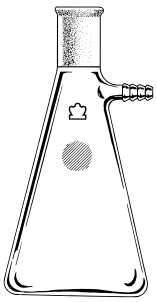
Filtering, Heavy Wall, Detachable Plastic Sidearm, with Capacity Scale

KIMAX flask with an autoclavable plastic sidearm, designed to accept 5/16 inch I.D. flexible tubing (U.S. Patent 3,268,300). Sidearm has two ears to provide a finger grip for easy insertion into a neoprene grommet by turning the plastic piece. Sidearm is bent to reduce the tendency of the rubber hose to overturn the empty flask. Opening in the sidearm is larger at the flask end to hold a cotton plug securely. All flasks have durable white ceramic enamel scales to indicate approximate volumes at various levels. Designed from ASTM Specification E1406, Type III, Class 2 requirements.

Kimble Article No.	Cap. (mL)	Graduated Interval (mL)	Subdiv. (mL)	Rubber Stopper Fit	Approx. Widest Dia. (mm)	Approx. Height (mm)	Shelf-Pack Qty.	Case Qty.	Case Price
27065-250	250	50 to 250	25	6	83	163	2	18	466.20
27065-500	500	150 to 500	50	7	104	190	2	18	670.14
27065-1000	1000	300 to 1000	50	8	135	238	2	12	713.52
27065-2000	2000	600 to 2000	200	9	168	300	1	6	607.38
27065-4000	4000	1000 to 4000	250	12	208	380	1	4	475.68



27065

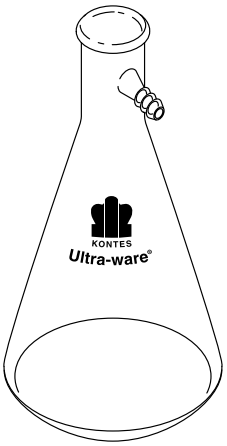


617500

Filtering, Heavy Wall

Heavy wall construction to assure good mechanical strength under vacuum application. Unit is provided with a ⅋ outer joint and a serrated hose connector.

Kontes Article No.	Capacity (mL)	Outer ⅋ Joint	Hose Connection	Approx. Overall Height (mm)	Case Qty.	Case Price
617500-0003	250	24/40	#2	160	1	68.85
617500-0005	500	24/40	#2	200	1	78.30

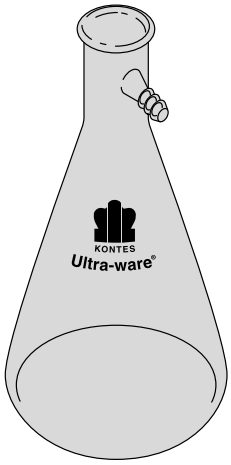


953710
953760

Filtering, Heavy Wall, with Rubber Stopper Joint

This flask is manufactured from heavy wall borosilicate glass to assure the mechanical strength needed for vacuum filtration. The side arm accepts standard 1/4" (6 mm) I.D. tubing for connection to vacuum sources. A second flask should be connected between the filtering flask and the vacuum source to prevent accidental entry of the filtrate into the vacuum line or pump.

Kontes Article No.	Description	Case Qty.	Case Price
953710-0000	Flask, 125 mL, #5 Rubber Stopper Joint, #2 Hose Connection	1	28.42
953760-0000	Flask, 1000 mL, #8 Rubber Stopper Joint, #2 Hose Connection	1	50.73
953760-2000	Flask, 2000 mL, #8 Rubber Stopper Joint, #2 Hose Connection	1	86.70
953760-4000	Flask, 4000 mL, #8 Rubber Stopper Joint, #2 Hose Connection	1	126.15



953760

Filtering, Plastic Safety Coated

These erlenmeyer style flasks are manufactured from heavy-wall borosilicate glass to assure the mechanical strength needed for vacuum filtration. For added safety, Kontes' plastic safety coating is chemically bonded to the glass. The plastic safety coating is steam autoclavable to 135 °C. The 125 mL flask has a No. 5 stopper joint. The 1, 2 and 4 liter flasks have a No. 8 stopper joint. All flasks have a #2 side arm for connection to 1/4" (6 mm) I.D. flexible tubing.

Kontes Article No.	Description	Case Qty.	Case Price
953760-0122	Filter Flask, Coated, 125 mL	1	56.86
953760-1002	Filter Flask, Coated, 1L	1	97.72
953760-2002	Filter Flask, Coated, 2L	1	142.14
953760-4002	Filter Flask, Coated, 4L	1	173.39



27200



41906R

Iodine, with PTFE Stopper

KIMAX 250 mL is flask used in the analysis of dry shellac and shellac varnishes with Wijs iodine monochloride solution and may be used to determine the total iodine value of oils, fatty acids and bodied oils with Rosenmund-Kuhnhenn reagent (ASTM D 1541). The 500 mL is used in the testing of drying oils for use in paints and varnishes, either with Wijs solution or with Hanus iodine-bromine solution (ASTM D 555). Heights shown below are without stopper. Designed from ASTM Specification E1404, Type II, Class 3 requirements.

Kimble Article No.	Capacity (mL)	⅋ Stopper	Approx. Widest Dia. (mm)	Approx. Height (mm)	Shelf-Pack Qty.	Case Qty.	Case Price
27200-125	125	22	66	124	2	12	427.56
27200-250	250	22	82	160	2	8	329.76
27200-500	500	22	102	195	2	6	297.84

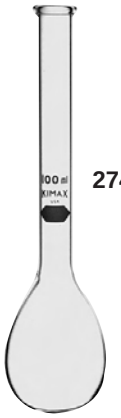
Replacement Part

Kimble Article No.	Description	Approx. Height Above ⅋ Zone	Case Qty.	Case Price
41906R-22	Stopper Only, ⅋ 22, Yellow Handle, PTFE	43 mm	6	98.22

Kjeldahl, Tooled Neck

KIMAX flasks have a reinforced bead at the top. The 500 and 800 mL sizes have tooled necks to provide an accurate stopper fit and to reduce the possibility of breakage in use. The 500 and 800 mL size necks are tooled to take rubber stoppers especially made for Kjeldahl flasks. The 10 and 30 mL are designed from ASTM Specification E147 and larger sizes are designed from ASTM Specification E1377, Type I requirements.

Kimble Article No.	Capacity (mL)	Approx. Height (mm)	Rubber Stopper Size	Shelf-Pack Qty.	Case Qty.	Case Price
27400-30	30	178	0	6	18	292.68
27400-100	100	210	1	6	24	323.76
27400-500	500	320	6*	6	24	460.56
27400-800	800	365	7*	6	18	314.64



27400

Accessory Cylindrical Connecting Bulb

KIMAX connecting bulb was designed following the suggestions of end users. Lower tube is 11-12 mm O.D. to fit special kjeldahl stoppers. Both the upper and lower tips inside the bulb are arranged so that counterflow of liquid and vapor is not impeded when the bulb is inclined to the rear.

Kimble Article No.	Approx. Bulb Dia. (mm)	Approx. Bulb Length (mm)	Case Qty.	Case Price
16040-55	55	120	1	107.14



16040

*Sizes tooled to take commercially available rubber stoppers especially made for Kjeldahl flasks.

Kjeldahl, Heavy Wall

Kjeldahl flask with a ⅌ outer joint at top.

Kontes Article No.	Capacity (mL)	⅌ Joint	Approx. Overall Height (mm)	Case Qty.	Case Price
742000-1024	100	24/40	210	1	37.05
742000-3024	300	24/40	300	1	37.71
742000-5024	500	24/40	325	1	40.73
742000-5029	500	29/42	330	1	41.25
742000-8024	800	24/40	340	1	42.84
742000-8029	800	29/42	370	1	43.88

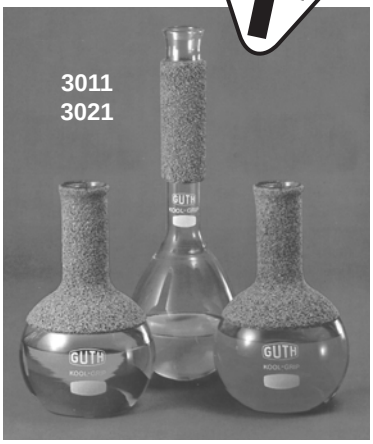


742000

Kjeldahl and Boiling Flasks, Kontes / Guth KOOL-GRIP®

All flasks feature rugged heat insulating cork jackets which are permanently bonded to borosilicate glassware. The texture and composition of the jackets make KOOL-GRIP flasks comfortable to handle and secure to hold.

Kontes Article No.	Description	Case Qty.	Case Price
3021-800	KOOL-GRIP Kjeldahl Flask 500 mL	1	58.98
3011-500	KOOL-GRIP Flask 500 mL	1	38.22
3011-1000	KOOL-GRIP Flask 1 L	1	46.57

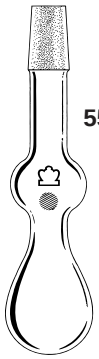


See more safety products in the ***SAFETYWARE*** section.

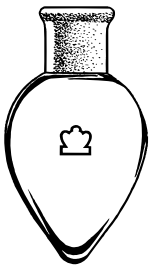
Kjeldahl Digestion / Distillation Flask

Dual purpose flask can be used in 551100 distillation apparatus. ⅌ 24/40 allows connection to the distillation assembly following the digestion process, thus saving a transfer. Flask design includes an expansion bulb as a guard against bumping and foaming during digestion. The 30 mL flask has a three bulb configuration. Also allows a more vigorous introduction of steam during distillation.

Kontes Article No.	Cap. (mL)	⅌ Joint	Approx. Overall Height x Width (mm)	Case Qty.	Case Price
551600-0030	30	24/40	210 x 40	1	33.49
551600-0100	100	24/40	210 x 52	1	34.57



551600



294250
294260
608700

Pear-Shaped, Boiling, Heavy Wall

Single neck flask with a ⧩ outer joint at top.

Kontes Article No.	Capacity (mL)	⧩ Joint	Case Qty.	Case Price
294250-0005	5	14/20	1	24.01
294260-0005	5	19/22	1	24.39
294250-0010	10	14/20	1	24.01
294260-0010	10	19/22	1	24.39
294250-0015	15	14/20	1	24.01
294260-0015	15	19/22	1	24.39
294250-0025	25	14/20	1	24.01
294260-0025	25	19/22	1	24.39
294250-0035	35	14/20	1	24.01
294260-0035	35	19/22	1	24.39
294250-0050	50	14/20	1	24.01
294260-0050	50	19/22	1	24.39
608700-0124	50	24/40	1	29.61
294250-0075	75	14/20	1	24.01
294260-0075	75	19/22	1	24.39
294250-0100	100	14/20	1	24.81
294260-0100	100	19/22	1	25.32
608700-0224	100	24/40	1	31.58
608700-0229	100	29/42	1	32.96
608700-0424	200	24/40	1	37.31
294250-0250	250	14/20	1	31.17
294260-0250	250	19/22	1	32.57
608700-2524	250	24/40	1	34.05
608700-2529	250	29/42	1	36.46
608700-0524	300	24/40	1	40.06
608700-0624	500	24/40	1	42.94

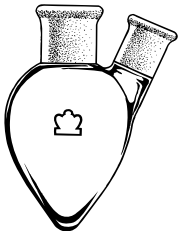


294500

Pear-Shaped, Distilling, with Side Tubulation, Heavy Wall

Two neck flask with a ⧩ outer joint and 7 mm I.D. side tubulation.

Kontes Article No.	Capacity (mL)	⧩ Joint	Case Qty.	Case Price
294500-0010	10	14/20	1	36.47



294750
294760

Pear-Shaped, Distilling, Two Neck, Heavy Wall, with Side Arm

Two neck flask with ⧩ outer joints.

Kontes Article No.	Capacity (mL)	Center ⧩ Joint	Side ⧩ Joint	Case Qty.	Case Price
294750-0010	10	14/20	10/18	1	42.41
294760-0025	25	14/20	14/20	1	38.11
294760-0050	50	14/20	14/20	1	38.11
294760-0100	100	14/20	14/20	1	38.11

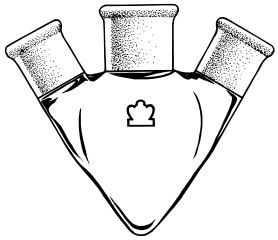


251450

Pear-Shaped, with Side Arm, BEVEL-SEAL™

Flask is designed for vacuum distillations. Threaded sidearm has an open top nylon cap. Cap can be coupled with an o-ring to accommodate a thermometer or a gas inlet tube. A penetrable liner may be used to sample a reaction mixture using a syringe. Supplied complete with one size 010 FKM o-ring and one PTFE-faced silicone liner.

Kontes Article No.	Capacity (mL)	⧩ Joint	Bevel-Seal Size	Approx. Overall Height (mm)	Case Qty.	Case Price
251450-0015	15	14/20	13-425	80	1	50.77



295740
295750

Distilling, Three Neck Pear-Shaped, Heavy Wall

Three neck flask with ⧩ outer joints.

Kontes Article No.	Capacity (mL)	Center ⧩ Joint	Side ⧩ Joint	Case Qty.	Case Price
295740-0025	25	14/20	14/20	1	62.38
295740-0050	50	14/20	14/20	1	62.38

Recovery, Heavy Wall with Standard Joint Bead

Single neck flask with a ⅋ outer joint designed for easy recovery of reaction products. Total contents are accessible with a spatula or policeman. Lower portion fits standard heating mantles.

Kontes Article No.	Capacity (mL)	⅋ Joint	Approx. Dia. (mm)	Case Qty.	Case Price
294300-0010	10	14/20	31	1	19.18
294300-0010	10	19/22	31	1	19.18
294300-0025	25	14/20	42	1	19.18
294305-0025	25	19/22	42	1	19.33
294300-0050	50	14/20	48	1	19.18
294305-0050	50	19/22	48	1	19.33
608675-0124	50	24/25	48	1	25.04
294300-0100	100	14/20	60	1	19.97
294305-0100	100	19/22	60	1	20.08
608675-0224	100	24/25	60	1	25.60
608675-0229	100	29/26	60	1	27.05
294300-0200	200	14/20	76	1	25.84
608675-0324	200	24/25	76	1	32.96
608675-0329	200	29/26	76	1	34.30
608675-0624	500	24/25	102	1	47.47
608675-0629	500	29/26	102	1	50.74
608675-0729	1000	29/26	130	1	64.51
608675-0829	2000	29/26	161	1	88.65

Even wall thickness and minimum runout make these flasks ideal for use with Rotary Evaporators.



294300
294305
608675

Recovery, Heavy Wall, with Square Joint Bead

Single neck flask with a square bead, ⅋ outer joint designed for easy recovery of reaction products. Total contents are accessible with a spatula or policeman. Lower portion fits standard heating mantles.

Kontes Article No.	Capacity (mL)	⅋ Joint	Approx. Dia. (mm)	Case Qty.	Case Price
608675-4124	50	24/40	48	1	24.45
608675-6129	50	29/42	48	1	25.58
608675-4224	100	24/40	60	1	24.83
608675-6229	100	29/42	60	1	25.68
608675-4324	200	24/40	76	1	30.53
608675-6329	200	29/42	76	1	30.32
608675-4624	500	24/40	102	1	47.47
608675-6629	500	29/42	102	1	41.16
608675-4724	1000	24/40	130	1	59.95
608675-6729	1000	29/42	130	1	63.61
608675-4824	2000	24/40	161	1	84.44
608675-6829	2000	29/42	161	1	83.47



608675

Recovery, Heavy Wall, with Square Joint Bead and Plastic Safety Coating

Single neck flask with a ⅋ outer joint designed for easy recovery of reaction products. Total contents are accessible with a spatula or policeman. Lower portion fits standard heating mantles.

Kontes Article No.	Capacity (mL)	⅋ Joint	Case Qty.	Case Price
608685-4124	50	24/40	1	31.72
608685-4224	100	24/40	1	33.27
608685-4324	200	24/40	1	44.90
608685-4624	500	24/40	1	59.25
608685-4724	1000	24/40	1	72.10

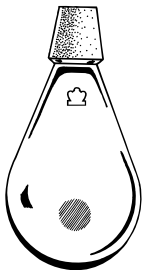


608685

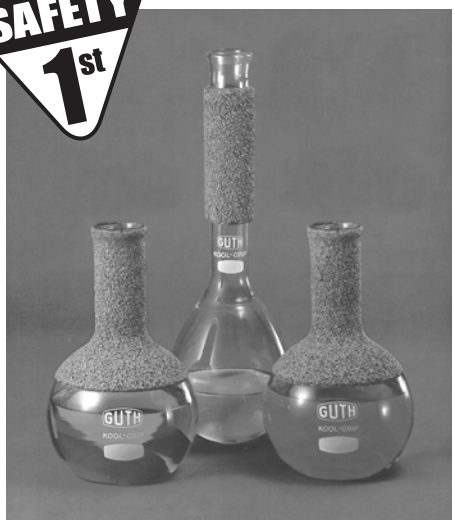
Recovery, with Inner Joint, Heavy Wall

Single neck flask with a ⅋ inner joint for use where grease contamination is undesirable. Total contents are accessible with a spatula or policeman. Lower portion fits standard heating mantles.

Kontes Article No.	Capacity (mL)	⅋ Joint	Approx. Dia. (mm)	Case Qty.	Case Price
294320-0025	25	14/20	42	1	21.27
294320-0050	50	14/20	48	1	21.27
294320-0100	100	14/20	60	1	21.27
608680-4324	200	24/40	76	1	29.61



294320
608680



3011
3021



601500



25000



25055



Red-tinted, glassware blocks harmful UV.

25057

Boiling, Flat Bottom and Kjeldahl, Kontes / Guth Kool-Grip®

All flasks feature rugged heat insulating cork jackets which are permanently bonded to borosilicate glassware. The texture and composition of the jackets make KOOL-GRIP flasks comfortable to handle and secure to hold.

Kontes Article No.	Description	Case Qty.	Case Price
3011-500	Flat Bottom Boiling Flask, KOOL-GRIP, 500 mL	1	38.22
3011-1000	Flat Bottom Boiling Flask, KOOL-GRIP, 1 L	1	46.57

Kontes Article No.	Description	Case Qty.	Case Price
3021-800	Kjeldahl Flask, KOOL-GRIP, 500 mL	1	58.98

Boiling, Flat Bottom, Heavy Wall

Single neck flat bottom flask with a ⅋ outer joint.

Kontes Article No.	Capacity (mL)	⅋ Joint	Approx. Dia. (mm)	Case Qty.	Case Price
601500-0124	50	24/40	48	1	26.10
601500-2124	100	24/40	60	1	26.10
601500-0224	125	24/40	65	1	28.18
601500-0324	250	24/40	83	1	28.18
601500-0329	250	29/42	83	1	28.26
601500-0545	250	45/50	83	1	40.90
601500-0424	300	24/40	87	1	38.81
601500-0429	300	29/42	87	1	37.67
601500-0524	500	24/40	102	1	28.57
601500-0529	500	29/42	102	1	40.78
601500-0624	1000	24/40	130	1	46.95
601500-0629	1000	29/42	130	1	53.77
601500-0645	1000	45/50	130	1	61.16
601500-0824	2000	24/40	161	1	65.15
601500-0829	2000	29/42	161	1	69.81
601500-0845	2000	45/50	161	1	101.10
601500-0929	3000	29/42	185	1	102.40
601500-1024	6000	24/40	234	1	153.55
601500-1029	6000	29/42	234	1	162.31
601500-1045	6000	45/50	234	1	156.34

Boiling, Flat Bottom, Florence, with Reinforced Tooled Top

KIMAX flasks have a low coefficient of expansion to resist thermal shock. They are constructed with sturdy walls to minimize mechanical breakage, and reinforced tooled tops for strength and a secure stopper fit. Designed from ASTM Specification E1403, Type I, Class 1, requirements.

Kimble Article No.	Capacity (mL)	Rubber Stopper Size	Approx. Height (mm)	Approx. O.D. (mm)	Case Qty.	Case Price
25000-500	500	6	182	102	6	62.76
25000-1000	1000	8	215	130	6	78.42
25000-6000	6000	11	365	234	1	81.95

Boiling, Flat Bottom, Short Neck, with ⅋ 24/40 Joint

KIMAX boiling flask with a short ⅋ joint neck. Designed from ASTM Specification E1403, Type I, Class 4 requirements.

Kimble Article No.	Capacity (mL)	Approx. Height (mm)	Approx. O.D. (mm)	Shelf-Pack Qty.	Case Qty.	Case Price
25055-125	125	115	65	1	12	273.36
25055-250	250	133	83	1	12	270.60
25055-300	300	135	87	1	12	411.48
25055-500	500	155	102	1	12	301.32
25055-1000	1000	182	130	1	12	324.84

Boiling, Flat Bottom, Short Neck, RAY-SORB®, Full Length ⅋ 24/40

KIMAX boiling flask is RAY-SORB processed to provide protection to solutions sensitive to light of the shorter wavelengths. Designed from ASTM Specification E1403, Type I, Class 4 requirements.

Kimble Article No.	Capacity (mL)	Approx. Height (mm)	Approx. O.D. (mm)	Case Qty.	Case Price
25057-250	250	133	83	1	73.32

Boiling, Round Bottom, with Reinforced Tooled Top

KIMAX round bottomed boiling flask. Designed from ASTM Specification E1403, Type II, Class 1, requirements.

Kimble Article No.	Capacity (mL)	Rubber Stopper Size	Approx. Height (mm)	Approx. O.D. (mm)	Case Qty.	Case Price
25200-250	250	5	149	83	12	140.04
25200-500	500	6	205	102	6	75.90



25200

Boiling, Round Bottom, Short Neck, ⅋ 14/20 Joint

KIMAX boiling flask with a short neck and a medium length ⅋ joint. Designed from ASTM Specification E1403, Type II, Class 3 requirements. **Joint accepts a 41915R stopper.**

Kimble Article No.	Capacity (mL)	⅋ Joint	Approx. Height (mm)	Approx. O.D. (mm)	Shelf-Pack Qty.	Case Qty.	Case Price
25276-100	100	14/20	93	63	2	12	305.16
25276-250	250	14/20	116	82	2	12	493.68



25276

Boiling, Round Bottom, Short Neck, ⅋ 19/22 Joint

KIMAX boiling flask with a short neck and a medium length ⅋ joint. Designed from ASTM Specification E1403, Type II, Class 3 requirements. **Joint accepts a 41915R stopper.**

Kimble Article No.	Capacity (mL)	⅋ Joint	Approx. Height (mm)	Approx. O.D. (mm)	Shelf-Pack Qty.	Case Qty.	Case Price
25277-100	100	19/22	100	63	2	12	280.68
25277-250	250	19/22	118	82	2	12	373.08
25277-500	500	19/22	142	102	2	12	465.60



25277

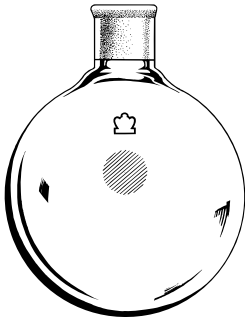
Boiling, Round Bottom, Short Neck, Full Length ⅋ 24/40 Joint

KIMAX boiling flask designed from ASTM Specification E1403, Type II, Class 3 requirements.. **Joint accepts a 41915R stopper.**

Kimble Article No.	Capacity (mL)	⅋ Joint	Approx. Height (mm)	Approx. O.D. (mm)	Shelf-Pack Qty.	Case Qty.	Case Price
25285-50	50	24/40	100	48	2	12	262.92
25285-100	100	24/40	115	63	2	12	251.40
25285-200	200	24/40	130	75	2	12	364.32
25285-250	250	24/40	140	83	2	12	262.92
25285-300	300	24/40	145	88	2	12	371.40
25285-500	500	24/40	160	102	2	12	289.56
25285-1000	1000	24/40	190	130	2	12	328.80
25285-2000	2000	24/40	230	161	1	6	303.96
25285-3000	3000	24/40	255	185	1	6	532.26



25285



294000
294010
601000

Boiling, Round Bottom, Heavy Wall

Single neck flask with a ⅋ outer joint.

Kontes Article No.	Capacity (ml)	⅋ Joint	Approx. Dia. (mm)	Case Qty.	Case Price
294000-0005	5	14/20	25	1	18.32
294010-0005	5	19/22	25	1	18.42
294000-0010	10	14/20	31	1	18.32
294010-0010	10	19/22	31	1	18.42
294000-0015	15	14/20	35	1	21.27
294010-0015	15	19/22	35	1	18.42
294000-0025	25	14/20	42	1	18.32
294010-0025	25	19/22	42	1	18.42
294000-0035	35	14/20	45	1	18.32
294010-0035	35	19/22	45	1	18.42
294000-0050	50	14/20	48	1	18.32
294010-0050	50	19/22	48	1	18.42
601000-0119	50	19/38	48	1	19.25
601000-0124	50	24/40	48	1	18.69
601000-0129	50	29/42	48	1	23.29
294000-0100	100	14/20	64	1	18.32
294010-0100	100	19/22	64	1	18.42
601000-0219	100	19/38	64	1	19.53
601000-0224	100	24/40	64	1	18.69
601000-0229	100	29/42	64	1	23.21
601000-2224	125	24/40	65	1	22.52
601000-2229	125	29/42	65	1	24.67
601000-0324	200	24/40	76	1	23.75
601000-0326D	200	29/26	76	1	25.44
601000-0329	200	29/42	76	1	26.34
294000-0250	250	14/20	83	1	22.01
294010-0250	250	19/22	83	1	23.42
601000-0424	250	24/40	83	1	25.21
601000-0429	250	29/42	83	1	27.50
601000-0524	300	24/40	87	1	25.98
601000-0526D	300	29/26	87	1	28.26
601000-0529	300	29/42	87	1	29.41
294000-0500	500	14/20	102	1	25.69
294010-0500	500	19/22	102	1	26.10
601000-0624	500	24/40	102	1	26.22
601000-0626D	500	29/26	102	1	30.74
601000-0629	500	29/42	102	1	30.74
601000-0645	500	45/50	102	1	45.78
601000-0724	1000	24/40	130	1	32.50
601000-0726D	1000	29/26	130	1	36.15
601000-0729	1000	29/42	130	1	36.15
601000-0734	1000	34/45	130	1	45.73
601000-0745	1000	45/50	130	1	49.34
601000-0755	1000	55/50	130	1	51.98
601000-0824	2000	24/40	161	1	61.39
601000-0826D	2000	29/26	161	1	68.72
601000-0829	2000	29/42	161	1	68.72
601000-0845	2000	45/50	161	1	75.59
601000-0855	2000	55/50	161	1	78.62
601000-0924	3000	24/40	185	1	72.18
601000-0929	3000	29/42	185	1	84.54
601000-0934	3000	34/45	185	1	94.32
601000-0945	3000	45/50	185	1	96.32
601000-0955	3000	55/50	185	1	101.71
601000-1024	5000	24/40	221	1	101.47
601000-1029	5000	29/42	221	1	108.31
601000-1045	5000	45/50	221	1	114.24
601000-1055	5000	55/50	221	1	115.82
601000-1145	12000	45/50	295	1	177.98
601000-1155	12000	55/50	295	1	188.45
601000-1245	22000	45/50	347	1	368.61
601000-1255	22000	55/50	347	1	371.50
601000-1345	50000	45/50	460	1	857.49
601000-1355	50000	55/50	460	1	857.49
601000-1445	72000	45/50	520	1	1,187.29
601000-1455	72000	55/50	520	1	1,187.29

Boiling, Round Bottom with Hooks, Heavy Wall

Single neck flask with a ⅋ outer joint and hooks.

Kontes Article No.	Capacity (mL)	⅋ Joint	Approx. Dia. (mm)	Case Qty.	Case Price
287802-0000	15	14/20	35	1	24.01
536003-0000	50	24/40	48	1	33.27
535752-0000	250	24/40	83	1	32.37

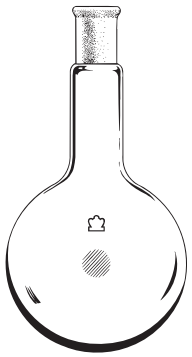


287802
535752
536003

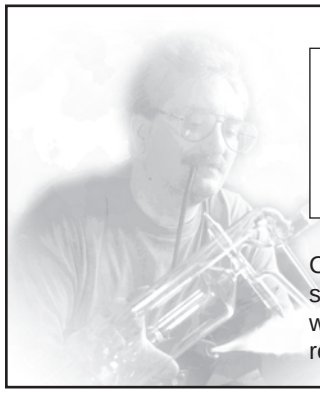
Boiling, Long Neck Round Bottom, Heavy Wall

Single long neck flask with a ⅋ outer joint.

Kontes Article No.	Capacity (mL)	⅋ Joint	Approx. Dia. (mm)	Approx. Overall Height (mm)	Case Qty.	Case Price
296250-0010	10	14/20	31	73	1	24.01
296250-0025	25	14/20	42	87	1	24.01
296250-0050	50	14/20	48	97	1	24.01
601010-0124	50	24/40	48	125	1	25.04
601010-0129	50	29/42	48	125	1	26.38
296250-0100	100	14/20	60	140	1	21.92
601010-0224	100	24/40	60	140	1	25.04
601010-0229	100	29/42	60	140	1	27.32
601010-2224	125	24/40	65	145	1	25.69
601010-2229	125	29/42	65	145	1	27.44
601010-2524	150	24/40	70	155	1	25.98
601010-2529	150	29/42	70	155	1	27.73
601010-0324	200	24/40	76	165	1	43.90
601010-0329	200	29/42	76	165	1	28.66
601010-0424	250	24/40	83	175	1	27.81
601010-0429	250	29/42	83	180	1	27.73
601010-0524	300	24/40	87	180	1	28.57
601010-0529	300	29/42	87	185	1	32.96
601010-0624	500	24/40	102	210	1	29.61
601010-0629	500	29/42	102	215	1	31.88
601010-0724	1000	24/40	130	250	1	34.45
601010-0729	1000	29/42	130	255	1	40.32
601010-0824	2000	24/40	161	310	1	56.82
601010-0829	2000	29/42	161	310	1	94.68
601010-0924	3000	24/40	185	320	1	80.27
601010-0929	3000	29/42	185	320	1	102.55
601010-1024	5000	24/40	221	365	1	95.18
601010-1029	5000	29/42	221	365	1	140.21

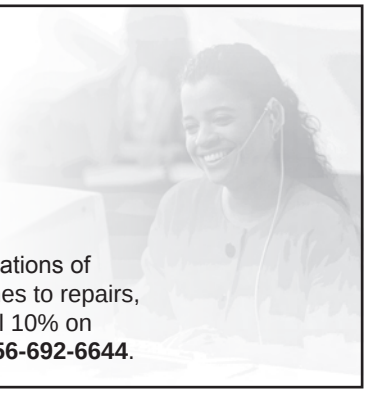


296250
601010

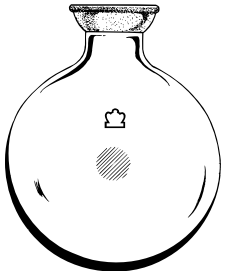


- **Custom Fabrications**
- **Quality Repairs**
- **Modifications of All Kinds**
- **No Order Too Small**
- **Quick Turnaround**

KONTES
custom glass shop
*call toll-free **800-682-6644***
customglass@kimble-chase.com



Contact the **Kontes Custom Glass Shop** at KIMBLE CHASE for modifications of standard products or fabrication of your unique designs. And when it comes to repairs, we can save you up to 75% of the cost of a new item. Save an additional 10% on repairs of Kontes or Kimble Brand products. Fax your requirements to **856-692-6644**.



601050

Boiling, Round Bottom, with $ Joint, Heavy Wall

Single neck flask with a $ socket joint. Useful as rotary evaporator condensate collection flask or as a replacement for European designation KS 20/35.

Kontes Article No.	Capacity (mL)	$ Joint	Approx. Dia. (mm)	Case Qty.	Case Price
601050-0128	50	28/15	48	1	29.46
601050-0136	50	35/25	48	1	30.15
601050-0228	100	28/15	60	1	29.46
601050-0235	100	35/20	60	1	29.46
601050-0236	100	35/25	60	1	30.01
601050-0428	250	28/15	83	1	30.15
601050-0436	250	35/25	83	1	32.70
601050-0536	300	35/25	87	1	31.99
601050-0628	500	28/15	102	1	31.64
601050-0635	500	35/20	102	1	34.64
601050-0636	500	35/25	102	1	41.10
601050-0728	1000	28/15	130	1	38.83
601050-0735	1000	35/20	130	1	41.63
601050-0736	1000	35/25	130	1	50.07
601050-0828	2000	28/15	161	1	65.60
601050-0835	2000	35/20	161	1	71.55
601050-0836	2000	35/25	161	1	71.55
601050-0850	2000	50/30	161	1	80.72
601050-0928	3000	28/15	185	1	75.07
601050-0935	3000	35/20	185	1	84.10
601050-0936	3000	35/25	185	1	84.37
601050-0950	3000	50/30	185	1	88.81
601050-1028	5000	28/15	221	1	105.34
601050-1036	5000	35/25	221	1	110.46
601050-1050	5000	50/30	221	1	120.98
601050-1065	5000	65/40	221	1	125.66
601050-1150	12000	50/30	295	1	173.59
601050-1165	12000	65/40	295	1	170.65
601050-1250	22000	50/30	347	1	305.56
601050-1265	22000	65/40	347	1	305.56

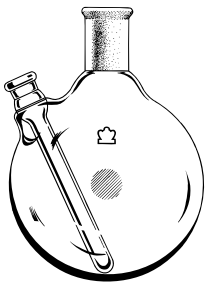


601055

Boiling, Round Bottom, $ Joint, Plastic Safety Coating, Heavy Wall

Single neck flask with a $ socket joint. Useful as rotary evaporator condensate collection flask or as a replacement for European designation KS 20/35.

Kontes Article No.	Capacity (mL)	$ Joint	Approx. Dia. (mm)	Case Qty.	Case Price
601055-0236	100	35/20	60	1	38.52
601055-0436	250	35/25	83	1	52.19
601055-0636	500	35/25	102	1	62.51
601055-0736	1000	35/25	130	1	84.82
601055-0836	2000	35/25	161	1	93.55

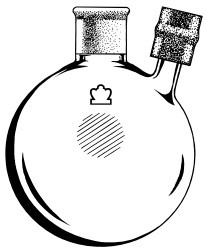


285605

Boiling, Round Bottom with $ Center Neck and Thermometer Well

Side well designed to accommodate a thermometer of choice.

Kontes Article No.	Capacity (mL)	$ Joint	Case Qty.	Case Price
285605-0000	100	14/20	1	37.39



294410

Distilling, Round Bottom, $ Center Neck with Side $ Tubulation, Heavy Wall

Side tubulation has one 773900 rubber adapter with a 1/4” hole for access with thermometers or gas inlet tubes.

Kontes Article No.	Capacity (mL)	$ Joint	Approx. Dia. (mm)	Case Qty.	Case Price
294410-0000	250	19/22	83	1	36.47

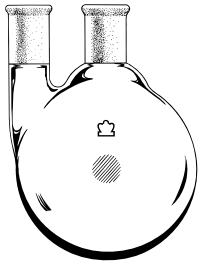
Replacement Part

773900-0000	Rubber Adapter, Pkg./12	12	22.69

Distilling, Two Neck Round Bottom, Heavy Wall

Two neck flask with ⅋ outer joints on both vertical necks.

Kontes Article No.	Capacity (mL)	Center ⅋ Joint	Side ⅋ Joints	Approx. Dia. (mm)	Case Qty.	Case Price
605000-0224	100	24/40	24/40	60	1	59.61
605000-0624	250	24/40	24/40	83	1	60.38
605000-1024	500	24/40	24/40	102	1	62.42
605000-1224	500	34/45	24/40	102	1	60.43
605000-1424	1000	24/40	24/40	130	1	76.63
605000-1529	1000	29/42	29/42	130	1	82.43
605000-1624	1000	34/45	24/40	130	1	82.43
605000-1824	2000	24/40	24/40	161	1	95.49
605000-1924	2000	29/42	24/40	161	1	111.74
605000-2024	2000	34/45	24/40	161	1	106.92
605000-2524	3000	45/50	24/40	181	1	152.05

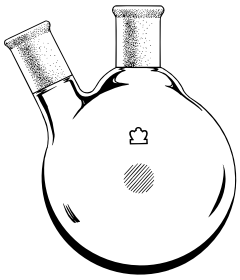


605000

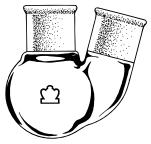
Distilling, Two Neck Round Bottom, Heavy Wall

Two neck flask with ⅋ outer joints. Side neck is angled.

Kontes Article No.	Capacity (mL)	Center ⅋ Joint	Side ⅋ Joints	Approx. Dia. (mm)	Case Qty.	Case Price
294990-0010	10	14/20	14/20	31	1	39.40
294990-0015	15	14/20	14/20	35	1	41.08
295000-0015	15	19/22	14/20	35	1	42.60
295010-0015	15	19/22	19/22	35	1	42.60
294990-0025	25	14/20	14/20	42	1	41.08
295000-0025	25	19/22	14/20	42	1	42.60
295010-0025	25	19/22	19/22	42	1	42.60
294990-0050	50	14/20	14/20	48	1	41.08
295000-0050	50	19/22	14/20	48	1	42.60
295010-0050	50	19/22	19/22	48	1	42.60
294990-0100	100	14/20	14/20	60	1	41.08
295000-0100	100	19/22	14/20	60	1	42.60
295010-0100	100	19/22	19/22	60	1	42.60
605020-0210	100	24/40	10/30	60	1	53.25
605020-0224	100	24/40	24/40	60	1	59.61
294990-0250	250	14/20	14/20	83	1	44.65
295000-0250	250	19/22	14/20	83	1	45.41
295010-0250	250	19/22	19/22	83	1	46.83
605020-0610	250	24/40	10/30	83	1	56.52
605020-0624	250	24/40	24/40	83	1	60.38
605020-4810	250	29/42	10/30	83	1	59.37
605020-4824	250	29/42	24/40	83	1	62.91
294990-0500	500	14/20	14/20	102	1	45.28
295000-0500	500	19/22	14/20	102	1	46.20
295010-0500	500	19/22	19/22	102	1	53.29
605020-1010	500	24/40	10/30	102	1	58.08
605020-1110	500	29/42	10/30	102	1	59.61
605020-1024	500	24/40	24/40	102	1	62.42
605020-1124	500	29/42	24/40	102	1	65.16
605020-0019	1000	19/38	19/38	130	1	73.40
605020-1410	1000	24/40	10/30	130	1	67.54
605020-1419	1000	24/40	19/38	130	1	74.66
605020-1424	1000	24/40	24/40	130	1	76.63
605020-1524	1000	29/42	24/40	130	1	73.33
605020-1824	2000	24/40	24/40	161	1	97.87
605020-1924	2000	29/42	24/40	161	1	107.66
605020-2224	3000	24/40	24/40	185	1	123.46
605020-2324	3000	29/42	24/40	185	1	130.28
605020-2624	5000	24/40	24/40	221	1	128.54
605020-2924	5000	45/50	24/40	221	1	157.81



605020



294990
295000
295010

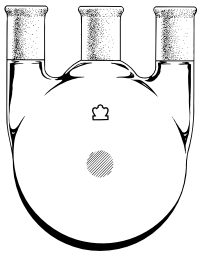


26246

Distilling, Three Neck, Round Bottom, Full Length $ 24/40 Joints

KIMAX flask with a center neck that extends above the side necks. Designed from ASTM Specification E1378, Type III requirements.

Kimble Article No.	Capacity (mL)	$ Joints	Approx. Height (mm)	Case Qty.	Case Price
26246-250	250	24/40	140	1	116.16
26246-500	500	24/40	160	1	144.68

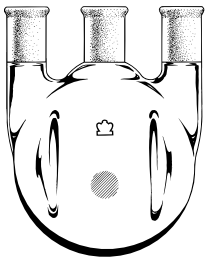


606000

Distilling, Three Neck, Round Bottom, Heavy Wall

Three neck round bottom flask with $ outer joints. Side necks are vertical.

Kontes Article No.	Capacity (mL)	Center $ Joint	Side $ Joints	Approx. Dia. (mm)	Case Qty.	Case Price
606000-0224	100	24/40	24/40	60	1	84.44
606000-0624	250	24/40	24/40	83	1	84.44
606000-4824	250	29/42	24/40	83	1	87.74
606000-4829	250	29/42	29/42	83	1	87.74
606000-1024	500	24/40	24/40	102	1	86.49
606000-1124	500	29/42	24/40	102	1	91.43
606000-1129	500	29/42	29/42	102	1	91.43
606000-1224	500	34/45	24/40	102	1	93.67
606000-1424	1000	24/40	24/40	130	1	100.69
606000-1524	1000	29/42	24/40	130	1	109.76
606000-1529	1000	29/42	29/42	130	1	110.41
606000-1624	1000	34/45	24/40	130	1	111.88
606000-1724	1000	45/50	24/40	130	1	113.45
606000-1729	1000	45/50	29/42	130	1	116.36
606000-1824	2000	24/40	24/40	161	1	119.74
606000-1924	2000	29/42	24/40	161	1	128.35
606000-1929	2000	29/42	29/42	161	1	129.94
606000-2024	2000	34/45	24/40	161	1	131.87
606000-2124	2000	45/50	24/40	161	1	149.21
606000-2224	3000	24/40	24/40	185	1	147.48
606000-2324	3000	29/42	24/40	185	1	158.78
606000-2329	3000	29/42	29/42	185	1	161.47
606000-2524	3000	45/50	24/40	185	1	166.85
606000-2624	5000	24/40	24/40	221	1	167.03
606000-2729	5000	29/42	29/42	221	1	181.65
606000-2824	5000	34/45	24/40	221	1	183.00
606000-2924	5000	45/50	24/40	221	1	195.25
606000-6129	12000	29/42	29/42	295	1	244.89



609400

Distilling, Three Neck, Round Bottom, Indented, Heavy Wall

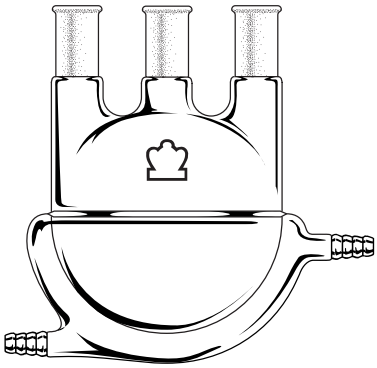
Three neck round bottom flask with $ outer joints, all vertical. Indentations enhance agitation when stirring. This flask is also referred to as a Morton flask.

Kontes Article No.	Capacity (mL)	Center $ Joint	Side $ Joints	Approx. Dia. (mm)	Case Qty.	Case Price
609400-0224	500	24/40	24/40	102	1	127.93
609400-0624	1000	24/40	24/40	130	1	147.15
609400-1324	2000	45/50	24/40	161	1	191.08
609400-2124	5000	45/50	24/40	221	1	247.58

Reaction, Three Neck, Round Bottom, Heavy Wall, Jacketed

Jacketed three neck round bottom flask with ⧩ outer joints, all vertical.

Kontes Article No.	Capacity (mL)	Center ⧩ Joint	Side ⧩ Joint	Approx. Diameter (mm)	Case Qty.	Case Price
609500-0524	500	24/40	24/40	105	1	193.50

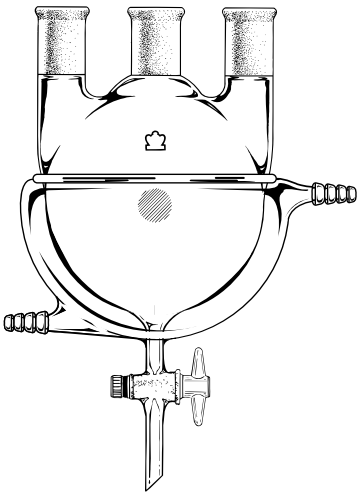


609500

Reaction, Three Neck, Round Bottom, Heavy Wall, Jacketed with PTFE Stopcock

Jacketed three neck round bottom reaction flask with ⧩ outer joints, all vertical and bottom drain with 821001-0004, 4mm PTFE plug.

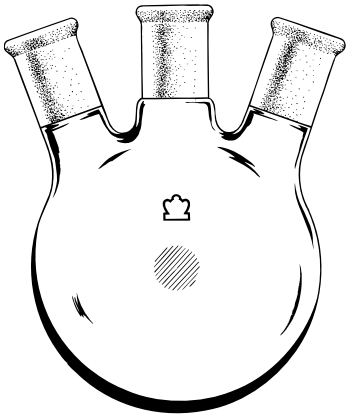
Kontes Article No.	Capacity (mL)	Center ⧩ Joint	Side ⧩ Joint	Hose Connection	Approx. Diameter (mm)	Case Qty.	Case Price
607280-1024	500	24/40	24/40	#2	105	1	258.72
607280-1424	1000	24/40	24/40	#2	130	1	329.80
607280-1824	2000	24/40	24/40	#3	161	1	389.48



607280

Hose Connector Tubing Size Chart

Hose Connector Size	Fits Flexible Tubing I.D.
1	1/4"
2	3/8"
3	1/2"
4	3/4"



295500
295510
295550
606020

Distilling, Three Neck, Round Bottom, Heavy Wall

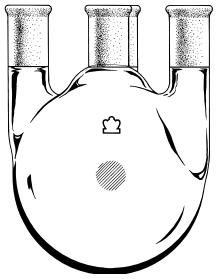
Three neck round bottom flask with ⅋ outer joints. Side necks are angled.

Kontes Article No.	Capacity (mL)	Center ⅋ Joint	Side ⅋ Joints'	Approx. Dia. (mm)	Case Qty.	Case Price
295550-0015	15	14/20	14/20	35	1	48.22
295500-0015	15	19/22	14/20	35	1	49.62
295550-0025	25	14/20	14/20	42	1	48.22
295500-0025	25	19/22	14/20	42	1	49.62
295510-0025	25	19/22	19/22	42	1	51.03
295550-0050	50	14/20	14/20	48	1	51.03
295500-0050	50	19/22	14/20	48	1	52.46
295510-0050	50	19/22	19/22	48	1	53.87
295550-0100	100	14/20	14/20	60	1	51.18
295500-0100	100	19/22	14/20	60	1	52.58
295510-0100	100	19/22	19/22	60	1	53.87
606020-0219	100	24/40	19/38	60	1	85.46
606020-0224	100	24/40	24/40	60	1	84.44
295550-0250	250	14/20	14/20	83	1	56.82
295500-0250	250	19/22	14/20	83	1	58.21
295510-0250	250	19/22	19/22	83	1	59.61
606020-0624	250	24/40	24/40	83	1	84.44
606020-4824	250	29/42	24/40	83	1	87.74
606020-4829	250	29/42	29/42	83	1	87.74
295550-0500	500	14/20	14/20	102	1	62.42
295500-0500	500	19/22	14/20	102	1	63.83
295510-0500	500	19/22	19/22	102	1	63.69
606020-1024	500	24/40	24/40	102	1	86.49
606020-1124	500	29/42	24/40	102	1	91.43
606020-1129	500	29/42	29/42	102	1	91.43
606020-1224	500	34/45	24/40	102	1	93.67
606020-1324	500	45/50	24/40	102	1	95.11
606020-1424	1000	24/40	24/40	130	1	100.69
606020-1529	1000	29/42	29/42	130	1	110.41
606020-1624	1000	34/45	24/40	130	1	111.88
606020-1824	2000	24/40	24/40	161	1	119.74
606020-1924	2000	29/42	24/40	161	1	128.35
606020-1929	2000	29/42	29/42	161	1	129.94
606020-2124	2000	45/50	24/40	161	1	150.66
606020-2224	3000	24/40	24/40	185	1	152.69
606020-2624	5000	24/40	24/40	221	1	174.87
606020-2724	5000	29/42	24/40	221	1	183.00
606020-2924	5000	45/50	24/40	221	1	195.25

Distilling, Four Neck, Round Bottom, Heavy Wall

Four neck round bottom flask with ⅋ outer joints, all vertical.

Kontes Article No.	Capacity (mL)	Center ⅋ Joint	Side ⅋ Joints	Approx. Dia. (mm)	Case Qty.	Case Price
607000-4724	250	24/40	24/40	83	1	117.83
607000-0224	500	24/40	24/40	105	1	122.05
607000-0324	500	29/42	24/40	105	1	127.31
607000-0329	500	29/42	29/42	105	1	128.75
607000-0424	500	34/45	24/40	105	1	131.66
607000-0524	500	45/50	24/40	105	1	139.82
607000-0624	1000	24/40	24/40	130	1	150.32
607000-0724	1000	29/42	24/40	130	1	156.60
607000-0729	1000	29/42	29/42	130	1	158.03
607000-0824	1000	34/45	24/40	130	1	160.92
607000-0924	1000	45/50	24/40	130	1	168.19
607000-1124	2000	29/42	24/40	161	1	179.95
607000-1129	2000	29/42	29/42	161	1	181.40
607000-1224	2000	34/45	24/40	161	1	182.83
607000-1324	2000	45/50	24/40	161	1	198.93
607000-1529	3000	29/42	29/42	185	1	223.73
607000-1624	3000	34/45	24/40	185	1	225.32
607000-1724	3000	45/50	24/40	185	1	228.23
607000-1729	3000	45/50	29/42	185	1	234.03
607000-1924	5000	29/42	24/40	221	1	242.88
607000-1929	5000	29/42	29/42	221	1	244.32
607000-2024	5000	34/45	24/40	221	1	245.78
607000-2124	5000	45/50	24/40	221	1	222.81
607000-2129	5000	45/50	29/42	221	1	240.39

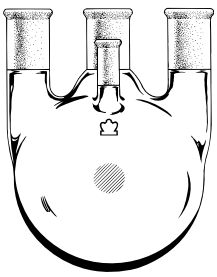


607000

Distilling, Four Neck, Round Bottom, Heavy Wall

Four neck round bottom flask with ⅋ outer joints, all vertical.

Kontes Article No.	Capacity (mL)	Center ⅋ Joint	Side ⅋ Joints	Thermometer ⅋ Joint	Approx. Dia. (mm)	Case Qty.	Case Price
606200-0124	250	29/42	24/40	10/30	83	1	131.91
606200-0224	500	24/40	24/40	10/30	102	1	133.12
606200-0324	500	29/42	24/40	10/30	102	1	131.91
606200-0424	500	34/45	24/40	10/30	102	1	148.01
606200-0624	1000	24/40	24/40	10/30	130	1	148.76
606200-0724	1000	29/42	24/40	10/30	130	1	152.05
606200-0824	1000	34/45	24/40	10/30	130	1	153.41
606200-1024	2000	24/40	24/40	10/30	161	1	161.82

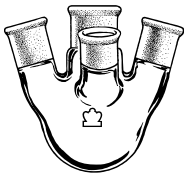


606200

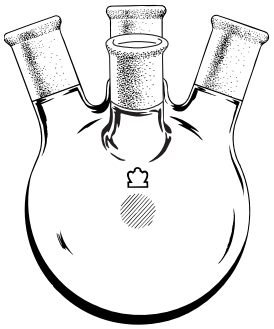
Distilling, Four Neck, Round Bottom, Heavy Wall

Four neck flask with ⅋ outer joints. Side necks are angled.

Kontes Article No.	Capacity (mL)	Center ⅋ Joint	Side ⅋ Joints	Approx. Dia. (mm)	Case Qty.	Case Price
295790-0025	25	14/20	14/20	42	1	74.06
295790-0050	50	14/20	14/20	48	1	74.06
295790-0100	100	14/20	14/20	60	1	74.06
295790-0250	250	14/20	14/20	83	1	75.37
606300-0124	250	24/40	24/40	83	1	114.91
606300-0224	500	24/40	24/40	102	1	119.16



295790

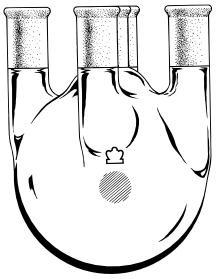


606300

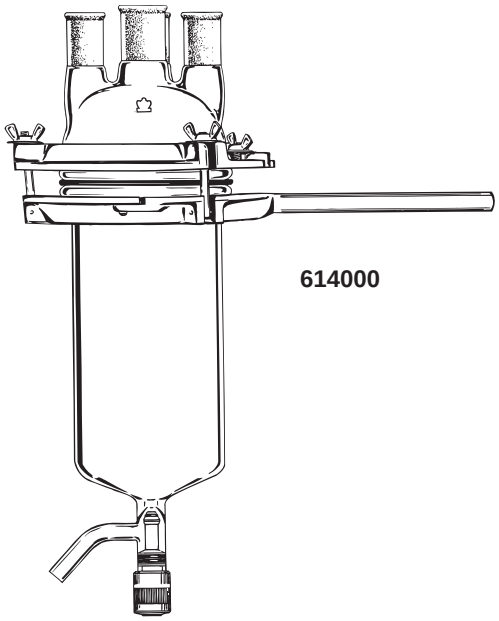
Round Bottom, Five Neck, Heavy Wall

Five-neck round bottom flask with vertical ⅋ outer joints. Side necks are 90° apart. Where possible, vertical necks will be supplied. On small flasks having large necks, positioning may have to be made at an angle.

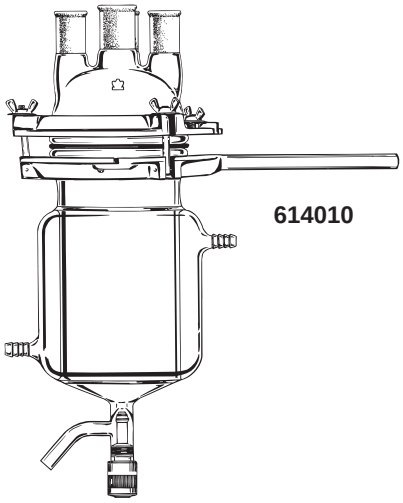
Kontes Article No.	Capacity (mL)	Center ⅋ Joint	Side ⅋ Joints	Approx. Dia. (mm)	Case Qty.	Case Price
607500-0224	500	24/40	24/40	105	1	93.82
607500-0624	1000	24/40	24/40	130	1	108.03
607500-1024	2000	24/40	24/40	161	1	144.98



607500



614000



614010

Reactors, Un-Jacketed and Jacketed

Reaction apparatus with a bottom outlet for easy product removal. Connection is made with a FKM o-ring for superior grease-free vacuum operation. Approximate wall thickness is 5 mm. Flask has an 826501-0008 PTFE valve plug. Connection is made with 613750-0000 clamp. Jacketed version has an external jacket for either heating or cooling liquid.

Un-Jacketed

Kontes Article No.	Capacity (mL)	Joints	Outlet Stem O.D. (mm)	Approx. Overall Height (mm)	Case Qty.	Case Price
614000-1000	1000	24/40	13	400	1	562.44
614000-2000	2000	24/40	13	525	1	584.61

Jacketed

Kontes Article No.	Capacity (mL)	Hose Conn.	Joints	Outlet Stem O.D. (mm)	Approx. Overall Height (mm)	Case Qty.	Case Price
614010-1000	1000	#3	24/40	13	415	1	857.38
614010-2000	2000	#3	24/40	13	525	1	882.15

Component Parts			
614001-0021	Reaction Flask Top, 24/40, 4-Neck	1	210.10
614002-1000	Reaction Flask, 1000 mL	1	150.07
614002-2000	Reaction Flask, 2000 mL	1	169.66
614012-1000	Reaction Flask, Jacketed, 1000 mL	1	446.30
614012-2000	Reaction Flask, Jacketed, 2000 mL	1	467.17
613750-0000	Clamp	1	143.17
758250-0349	FKM O-Ring, Size 349	1	28.96
Accessories			
613755-0002	PTFE Gasket	2	32.94
Optional Part			
826431-0008	PTFE Low Interference Plug, Size 8	1	54.00

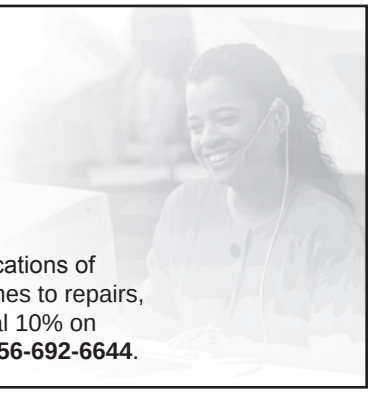
Hose Connector Tubing Size Chart

Hose Connector Size	Fits Flexible Tubing I.D.
1	1/4"
2	3/8"
3	1/2"
4	3/4"



- **Custom Fabrications**
- **Quality Repairs**
- **Modifications of All Kinds**
- **No Order Too Small**
- **Quick Turnaround**

KONTES
custom glass shop
*call toll-free **800-682-6644***
customglass@kimble-chase.com



Contact the **Kontes Custom Glass Shop** at KIMBLE CHASE for modifications of standard products or fabrication of your unique designs. And when it comes to repairs, we can save you up to 75% of the cost of a new item. Save an additional 10% on repairs of Kontes or Kimble Brand products. Fax your requirements to **856-692-6644**.

Reactors, Un-Jacketed and Jacketed

- **Low-Interference PTFE Plugs for Easy Product Removal**
- **Flush Bottom Outlets Eliminate Dead Space**
- **Improved Stirring with Removable Baffle Cage**
- **Grease-Free 6” Beaded Pipe Connections**

These reactors feature a 12 mm bottom outlet with a low-interference PTFE plug for easy product removal. The unique removable PTFE baffle cage simulates the effects of in-plant equipment. Connections are made with a grease-free 6” beaded pipe T-bolt stainless / PTFE coupling for superior grease-free vacuum operation. Approximate wall thickness is 5 mm.

Kontes Article No. 614110 includes an external jacket for either heating or cooling liquid. Jacket connectors are designed to accommodate 11-14 mm O.D. of 1/2” tubing.

Un-Jacketed

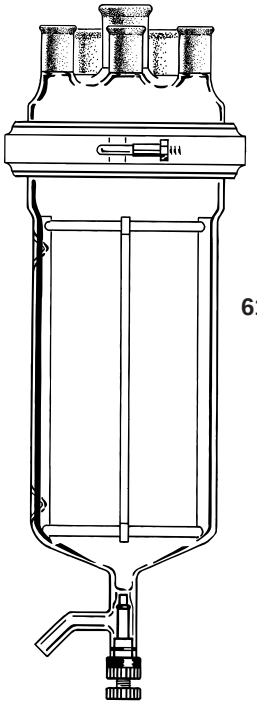
Kontes Article No.	Flask Cap. (ml)	Center Joint	Side (5) Joints	Approx. Overall Height (mm)	Case Qty.	Case Price
614100-5005	5000	45/50	24/40	570	1	1,261.99

Jacketed

Kontes Article No.	Flask Cap. (ml)	Center Joint	Outer (5) Joints	Hose Connections	Approx. Overall Height (mm)	Case Qty.	Case Price
614110-5005	5000	45/50	24/40	1/2”	570	1	1,864.94

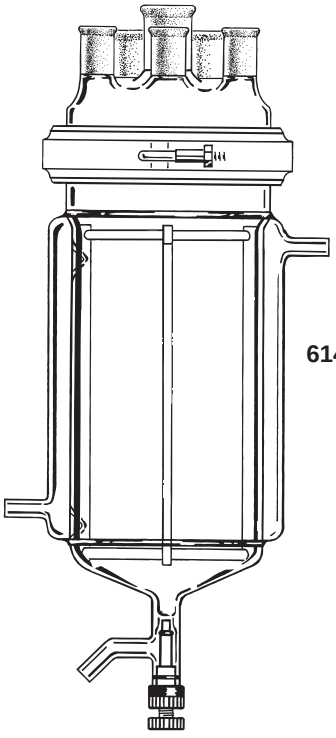
Component Parts			
614101-4524	Reaction Flask Top	1	437.62
614102-5005	Reaction Flask, 5000 mL	1	597.38
614112-5005	Reaction Flask, Jacketed, 5000 mL	1	1,234.63
675800-0060	Coupling, 6”	1	478.76

Optional Parts			
614103-5000	Removable Baffle Cage, PTFE	1	323.75
675650-0008	Double Vee Strap Clamp	1	38.48

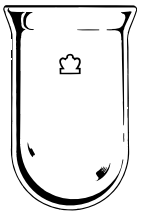


614100

Both styles shown with optional, removable, PTFE, baffle cage.



614110

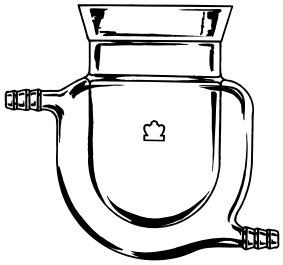


296100
612000

Reaction, Cylindrical

Flask with a flat ground flange and a 3/16” wall construction. Both 296100 sizes can be used with 721000 100 mL heating mantles. Use 722250 mantles with 612000.

Kontes Article No.	Capacity (mL)	Flange I.D. (inches)	Approx. Height (mm)	Use Clamp	Case Qty.	Case Price
296100-0050	50	2	65	296200-0000	1	39.69
296100-0100	100	2	95	296200-0000	1	41.37
612000-0500	500	4	100	613750-0000	1	115.72
612000-1000	1000	4	150	613750-0000	1	119.07
612000-1500	1500	4	205	613750-0000	1	131.87
612000-2000	2000	4	260	613750-0000	1	132.54
612000-3000	3000	4	370	613750-0000	1	135.90

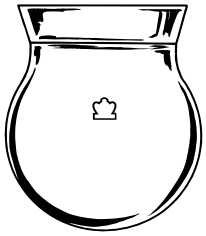


296110
612100

Reaction, Cylindrical, with Jacket

Jacketed flask with a flat ground flange and a 3/16” wall construction.

Kontes Article No.	Capacity (mL)	Flange I.D. (inches)	Approx. Height (mm)	Hose Conn. Size	Use Clamp	Case Qty.	Case Price
296110-0000	100	2	110	#1	296200-0000	1	172.26
612100-0500	500	4	140	#2	613750-0000	1	282.58
612100-1000	1000	4	170	#2	613750-0000	1	283.92
612100-2000	2000	4	280	#3	613750-0000	1	317.56
612100-3000	3000	4	390	#3	613750-0000	1	363.32



296150
612250

Reaction, Spherical

Flask with a flat ground flange.

Kontes Article No.	Capacity (mL)	Flange I.D. (Inches)	Approx. Dia. (mm)	Approx. Height (mm)	Use Clamp	Case Qty.	Case Price
296150-0250	250	2	83	115	296200-0000	1	46.97
296150-0300	300	2	87	120	296200-0000	1	49.84
296150-0500	500	2	102	140	296200-0000	1	52.85
612250-2000	2000	4	161	210	613750-0000	1	143.98
612250-5000	5000	4	221	290	613750-0000	1	180.32
612250-1200	12000	4	295	365	613750-0000	1	282.58
612250-2200	22000	4	350	425	613750-0000	1	464.21

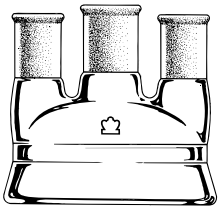
Hose Connector Tubing Size Chart

Hose Connector Size	Fits Flexible Tubing I.D.
1	1/4”
2	3/8”
3	1/2”
4	3/4”

Reaction, Flask Top, Three Neck

Three neck flask top with a flat ground flange for use with cylindrical and spherical flasks having the same I.D.

Kontes Article No.	Flange I.D. (in.)	Center ⅋ Joint	Side ⅋ Joints	Use Clamp	Case Qty.	Case Price
296170-0000	2	19/22	14/20	296200-0000	1	126.26
612500-0021	4	24/40	24/40	613750-0000	1	188.38
612500-0022	4	29/42	24/40	613750-0000	1	193.76
612500-4524	4	45/50	24/40	613750-0000	1	197.81

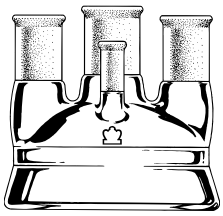


296170
612500

Reaction, Flask Top, Four Neck

Four neck flask top with a flat ground flange for use with cylindrical and spherical flasks having the same flange I.D. Uses a 613750 clamp.

Kontes Article No.	Flange I.D. (Inches)	Center ⅋ Joint	Side ⅋ Joints	Thermometer ⅋ Joint	Use Clamp	Case Qty.	Case Price
296190-0000	2	19/22	14/20	10/18	296200-0000	1	139.63
613000-0021	4	24/40	24/40	10/30	613750-0000	1	204.53
613000-4524	4	45/50	24/40	10/30	613750-0000	1	211.25

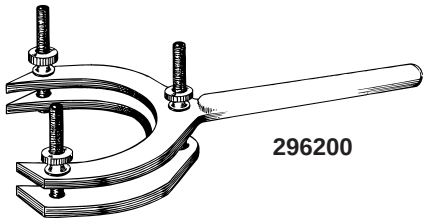


296190
613000

Clamps, Reaction Flask

Aluminum construction to connect tops to flasks. Wing nuts are spaced to assure good compression for sealing the system.

Kontes Article No.	Fits Ground Flange I.D. (inches)	Fits O-Ring Conn. Size	Case Qty.	Case Price
296200-0000	2	-	1	50.83
613750-0000	4	100	1	143.17

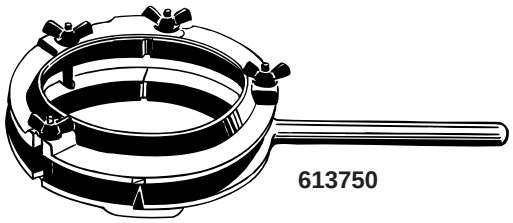


296200

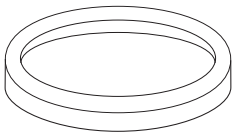
Gasket, Reaction Flask, PTFE

PTFE gasket used as an alternative to grease in sealing reaction flasks with tops.

Kontes Article No.	Fits Ground Flange I.D. (inches)	Case Qty.	Case Price
613755-0002	2	2	32.94
613755-0004	4	2	41.12



613750



613755

- Low profile for easy use in balances
- Samples weighed directly in flasks

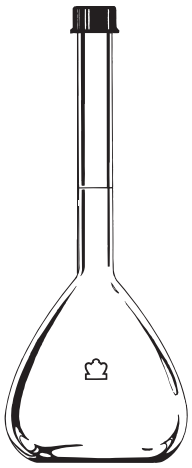


621630

Volumetric, Short Form, Class A, with Screw Cap

KONTES' short form class A volumetric flasks are designed for today's single pan balances. When combining volumetric and gravimetric applications, a flask can be tared and samples weighed directly into the flask. Solvent is then added to the calibration point. Reweighing assures accurate preparation of standards and normal solutions. Supplied with a PTFE/rubber-lined phenolic cap. Replacement cap is 410121.

Kontes Article No.	Capacity (mL)	GPI Thread Size	Approx. Overall Height (mm)	Approx. Tare (g)	Case Qty.	Case Price
621630-0025	25	13-425	75	18	1	29.75
621630-0050	50	13-425	85	25	1	31.68
621630-0100	100	13-425	100	43	1	34.77
Aceessories						
747205-1313	PTFE Connector, 13-425				1	12.27
747585-0013	Weighing/Transfer Funnel 13-425				1	17.60



621600

Volumetric, Class A, with Screw Cap

Class A threaded flask supplied with a PTFE/rubber-lined phenolic cap. Calibrated to contain. Replacement cap is 410121.

Kontes Article No.	Capacity (mL)	GPI Thread Size	Approx. Overall Height (mm)	Case Qty.	Case Price
621600-0005	5	13-425	80	1	19.56
621600-0010	10	13-425	90	1	25.56
621600-0025	25	13-425	100	1	27.49
621600-0050	50	13-425	145	1	29.75
621600-0100	100	13-425	165	1	31.68
621600-0250	250	20-400	210	1	39.92
621600-0500	500	20-400	265	1	49.15
621600-1000	1000	20-400	330	1	60.30
621600-2000	2000	28-410	400	1	75.39



Safety Program - *Play it safe in the lab.*

Our Safety Program discusses the ten basic safety rules of handling glassware as well as the technical properties and physics of glass. Available as a DVD.

Kimble Article No.	Format	Case Qty.	Case Price
99991D-99	DVD	1	23.99

See more safety products in the *SAFETYWARE* section.

Volumetric, Class A, Serialized and Certified, Snap Cap

KIMAX Class A flask is permanently marked with an individual serial number. Supplied with a Certificate of Graduation Accuracy. Graduation ring is blasted on the neck. Calibrated to contain and supplied with a polyethylene snap cap and a marking spot. Flasks have been carefully selected to meet the requirements for accuracy, appearance, glass quality, calibration line, and inscriptions of former NBS Circular 602. The 500 mL size is suitable for determination of specific gravity of fine aggregate (ASTM C128). Designed from ASTM Specification E288, Class A serialized requirements. **Replacement cap is 28150R.**

Kimble Article No.	Capacity (mL)	±Tol. (mL)	Plastic Cap No.	Approx. Height (mm)	Shelf-Pack Qty.	Case Qty.	Case Price
28012-50	50	0.05	3	130	1	12	285.60
28012-100	100	0.08	4	160	1	12	320.04
28012-250	250	0.12	5	225	1	12	445.68
28012-500	500	0.20	5	260	1	12	440.04
28012-1000	1000	0.30	6	310	1	6	297.66



28012

Volumetric, Class A, Snap Cap

KIMAX flask calibrated to contain. Class A accuracy but without a serial number. Supplied with a polyethylene snap cap. Designed from ASTM Specification E288. **Replacement cap is 28150R.**

Kimble Article No.	Capacity (mL)	±Tol. (mL)	Plastic Cap No.	Approx. Height (mm)	Shelf-Pack Qty.	Case Qty.	Case Price
28008-10	10	0.02	2	85	-	12	209.40
28008-25	25	0.03	2	100	6	12	223.20
28008-50	50	0.05	3	130	6	12	229.32
28008-100	100	0.08	4	160	6	12	237.12
28008-200	200	0.10	5	200	6	12	305.52
28008-250	250	0.12	5	225	6	12	328.80
28008-500	500	0.20	5	260	6	12	399.72
28008-1000	1000	0.30	6	310	1	6	225.30
28008-2000	2000	0.50	8	370	1	4	255.56



28008

Accessory Snap Cap

Kimble Article No.	Description	Case Qty.	Case Price
28150R-2	Snap Cap, Yellow Polyethylene, size 2	6	12.48
28150R-3	Snap Cap, Yellow Polyethylene, size 3	6	11.22
28150R-4	Snap Cap, Yellow Polyethylene, size 4	6	12.48
28150R-5	Snap Cap, Yellow Polyethylene, size 5	6	16.32
28150R-6	Snap Cap, Yellow Polyethylene, size 6	6	20.52

Caution: These caps may not be usable with items lacking necks specially tooled to proper diameters and contours.

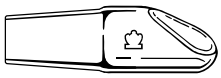


28150R

Transfer / Weighing Funnel

Ideal for the easy transfer of liquids or powders. Flat bottom allows weighing.

Kontes Article No.	Fits Neck Dia. (mm)	Approx. Overall Height x Width (mm)	Case Qty.	Case Price
747600-0013	13 or less	13 x 60	1	16.41
747600-0020	20 or less	22 x 70	1	18.75



747600



28017

Volumetric, Class A, Serialized and Certified, ⅋ Stopper

KIMAX flask is permanently marked with an individual serial number and is supplied with a Certificate of Graduation Accuracy. Graduation ring is blasted on the neck. Flask is calibrated to contain. Supplied with a marking spot and a ⅋ ground glass stopper. These flasks have been carefully selected to meet the requirements for accuracy, appearance, glass quality, calibration line, and inscriptions of former NBS Circular 602. Designed from ASTM Specification E288, Class A serialized requirements. **Replacement stopper is 41900R.**

Kimble Article No.	Capacity (mL)	±Tol. (mL)	⅋ Stopper	Approx. Height With Stopper(mm)	Shelf-Pack Qty.	Case Qty.	Case Price
28017-10	10	0.02	9	103	1	12	431.16
28017-25	25	0.03	9	118	1	12	513.48
28017-50	50	0.05	9	148	1	12	548.40
28017-100	100	0.08	13	180	1	12	614.52
28017-200	200	0.10	16	225	1	12	627.24
28017-250	250	0.12	16	250	1	12	671.52
28017-500	500	0.20	19	287	1	12	832.08
28017-1000	1000	0.30	22	338	1	6	507.12
28017-2000	2000	0.50	27	400	1	4	428.16



28014

Volumetric, Class A, ⅋ Stopper

KIMAX flask with a single graduation ring blasted on the neck, calibrated to contain. A ⅋ ground glass stopper is supplied. Marking spots on all sizes. Sizes 5 mL and larger are designed from ASTM Specification E288, Class A unserialized requirements. The 1 and 2 mL sizes are test tube shaped and are calibrated to E237 tolerances. **Replacement stopper is 41900R.**

Kimble Article No.	Capacity (mL)	±Tol. (mL)	⅋ Stopper	Approx. Height With Stopper(mm)	Shelf-Pack Qty.	Case Qty.	Case Price
28014-1	1	0.010	8	95	-	12	281.76
28014-2	2	0.015	8	110	-	12	303.48
28014-5	5	0.02	9	88	-	12	234.84
28014-10	10	0.02	9	103	-	12	281.04
28014-25	25	0.03	9	118	6	12	306.72
28014-50	50	0.05	9	148	6	12	327.12
28014-100	100	0.08	13	180	6	12	349.08
28014-200	200	0.10	16	225	6	12	402.96
28014-250	250	0.12	16	250	6	12	435.12
28014-500	500	0.20	19	287	6	12	539.76
28014-1000	1000	0.30	22	338	1	6	326.94
28014-2000	2000	0.50	27	400	1	4	275.40

Screened In Colors – Blue, Green, Yellow and Red



Volumetric, Class A, Color

KIMAX flask with a single graduation ring blasted on the neck, calibrated to contain. A ⅋ ground glass stopper is supplied along with a durable, color, matte finish marking area for use with an ordinary pencil. Designed from ASTM Specification E288, Class A unserialized requirements. **Replacement stopper is 41900R.**

—— Kimble Article No. ——									
Raging Red	Sunny Yellow	Cool Green	Bright Blue	Capacity (mL)	±Tol. (mL)	⅋ Stopper	Approx. Height With Stopper (mm)	Case Qty.	Case Price
28014R-25	28014Y-25	28014E-25	28014B-25	25	0.03	9	118	6	153.36
28014R-50	28014Y-50	28014E-50	28014B-50	50	0.05	9	148	6	163.56
28014R-100	28014Y-100	28014E-100	28014B-100	100	0.08	13	180	6	174.54
28014R-250	28014Y-250	28014E-250	28014B-250	250	0.12	16	250	6	217.56
28014R-500	28014Y-500	28014E-500	28014B-500	500	0.20	19	287	6	269.88
28014R-1000	28014Y-1000	28014E-1000	28014B-1000	1000	0.30	22	338	1	54.49

Choose Kimble Brand KIMAX® flasks from our newly expanded product line. These heavy-duty, wide-mouth flasks are available with glass, PTFE or PE stoppers . . . or buy only the flasks if you already have stoppers on hand. RAY-SORB® flasks for light-sensitive contents are listed on the next page.

- Pipet access is easy with wide-mouth volumetric flasks
- Superior strength, durability and safety from heavy, uniform walls
- Quick identification with large, permanent, easy-to-read, markings
- Flat interior bottoms for stirring with standard stir bars
- Accuracy - graduated to Class A volumetric tolerances

Volumetric Flasks with Glass ⅋ Stoppers

Kimble Article No.	Cap. (mL)	±Tol. (mL)	⅋ Stopper	Approx. Height with Stopper (mm)	Case Qty.	Case Price
92812G-5	5	0.08	13	97	6	123.00
92812G-10	10	0.08	13	100	6	132.60
92812G-20	20	0.08	13	130	6	146.40
92812G-25	25	0.08	13	130	6	144.00
92812G-50	50	0.08	13	150	6	146.40
92812G-100	100	0.10	16	180	6	180.00
92812G-200	200	0.20	19	223	6	234.00
92812G-250	250	0.20	19	248	6	234.00
92812G-500	500	0.20	19	283	6	280.80
92812G-1000	1000	0.30	22	335	1	87.70
92812G-2000	2000	0.50	27	395	1	127.20

Volumetric Flasks with Color-Coded PTFE ⅋ Stoppers

Kimble Article No.	Stopper Handle Color	Cap. (mL)	±Tol. (mL)	⅋ Stopper	Approx. Height with Stopper (mm)	Case Qty.	Case Price
92812F-5	Orange	5	0.08	13	94	6	123.00
92812F-10	Orange	10	0.08	13	97	6	132.60
92812F-20	Orange	20	0.08	13	127	6	146.40
92812F-25	Orange	25	0.08	13	127	6	144.00
92812F-50	Orange	50	0.08	13	147	6	146.40
92812F-100	Blue	100	0.10	16	175	6	180.00
92812F-200	Green	200	0.20	19	217	6	234.00
92812F-250	Green	250	0.20	19	269	6	234.00
92812F-500	Green	500	0.20	19	300	6	280.80
92812F-1000	Yellow	1000	0.30	22	328	1	87.70
92812F-2000	Red	2000	0.50	27	392	1	127.20

Volumetric Flasks with Polyethylene ⅋ Stoppers

Kimble Article No.	Cap. (mL)	±Tol. (mL)	⅋ Stopper	Approx. Height with Stopper (mm)	Case Qty.	Case Price
92812P-5	5	0.08	13	102	6	120.00
92812P-10	10	0.08	13	105	6	129.60
92812P-20	20	0.08	13	135	6	143.40
92812P-25	25	0.08	13	135	6	141.00
92812P-50	50	0.08	13	155	6	143.40
92812P-100	100	0.10	16	187	6	177.00
92812P-200	200	0.20	19	227	6	231.00
92812P-250	250	0.20	19	252	6	231.00
92812P-500	500	0.20	19	287	6	277.80
92812P-1000	1000	0.30	22	340	1	87.20
92812P-2000	2000	0.50	27	400	1	126.70

Volumetric Flasks Without Stoppers

Kimble Article No.	Cap. (mL)	±Tol. (mL)	⅋ Stopper Size	Approx. Height without Stopper (mm)	Case Qty.	Case Price
92812N-5	5	0.08	13	77	6	115.50
92812N-10	10	0.08	13	87	6	125.10
92812N-20	20	0.08	13	110	6	138.90
92812N-25	25	0.08	13	110	6	136.50
92812N-50	50	0.08	13	130	6	138.90
92812N-100	100	0.10	16	160	6	172.50
92812N-200	200	0.20	19	200	6	226.50
92812N-250	250	0.20	19	225	6	226.50
92812N-500	500	0.20	19	260	6	273.30
92812N-1000	1000	0.30	22	310	1	86.45
92812N-2000	2000	0.50	27	370	1	125.95



92812G

NEW!
Expanded Product Offering



92812F



92812P



92812N

Choose RAY-SORB® processed, KIMAX® flasks for your light-sensitive contents. These heavy-duty, wide-mouth flasks are available with glass, PTFE or PE stoppers . . . or buy only the flasks if you already have stoppers on hand.

- Pipet access is easy with wide-mouth volumetric flasks
- Superior strength, durability and safety from heavy, uniform walls
- Quick identification with large, permanent, easy-to-read, markings
- Flat interior bottoms for stirring with standard stir bars
- Accuracy - graduated to Class A volumetric tolerances

RAY-SORB processed flasks protect contents from short-length lightwaves. They are made from KIMAX KG-33 borosilicate glass, the same as our clear flasks, and then RAY-SORB processed to protect your light-sensitive contents.

NEW!

Expanded Product Offering



92822G



92822F



92822P



92822N

RAY-SORB® Volumetric Flasks with Glass ⅋ Stoppers

Kimble Article No.	Cap. (mL)	±Tol. (mL)	⅋ Stopper	Approx. Height with Stopper (mm)	Case Qty.	Case Price
92822G-5	5	0.08	13	97	6	154.20
92822G-10	10	0.08	13	100	6	165.60
92822G-20	20	0.08	13	130	6	170.40
92822G-25	25	0.08	13	130	6	170.40
92822G-50	50	0.08	13	150	6	184.20
92822G-100	100	0.10	16	180	6	250.50
92822G-200	200	0.20	19	223	6	273.60
92822G-250	250	0.20	19	248	6	288.00
92822G-500	500	0.20	19	283	6	339.00
92822G-1000	1000	0.30	22	335	1	107.15
92822G-2000	2000	0.50	27	395	1	155.25

RAY-SORB® Volumetric Flasks with PTFE ⅋ Stoppers

Kimble Article No.	Stopper Handle Color	Cap. (mL)	±Tol. (mL)	⅋ Stopper	Approx. Height with Stopper (mm)	Case Qty.	Case Price
92822F-5	Orange	5	0.08	13	94	6	154.20
92822F-10	Orange	10	0.08	13	97	6	165.60
92822F-20	Orange	20	0.08	13	127	6	170.40
92822F-25	Orange	25	0.08	13	127	6	170.40
92822F-50	Orange	50	0.08	13	147	6	184.20
92822F-100	Blue	100	0.10	16	175	6	250.50
92822F-200	Green	200	0.20	19	217	6	273.60
92822F-250	Green	250	0.20	19	269	6	288.00
92822F-500	Green	500	0.20	19	300	6	339.00
92822F-1000	Yellow	1000	0.30	22	328	1	107.15
92822F-2000	Red	2000	0.50	27	392	1	155.25

RAY-SORB® Volumetric Flasks with Polyethylene ⅋ Stoppers

Kimble Article No.	Cap. (mL)	±Tol. (mL)	⅋ Stopper	Approx. Height with Stopper (mm)	Case Qty.	Case Price
92822P-5	5	0.08	13	102	6	151.20
92822P-10	10	0.08	13	105	6	162.60
92822P-20	20	0.08	13	135	6	167.40
92822P-25	25	0.08	13	135	6	167.40
92822P-50	50	0.08	13	155	6	181.20
92822P-100	100	0.10	16	187	6	247.50
92822P-200	200	0.20	19	227	6	270.60
92822P-250	250	0.20	19	252	6	285.00
92822P-500	500	0.20	19	287	6	336.00
92822P-1000	1000	0.30	22	340	1	106.65
92822P-2000	2000	0.50	27	400	1	154.75

RAY-SORB® Volumetric Flasks Without Stoppers

Kimble Article No.	Cap. (mL)	±Tol. (mL)	⅋ Stopper Size	Approx. Height Without Stopper (mm)	Case Qty.	Case Price
92822N-5	5	0.08	13	77	6	146.70
92822N-10	10	0.08	13	80	6	158.10
92822N-20	20	0.08	13	110	6	162.90
92822N-25	25	0.08	13	110	6	162.90
92822N-50	50	0.08	13	130	6	176.70
92822N-100	100	0.10	16	160	6	243.00
92822N-200	200	0.20	19	200	6	266.10
92822N-250	250	0.20	19	225	6	280.50
92822N-500	500	0.20	19	260	6	331.50
92822N-1000	1000	0.30	22	310	1	105.90
92822N-2000	2000	0.50	27	370	1	154.00

Volumetric, Class A, Wide Mouth, Ⓢ Stopper

KIMAX flask with larger mouth to more easily accommodate pipet access. Neck size is # 13 and each flask is calibrated to Class A tolerances. Supplied with a glass stopper.

Kimble Article No.	Capacity (mL)	±Tol. (mL)	Ⓢ Stopper	Approx. Height with Stopper (mm)	Case Qty.	Case Price
28014W-50	50	0.05	13	148	6	163.74



28014W

Volumetric, Class A, with Polyethylene Stopper

KIMAX flask with a graduation ring blasted on the neck. Calibrated to contain. With a marking spot on sizes 10 mL and larger. The 1 and 2 mL sizes are test tube shaped. All other sizes are of a conventional flask shape. Supplied with a 28160R polyethylene stopper to fit in the Ⓢ ground neck. Enlarged top of the stopper will protect the neck if the flask is tipped over.

Kimble Article No.	Capacity (mL)	±Tol. (mL)	Stopper and Ⓢ Neck Size	Approx. Height with Stopper (mm)	Shelf-Pack Qty.	Case Qty.	Case Price
28014P-5	5	0.02	9	92	-	12	269.04
28014P-10	10	0.02	9	107	-	12	242.40
28014P-25	25	0.03	9	122	6	12	264.84
28014P-50	50	0.05	9	152	6	12	285.00
28014P-100	100	0.08	13	184	6	12	295.80
28014P-200	200	0.10	16	229	6	12	345.36
28014P-250	250	0.12	16	254	6	12	366.84
28014P-500	500	0.20	19	288	6	12	471.24
28014P-1000	1000	0.30	22	339	1	6	287.58
28014P-2000	2000	0.50	27	400	1	4	242.32



28014P

Volumetric, Class A, with Color-Coded PTFE Ⓢ Stopper

KIMAX flask with a graduation ring blasted on the neck. Calibrated to contain. With a marking spot on 10 mL and larger sizes. The 1 mL and 2 mL sizes are test tube shaped. All other sizes are of a conventional flask shape. Supplied with a PTFE Ⓢ stopper having a color-coded handle. The 5 mL and larger sizes are designed from ASTM Specification E288, Class A unserialized requirements. **Replacement stopper is 41901R.**

Kimble Article No.	Capacity (mL)	±Tol. (mL)	Ⓢ Stopper	Handle Color	Shelf-Pack Qty.	Case Qty.	Case Price
28014F-2	2	0.015	8	Gray	-	12	212.04
28014F-5	5	0.02	9	Black	-	12	253.56
28014F-10	10	0.02	9	Black	-	12	266.76
28014F-25	25	0.03	9	Black	6	12	291.00
28014F-50	50	0.05	9	Black	6	12	310.32
28014F-100	100	0.08	13	Orange	6	12	330.12
28014F-200	200	0.10	16	Blue	6	12	386.64
28014F-250	250	0.12	16	Blue	6	12	417.12
28014F-500	500	0.20	19	Green	6	12	517.20
28014F-1000	1000	0.30	22	Yellow	1	6	316.44
28014F-2000	2000	0.50	27	Red	1	4	266.52



28014F

Volumetric, Class A, RAY-SORB®,with Color-Coded PTFE Ⓢ Stopper

KIMAX flask is RAY-SORB processed to protect solutions sensitive to light of the shorter wavelengths. Calibrated to contain. With a marking spot. Supplied with a PTFE Ⓢ stopper having a color-coded handle. Designed from ASTM Specification E288, Class A unserialized requirements. **Replacement stopper is 41901R.**

Kimble Article No.	Capacity (mL)	±Tol. (mL)	Ⓢ Stopper	Handle Color	Approx. Ht. w/Stopper (mm)	Shelf-Pack Qty.	Case Qty.	Case Price
28016-10	10	0.02	9	Black	103	-	12	360.84
28016-25	25	0.03	9	Black	118	6	12	413.40
28016-50	50	0.05	9	Black	148	6	12	469.80
28016-100	100	0.08	13	Orange	180	6	12	470.40
28016-200	200	0.10	16	Blue	225	6	12	476.16
28016-250	250	0.12	16	Blue	250	6	12	577.68
28016-500	500	0.20	19	Green	287	6	12	1,109.52
28016-1000	1000	0.30	22	Yellow	338	1	6	687.60



Red-tinted glassware blocks harmful UV.

28016



28013

Volumetric, Class A, Vertical Stripe, Ʇ Stopper

KIMAX flask with a graduation ring blasted through a vertical stripe on the neck. Contrast between the blasted line and the deep amber background provides legibility without coloring of the graduation line. Calibrated to contain. Ʇ ground glass stopper is supplied with the flask. Designed from ASTM Specification E288, Class A unserialized requirements. **Replacement stopper is 41900R.**

Kimble Article No.	Capacity (mL)	±Tol. (mL)	Ʇ Stopper	Approx. Height with Stopper (mm)	Shelf-Pack Qty.	Case Qty.	Case Price
28013-25	25	0.03	9	118	6	12	309.84
28013-50	50	0.05	9	148	6	12	330.00
28013-100	100	0.08	13	180	6	12	349.08
28013-200	200	0.10	16	225	6	12	406.80
28013-250	250	0.12	16	250	6	12	439.20
28013-500	500	0.20	19	287	6	12	545.04
28013-1000	1000	0.30	22	338	1	6	330.12
28013-2000	2000	0.50	27	400	1	4	322.12



28019

Volumetric, Class A, Mixing Bulb Style Ʇ Stopper

KIMAX flask with a graduation ring blasted on the neck. Calibrated to contain. With a marking spot. Ʇ ground glass stopper is supplied. Mixing bulb in the neck, between the stopper and capacity ring, contains approximately one tenth of the capacity of the body to aid in dissolving or mixing the contents of the flask. Designed from ASTM Specification E288, Class A unserialized requirements. **Replacement stopper is 41900R.**

Kimble Article No.	Capacity (mL)	±Tol. (mL)	Ʇ Stopper	Approx. Height with Stopper (mm)	Shelf-Pack Qty.	Case Qty.	Case Price
28019-50	50	0.05	9	153	1	6	471.60
28019-100	100	0.08	13	180	1	4	258.68
28019-250	250	0.12	16	230	1	4	378.36
28019-500	500	0.20	19	280	1	4	436.40
28019-1000	1000	0.30	22	315	1	4	441.76



623100

Volumetric, Class A, Heavy Duty, Wide Mouth, Mixing Bulb, Screw Cap

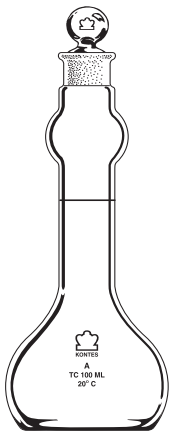
The heavy wall design of these flasks yields added durability. Easy access when using a pipet or adding solid material is provided by the wide mouth, screw thread opening. The mixing bulb is useful in dissolving tablets and other solids. The flasks are designed to ASTM for class A volumetric standards and are calibrated to contain. The screw thread feature also allows safe and secure storage. The cap is chemically resistant and provides an air -tight seal. It can be used in high temperature applications as high as 180ºC.

Kontes Article No.	Capacity (mL)	± Tol. (mL)	GPI Thread Size	Approx. Height with Cap (mm)	Case Qty.	Case Price
623100-0050	50	0.05	14	140	1	37.75
623100-0100	100	0.05	25	190	1	43.88
623100-0200	200	0.12	32	220	1	49.58
623100-0250	250	0.12	32	220	1	58.81
623100-0500	500	0.20	45	290	1	65.71
623100-1000	1000	0.30	45	330	1	77.90

Volumetric, Class A, Wide Mouth, Mixing Bulb, Ʃ Stopper

Wide mouth mixing bulb volumetric flasks allow easy access into the flask for applications such as dissolving tablets and other solids. Mixing bulb in neck accommodates approximately one tenth of the flask's total volume. 850100 pennyhead stopper included.

Kontes Article No.	Capacity (mL)	±Tol. (mL)	Ʃ Stopper	Approx. Height with Stopper (mm)	Case Qty.	Case Price
623010-0005	5	0.02	9	100	1	54.55
623010-0010	10	0.02	9	110	1	40.07
623010-0020	20	0.03	9	125	1	41.51
623010-0025	25	0.03	9	130	1	43.10
623010-0030	30	0.03	9	140	1	43.10
623010-0040	40	0.05	13	145	1	47.05
623010-0050	50	0.05	13	145	1	67.73
623010-0100	100	0.08	16	200	1	62.85
623010-0150	150	0.08	16	200	1	51.64
623010-0200	200	0.12	16	230	1	53.47
623010-0250	250	0.12	16	230	1	85.61
623010-0300	300	0.12	16	250	1	62.01
623010-0400	400	0.15	16	290	1	66.35
623010-0500	500	0.15	16	305	1	98.75
623010-1000	1000	0.30	22	345	1	99.97
623010-2000	2000	0.50	27	410	1	139.27

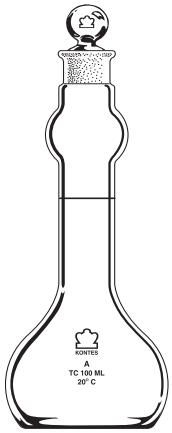


623010

Volumetric, Class A, Wide Mouth, Heavy Wall, Mixing Bulb, Ʃ Stopper

Heavy wall design provides added durability. Wide mouth mixing bulb volumetric flasks allow easy access into the flask for applications such as dissolving tablets and other solids. Mixing bulb in neck accommodates approximately one tenth of the flask's total volume. 850100 pennyhead stopper included.

Kontes Article No.	Capacity (mL)	±Tol. (mL)	Ʃ Stopper	Approx. Height with Stopper (mm)	Case Qty.	Case Price
623020-0100	100	0.08	16	200	1	65.67
623020-0200	200	0.12	16	230	1	74.36
623020-0250	250	0.12	16	230	1	79.06
623020-0300	300	0.12	16	250	1	83.43
623020-0400	400	0.15	16	290	1	89.47
623020-0500	500	0.15	16	305	1	93.86
623020-1000	1000	0.30	22	345	1	109.67



623020

Volumetric, Class A, To Contain and To Deliver, Ʃ Stopper

KIMAX flask with a graduation ring blasted on the neck. Calibrated both "to contain" and "to deliver" (top line). With a marking spot. Ʃ ground glass stopper is supplied with the flask. Designed from ASTM Specification E288, Class A unserialized requirements. **Replacement stopper is 41900R.**

Kimble Article No.	Capacity (mL)	±Tol. Contain Line (mL)	±Tol. Deliver Line (mL)	Ʃ Stopper	Approx. Height with Stopper (mm)	Case Qty.	Case Price
28026-100	100	0.08	0.15	13	180	6	207.36



28026





28040



28046



28100



28066

Volumetric, Class A, Square, Stopper

KIMAX flasks with a square cross-section, and a width less than the widest diameter of a usual round flask. Especially designed to take up less area and pack more closely on shelves and in refrigerators or other storage cabinets. For example, a shelf 12 inches x 33.5 inches will hold only 12 conventional 1000 mL round flasks, but will hold 30 square flasks. All sizes cover 25-35% less area than conventional flasks. Due to the added glass weight and the square section, flasks also have greater stability. Graduation ring is blasted on the neck. Calibrated to contain. With a marking spot. ground glass stopper is supplied with the flask. Designed from ASTM Specification E288, Class A unserialized requirements. **Replacement stopper is 41900R.**

Kimble Article No.	Capacity (mL)	±Tol. (mL)	Stopper	Approx. Height with Stopper (mm)	Case Qty.	Case Price
28040-50	50	0.05	9	160	1	38.92
28040-100	100	0.08	13	195	1	38.55
28040-200	200	0.10	16	248	1	91.28
28040-250	250	0.12	16	263	1	91.28
28040-500	500	0.20	19	320	1	113.56
28040-1000	1000	0.30	22	375	1	131.41
28040-2000	2000	0.50	27	440	1	173.81

Volumetric, Class A, Square, Calibrated To Contain and To Deliver, Stopper

- Save Valuable Shelf Space
- Each Square Flask Takes Up 25-30% Less Space than a Round Flask

Calibrated both “to contain” and “to deliver” (top line). Graduation rings and marking spot are blasted onto glass. ground glass stopper is supplied with the flask. Designed from ASTM Specification E288, Class A unserialized requirements. **Replacement ground glass stopper is 41900R.**

Kimble Article No.	Capacity (mL)	± Tol. Contain Line (mL)	± Tol. Deliver Line (mL)	Stopper	Approx. Height with Stopper (mm)	Case Qty.	Price
28046-500	500	0.20	0.40	19	320	1	125.68
28046-900	900	0.30	0.75	22	360	1	167.10

Volumetric, Class A, Kohlrausch

KIMAX flask with an enlarged mouth, providing easy introduction of samples of solid materials, such as sugar beets. Graduation ring is blasted on the neck. Calibrated to contain. With a marking spot.

Kimble Article No.	Capacity (mL)	±Tol. (mL)	Rubber Stopper Size	Approx. Height (mm)	Shelf-Pack Qty.	Case Qty.	Case Price
28100-100	100	0.10	6.5	159	2	12	660.60
28100-200	200	0.10	7.5	200	2	12	732.84
28100-500	500	0.20	9	264	2	6	437.28

Volumetric, Class A, Cassia

KIMAX flask used in assay of oils of cinnamon, chenopodium, cloves, spearmint and other essential oils, according to methods of the United States Pharmacopoeia and the Essential Oil Association of the USA. Calibrated to contain. With a marking spot and a durable white ceramic enamel scale. Neck is graduated from 100 to 110 mL in 0.1 mL subdivisions, with a ring at each 1 mL. **Replacement stopper is 41900R.**

Kimble Article No.	Capacity (mL)	±Tol. (mL)	Stopper	Approx. Height with Stopper (mm)	Shelf-Pack Qty.	Case Qty.	Case Price
28066-110	110	0.08	13	260	2	6	296.16

Volumetric, Micro, Class A, Cylindrical, Serialized and Certified, ⅋ Stopper

KIMAX flask is permanently marked with an individual serial number and a marking spot. Supplied with a Certificate of Graduation Accuracy. Graduation ring blasted on the neck. Calibrated to contain. ⅋ ground glass stopper is supplied with the flask.

Cylindrical bodies allow for better mixing, draining and withdrawal of samples by pipet. Wide base (circular for sizes 1, 2, and 5 mL and hexagonal for sizes 10 and 25 mL) imparts much greater stability than is possible with a conventional shaped flask.

Sizes 1-5 mL are designed from recommendations published by the Committee on Microchemical Apparatus of the Analytical Division, American Chemical Society, "Analytical Chemistry", 28, page 1993 (Dec. 1956). All sizes are from ASTM Specification E237, Class A serialized requirements. **Replacement stopper is 41900R.**

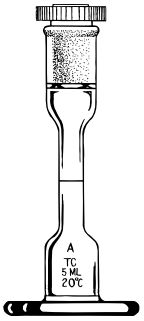


28017A

Kimble Article No.	Capacity (mL)	±Tol. (mL)	⅋ Stopper	Approx. Height with Stopper (mm)	Shelf-Pack Qty.	Case Qty.	Case Price
28017A-1	1	0.010	8	94	1	6	214.44
28017A-2	2	0.015	8	94	1	6	232.98
28017A-5	5	0.020	8	99	1	6	228.00
28017A-10	10	0.020	9	125	1	6	261.90
28017A-25	25	0.030	9	153	1	6	309.06

Volumetric, Micro, Class A with PTFE Stopper

Class A flask has a wide base and a maximum height restriction for greater stability. Calibrated to contain. 297001 is supplied without a stopper.

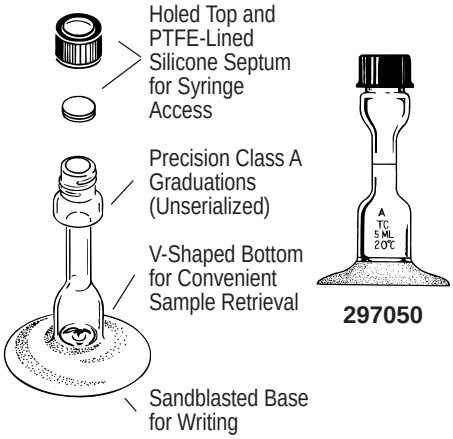


297000
297001

Kontes Article No.	Capacity (mL)	⅋ Joint	PTFE Stopper	Approx. Overall Height (mm)	Case Qty.	Case Price
297000-0001	1	14/20	850540-0014	110	1	34.28
297001-0001	1	14/20	-	100	1	25.47
297000-0002	2	14/20	850540-0014	110	1	35.34
297001-0002	2	14/20	-	100	1	26.31
297000-0003	3	14/20	850540-0014	110	1	37.18
297001-0003	3	14/20	-	100	1	27.70
297000-0005	5	14/20	850540-0014	115	1	42.18
297001-0005	5	14/20	-	105	1	32.59
297000-0010	10	14/20	850540-0014	125	1	43.10
297001-0010	10	14/20	-	115	1	33.49

Volumetric, Micro, Class A with Screw Cap

Class A threaded flask with open top phenolic cap and a PTFE-lined silicone septum for syringe access. Calibrated to contain. V-shaped bottom provides convenient sample retrieval.

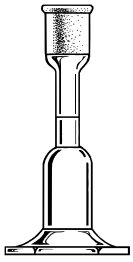


297050

Kontes Article No.	Capacity (mL)	GPI Thread size	Approx. Overall Height (mm)	Case Qty.	Case Price
297050-0001	1	13-425	73	1	23.96
297050-0002	2	13-425	73	1	25.61
297050-0003	3	13-425	73	1	26.52
297050-0005	5	13-425	73	1	28.53
297050-0010	10	13-425	73	1	30.47

Volumetric, Micro, Class A without Hooks

Class A flask with ground joint. Used as an optional receiver with 570010 or 570035 evaporative concentrator to avoid transfers from concentrator tubes. Concentration of sample continues to a point below the flask volume mark. Fresh solvent is then added to bring to volume. Aliquots may be taken for analysis. Without hooks. See 850500 glass or 850540 PTFE for accessory stoppers.



621410

Kontes Article No.	Capacity (mL)	⅋ Joint	Approx. Overall Height(mm)	Case Qty.	Case Price
621410-0524	5	14/20	105	1	27.99
621410-0525	5	19/22	110	1	27.99
621410-1025	10	19/22	120	1	29.81
621410-1026	10	24/25	120	1	33.64
Accessory Polyacetal Clamps					
675300-0014	Fits ⅋ 14/20 Joints			12	37.72
675300-0019	Fits ⅋ 19/22 Joints			12	38.46
675300-0024	Fits ⅋ 24/25 Joints			12	39.53



28015



28015P



28010

Volumetric, Class B, ⅋ Stopper

KIMAX flask with a graduation ring blasted on the neck. Calibrated to contain. With a marking spot. ⅋ ground glass stopper is supplied with the flask. Sizes 10 mL and larger are designed from ASTM Specification E288, Class B requirements. 1 & 2 mL are test tube shaped. **Replacement glass stopper is 41900R.**

Kimble Article No.	Capacity (mL)	±Tol. (mL)	⅋ Stopper	Approx. Height with Stopper (mm)	Shelf-Pack Qty.	Case Qty.	Case Price
28015-10	10	0.04	9	103	-	12	240.72
28015-25	25	0.06	9	118	6	12	265.32
28015-50	50	0.10	9	148	6	12	280.56
28015-100	100	0.16	13	180	6	12	305.28
28015-200	200	0.20	16	225	6	12	391.80
28015-250	250	0.24	16	250	6	12	369.60
28015-500	500	0.40	19	287	6	12	464.52
28015-1000	1000	0.60	22	338	1	6	285.60
28015-2000	2000	1.00	27	400	1	4	296.68

Volumetric, Class B, Polyethylene Stopper

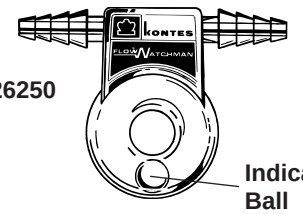
KIMAX flask with a graduation ring blasted on the neck. Calibrated to contain. With a marking spot. Supplied with a yellow and blue closed-bottom linear high-density polyethylene stopper to fit in the ⅋ ground neck. Enlarged top of the stopper will protect the neck if the flask is tipped over. Designed from ASTM Specification E288, Class B requirements. **Replacement stopper is 28160R.**

Kimble Article No.	Capacity (mL)	±Tol. (mL)	Stopper and ⅋ Neck Size	Approx. Height with Stopper (mm)	Shelf-Pack Qty.	Case Qty.	Case Price
28015P-100	100	0.16	13	184	6	12	270.36

Volumetric, Class B, Snap Cap

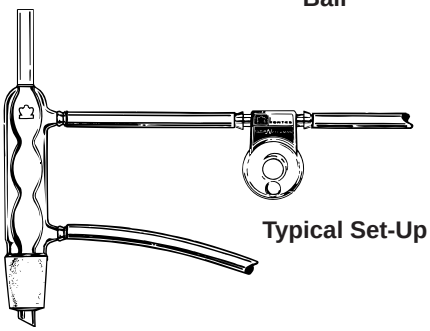
KIMAX flask with a graduation ring blasted on the neck. Calibrated to contain. With a marking spot. Opening of neck is tooled for a polyethylene snap cap, which is included. Enlarged top of the cap will protect the neck if the flask is tipped over. Designed from ASTM Specification E288, Class B requirements. **Replacement cap is 28150R.**

Kimble Article No.	Capacity (mL)	±Tol. (mL)	Plastic Cap No.	Approx. Height with Stopper (mm)	Shelf-Pack Qty.	Case Qty.	Case Price
28010-10	10	0.04	2	85	-	12	187.44
28010-25	25	0.06	2	100	6	12	204.60
28010-50	50	0.10	3	130	6	12	185.88
28010-100	100	0.16	4	160	6	12	213.36
28010-200	200	0.20	5	200	6	12	340.08
28010-250	250	0.24	5	225	6	12	254.04
28010-500	500	0.40	5	260	6	12	317.64
28010-1000	1000	0.60	6	310	1	6	203.40
28010-2000	2000	1.00	8	370	1	4	235.96



626250

Indicator Ball



Typical Set-Up

FLOW-WATCHMAN®

- Keep and eye on cooling water with the KONTES Flow-Watchman®

A device for the visual indication of liquid flow. Flow indication is visible from a distance. Usable with water down to a flow range of approximately 100 mL/minute, which is adequate for even the smallest cold finger condensers. The upper flow limit is in excess of 1 liter/minute. Speed of ball rotation is a semi-quantitative measure of water flow. Unit operates in any position.

Molded of clear polycarbonate with an inert nylon indicator ball. Light in weight. Requires no auxiliary support.

Kontes Article No.	Hose Connections	Maximum (psig)	Approx. Overall Height x Width x Thickness (mm)	Case Qty.	Case Price
626250-0000	#1	10	57 x 76 x 12	1	16.35

Recommended Procedures for Maximum Filter Life of Fritted Ware

New Filters - Wash new filters using suction with hot hydrochloric acid, followed by a water rinse.

Pressure Limits - The maximum safe differential pressure on a disc is 15 pounds per square inch.

Thermal Shock - Fritted ware has less resistance to thermal shock than non-porous glassware, hence excessive rapid temperature changes and direct exposure to a flame should be avoided. Heating in a furnace to 500°C may be done safely, provided the heating and cooling are gradual.

Dry ware may be put into a furnace that is set at 150°C, but attainment of a constant weight is usually done at 105°-110°C.

Cleaning of Used Filters

In many cases, precipitates can be removed by rinsing with water from the underside, with the pressure not exceeding 15 pounds per square inch. The suggestions that follow will be helpful in dealing with material that cannot be removed by the reverse water-wash.

Precipitate	Removal Agent
Albumen	Hot ammonia or hydrochloric acid.
Aluminous and siliceous residues	2% hydrofluoric acid followed by concentrated sulfuric acid. Rinse immediately with water until no trace of acid can be detected.
Copper or iron oxides	Hot hydrochloric acid plus potassium chlorate.
Glucose	Hot mixed acid (H_2SO_4 + HNO_3)
Fatty materials	Carbon tetrachloride
Mercuric sulfide	Hot agua regia
Mercury	Hot nitric acid
Organic Matter	Hot concentrated cleaning solution, or hot concentrated sulfuric acid with a few drops of sodium nitrite. (Bichromate cleaning solutions tend to permanently strain fritted ware which is undesirable for biochemical or pharmaceutical work.)
Silver chloride	Ammonium or sodium hyposulfite.

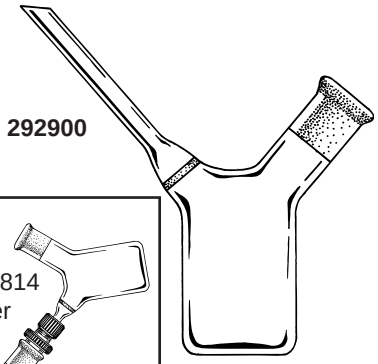
The use of strong alkalies, strong hydrofluoric acid and phosphoric acid should be avoided. Also, scratching of the surfaces will weaken the discs.

Porosities

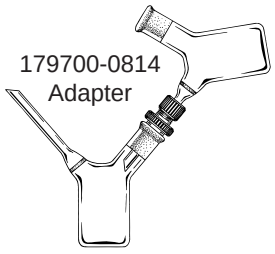
The available porosities and principal uses are shown in the table below.

Porosity **Grade**	Desig-**nation**	Pore Size **Microns**	ISO 4793 New Identi-**fication**	Porosity **Scale**	**Principal Uses**
Extra Coarse	EC	170-220	P250	0	Coarse filtration. Gas dispersion, washing, absorption.
Coarse	C	40-60	P100	2	Coarse filtration. Gas dispersion washing, absorption. Membrane support.
Medium	M	10-15	P16	4	Filtration and extraction.
Fine	F	4-5.5	—	—	Filtration and extraction.

Pore sizes are determined by the method specified in ASTM E128, “Maximum Pore Diameter and Permeability of Rigid Porous Filters for Laboratory Use.”



292900



179700-0814
Adapter

Typical Filtration Application Using Two Beakers and Accessory Adapter

Beaker, Filtration, Macro Size

A container used in the formation of a precipitate. Slight pressure or vacuum can be used to speed filtration. 1/4" O.D. sidearm has a sealed-in fritted disc.

Kontes Article No.	Joint	Cap. (mL)	Disc Dia. (mm)	Disc Porosity	Approx. Overall Height x Width (mm)	Case Qty.	Case Price
292900-0030	14/20	30	10	Coarse	110 x 105	1	77.51
Accessory							
179700-0814	BEVEL-SEAL™ Glass Adapter					1	27.02

Crucible, Gooch, High Form, with KIMFLOW® Fritted Disc

KIMAX crucible suitable for precipitates to be dried to a constant weight at 110° C. At higher temperatures, heating in an electric furnace is advised and crucibles should not be removed until the temperature has been reduced to about 250° C. Exposure to sudden temperature changes should be avoided.

Kimble Article No.	Capacity (mL) and Porosity	Approx. Dia. of Disc (mm)	Approx.Height (mm)	Case Qty.	Case Price
28250-302	30 M	30	60	1	24.59



28250



28260

Crucible, Gooch, Low Form, with KIMFLOW® Fritted Disc

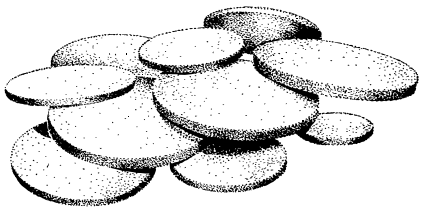
KIMAX crucible suitable for precipitates to be dried to a constant weight at 110° C. At higher temperatures, heating in an electric furnace is advised and crucibles should not be removed until the temperature has been reduced to about 250° C. Exposure to sudden temperature changes should be avoided.

Kimble Article No.	Capacity (mL) and Porosity	Approx. Dia. of Disc (mm)	Approx. Height (mm)	Shelf-Pack Qty.	Case Qty.	Case Price
28260-152	15 M	20	45	-	1	31.96
28260-301	30 C	30	50	2	12	317.64
28260-302	30 M	30	50	2	12	295.08
28260-303	30 F	30	50	2	12	317.64

Disc

Individual fritted discs for the fabrication of special apparatus or as a separate filtering device. Three porosities are available: extra coarse (EC), nominal pore size 170-220 microns; coarse (C), nominal pore size 40-60 microns; and medium (M), nominal pore size 10-15 microns.

Kontes Article No.	Disc Dia. (mm)	Porosity	Approx. Thickness (mm)	Case Qty.	Case Price
952000-1044	10	M	2	1	12.18
952000-1023	10	C	2	1	12.18
952000-1025	10	EC	3	1	12.18
952000-2044	20	M	2	1	13.97
952000-2023	20	C	2	1	13.97
952000-2025	20	EC	2	1	13.97
952000-3044	30	M	2.3	1	16.81
952000-3023	30	C	2.8	1	16.81
952000-3025	30	EC	2.8	1	16.81
952000-4044	40	M	3	1	25.19
952000-4023	40	C	3.5	1	25.19
952000-4025	40	EC	3.5	1	25.19
952000-6044	60	M	4.5	1	33.74
952000-6023	60	C	4.5	1	33.74
952000-6025	60	EC	6	1	33.74
952000-8044	80	M	6	1	71.81
952000-8023	80	C	6	1	71.81
952000-8025	80	EC	6	1	71.81
952000-0944	90	M	6	1	111.44
952000-0923	90	C	6	1	111.44
952000-0925	90	EC	6	1	111.44

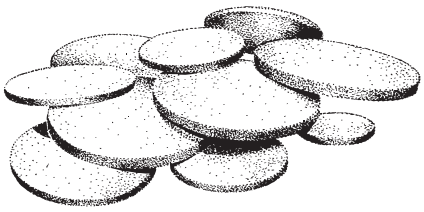


952000

Disc, Precise O.D.

Single, coarse fritted discs with precise O.D. for use with 422230 and 422250 Chromaflex chromatography columns or other filtering devices.

Kontes Article No.	Size	Disc Dia. (mm)	Case Qty.	Case Price
952050-0009	9	7.9-8	1	29.84
952050-0012	12	13.8-13.9	1	32.96
952050-0020	20	21.8-21.9	1	38.24
952050-0025	25	26.8-26.9	1	38.24
952050-0040	40	43.7-43.9	1	65.81
952050-0050	50	50.7-50.9	1	65.81



952050

Tube, Dispersion, Gas

Gas dispersion tube with a hollow fritted cylinder at the end of the tube. Available with a fine (F), coarse (C) or extra coarse (EC) porosity cylinder.

Kontes Article No.	Approx. Cylinder Height x O.D. (mm)	Porosity	Stem Dia. (mm)	Approx. Overall Height (mm)	Case Qty.	Case Price
956500-0022	24 x 13	F	8	250	1	26.33
956500-0023	24 x 13	C	8	250	1	44.02
956500-0025	24 x 13	EC	8	250	1	44.02

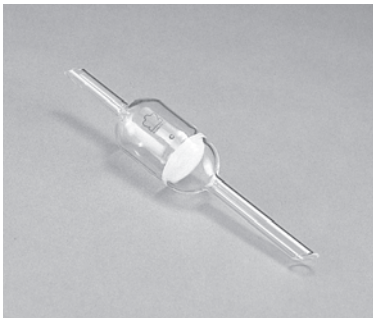


956500

Tube, Recovery, TLC Sample

For the recovery of samples directly from a developed TLC plate, using suction. Recovery of sample is accomplished by elution with an appropriate solvent while the adsorbent is retained on the fritted disc. Size 23 is useful for the recovery of samples from preparative TLC plates.

Kontes Article No.	Approx. Bulb Capacity	Disc Porosity	Approx. Overall Length (mm)	Case Qty.	Case Price
416400-0021	0.5-1 mL	Medium	103	1	63.44
416400-0022	1-2 mL	Medium	120	1	63.44
416400-0023	25-30 mL	Coarse	180	1	78.20



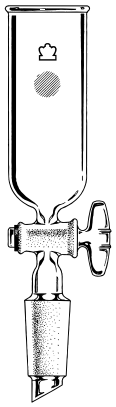
416400

For Fritted Funnels see ***Filtration, Funnels***.

KONTES
custom glass shop
*call toll-free **800-682-6644***
customglass@kimble-chase.com

Contact the **Kontes Custom Glass Shop** at KIMBLE CHASE for modifications of standard products or fabrication of your unique designs. And when it comes to repairs, we can save you up to 75% of the cost of a new item. Save an additional 10% on repairs of Kontes or Kimble Brand products. Fax your requirements to **856-692-6644**.

- **Custom Fabrications**
- **Quality Repairs**
- **Modifications of All Kinds**
- **No Order Too Small**
- **Quick Turnaround**

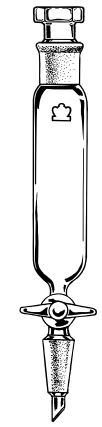


631250

Addition, Open Top, with Glass Plug

Cylindrical-type with an open top and a lower drip joint.

Kontes Article No.	Capacity (mL)	⧩ Joint	Approx. Overall Height x Body O.D. (mm)	Case Qty.	Case Price
631250-0060	60	24/40	215 x 35	1	89.99
Replacement Stopcock Plug					
801001-0002	Stopcock, Size 2, ⧩ Stopcock Size Bore (mm) 12/30			1	15.88

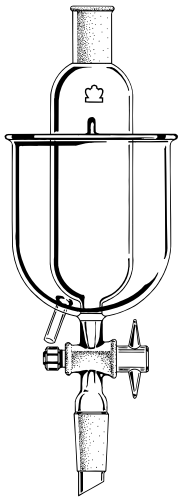


298780
298781
633030
633031

Addition, ⧩ Joints, PTFE Plug, with Stopper

Cylindrical funnel has a PTFE stopcock and a glass hex head stopper. 298781 and 633031 are supplied without a stopper.

Kontes Article No.	Capacity (mL)	⧩ Joint	⧩ Stopcock Size Bore (mm)	Stopper ⧩ Joint Size	Approx. Height (mm)	Case Qty.	Case Price
298780-0010	10	14/20	2	14/20	184	1	108.06
298781-0010	10	14/20	2	-	168	1	95.26
298780-0025	25	14/20	2	14/20	208	1	108.06
298781-0025	25	14/20	2	-	192	1	95.26
298780-0050	50	14/20	2	14/20	212	1	108.06
298781-0050	50	14/20	2	-	196	1	95.26
633030-0250	250	24/40	2	24/25	326	1	151.09
633031-0250	250	24/40	2	-	310	1	126.14
633030-0500	500	24/40	4	24/25	361	1	170.81
633031-0500	500	24/40	4	-	345	1	148.47
Replacement Stopcock Plug							
821001-0002	⧩ Stopcock Size Bore (mm) 2, Plug Size 11/25					1	12.03
821001-0004	⧩ Stopcock Size Bore (mm) 4, Plug Size 15.2/30					1	13.81
Replacement Stoppers							
850400-1420	⧩ Joint 14/20					1	20.48
850400-2425	⧩ Joint 24/25					1	24.66



298790
633060

Addition, Cooling Bath, ⧩ Joints, with PTFE Plug

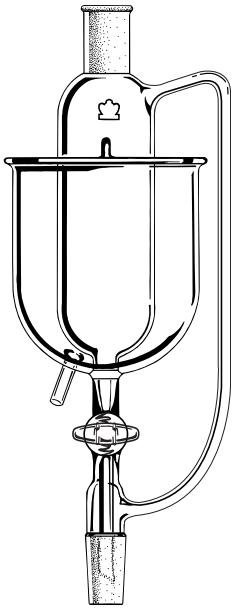
Cylindrical funnel designed for cooling with dry ice. Bath has an 8 mm O.D. drain outlet.

Kontes Article No.	Capacity (mL)	⧩ Joints	⧩ Stopcock Size Bore (mm)	Stopper ⧩ Joint Size	Approx. Height (mm)	Case Qty.	Case Price
298790-0075	75	14/20	4	14/20	255	1	124.15
633060-0250	250	24/40	6	24/40	325	1	212.52
633060-0251	250	29/42	6	24/40	330	1	232.76
633060-0500	500	24/40	6	24/40	330	1	259.40
633060-0501	500	29/42	6	24/40	335	1	262.36
Replacement Stopcock Plugs							
821001-0004	⧩ Stopcock Size Bore (mm) 4, Plug Size 15.2/30					1	13.81
821001-0006	⧩ Stopcock Size Bore (mm) 6, Plug Size 16/35					1	20.27
Accessory Stoppers							
850400-1420	⧩ Joint 14/20					1	20.48
850800-2440	⧩ Joint 24/40					1	25.98
850800-2942	⧩ Joint 29/42					1	28.56

Addition, Cooling Bath, Ⓢ Joints, with Glass Plug

Cylindrical funnel designed for cooling with dry ice. Bath has an 8 mm O.D. drain outlet.

Kontes Article No.	Capacity (mL)	Ⓢ Joints	Ⓟ Stopcock Size Bore (mm)	Case Qty.	Case Price
633070-0060	60	24/40	2	1	238.61
633070-0125	125	24/40	2	1	244.84
633070-0250	250	24/40	2	1	250.91
633070-1250	250	29/42	2	1	263.66
633070-0500	500	24/40	4	1	279.28
633070-1500	500	29/42	4	1	287.01



633070

Addition, Graduated, Ⓢ Joints, PTFE Plug, with or without Stopper

Cylindrical funnel has a PTFE stopcock and a glass hex-head stopper. Volume graduations to the stopcock are numbered both up and down. The 299031 and 633531 series funnels are supplied without a stopper.

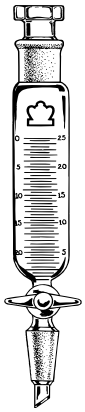
Kontes Article No.	Capacity (mL)	Ⓢ Joints	Subdiv. (mL)	Ⓟ Stopcock Size Bore (mm)	Stopper Ⓢ Joint Size	Approx. Height (mm)	Case Qty.	Case Price
299030-0010	10	14/20	0.2	2	14/20	201	1	144.52
299030-0025	25	14/20	0.5	2	14/20	214	1	148.47
299030-0050	50	14/20	1	2	14/20	221	1	149.78
299090-0060	60	19/22	1	2	19/22	235	1	157.66
633530-0060	60	24/40	1	2	24/25	283	1	185.26
633531-0060	60	24/40	1	2	-	260	1	157.66
299090-0125	125	19/22	1	2	19/22	280	1	164.22
633530-0125	125	24/40	1	2	24/25	333	1	186.58
633531-0125	125	24/40	1	2	-	310	1	161.60
633530-0250	250	24/40	5	2	24/25	333	1	199.71
633531-0250	250	24/40	5	2	-	310	1	177.36
633530-0500	500	24/40	5	4	24/25	368	1	241.73
633530-1000	1000	24/40	10	4	24/25	438	1	303.50
633530-2000	2000	24/40	10	6	24/25	533	1	340.29
633531-2000	2000	24/40	10	6	-	510	1	316.63

Replacement Stopcock Plugs

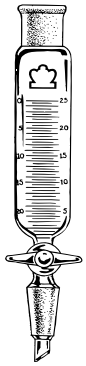
821001-0002	Ⓟ Stopcock Size Bore (mm) 2, Plug Size 11/25	1	12.03
821001-0004	Ⓟ Stopcock Size Bore (mm) 4, Plug Size 15.2/30	1	13.81
821001-0006	Ⓟ Stopcock Size Bore (mm) 6, Plug Size 16/35	1	20.27

Replacement Stoppers

850400-1420	Ⓢ Joint 14/20	1	20.48
850400-1922	Ⓢ Joint 19/22	1	19.56
850400-2425	Ⓢ Joint 24/25	1	24.66



299030
299090
633530
633531



299041
633511

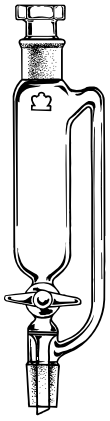
Addition, Graduated, ⅋ Joints, with PTFE Metering Plug

This funnel incorporates the use of a KONTES PTFE “Varibor” metering plug 821111. Turning the adjusting knob allows control of flow rate from dropwise to full flow. This feature facilitates reproducible addition rates.

Kontes Article No.	Capacity (mL)	⅋ Joints	Subdiv. (mL)	℘ Stopcock Size Bore (mm)	Approx. Height (mm)	Case Qty.	Case Price
299041-0010	10	14/20	0.2	2	185	1	155.03
299041-0025	25	14/20	0.5	2	198	1	155.03
299041-0050	50	14/20	1	2	205	1	155.03
633511-0060	60	24/40	1	2	260	1	201.00
633511-0125	125	24/40	1	2	310	1	210.24
633511-0250	250	24/40	5	2	310	1	227.30
633511-0500	500	24/40	5	4	345	1	257.51
633511-1000	1000	24/40	10	4	415	1	292.99

Replacement Stopcock Plugs

821111-0002	℘ Stopcock Size Bore (mm) 2, Plug Size 11/25	1	49.00
821111-0004	℘ Stopcock Size Bore (mm) 4, Plug Size 15.2/30	1	51.15



299230
299231

Addition, ⅋ 14/20 Joints, PTFE Plug, with or without Stopper

Cylindrical funnel has a pressure equalizing line and a PTFE stopcock. The 299231 series funnel is supplied without stoppper.

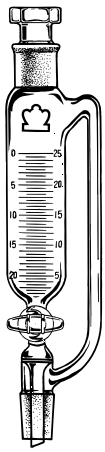
Kontes Article No.	Capacity (mL)	⅋ Joints	℘ Stopcock Size Bore (mm)	Stopper ⅋ Joint Size	Approx. Height (mm)	Case Qty.	Case Price
299230-0010	10	14/20	2	14/20	190	1	135.34
299231-0010	10	14/20	2	-	190	1	122.84
299230-0025	25	14/20	2	14/20	215	1	135.34
299231-0025	25	14/20	2	-	215	1	122.84
299230-0050	50	14/20	2	14/20	215	1	135.34
299231-0050	50	14/20	2	-	215	1	122.84

Replacement Stopcock Plugs

821001-0002	℘ Stopcock Size Bore (mm) 2, Plug Size 11/25	1	12.03

Replacement Stoppers

850400-1420	⅋ Joint 14/20	1	20.48



299250
299251

Addition, Graduated, ⅋ Joints, Glass Plug, with or without Stopper

Cylindrical funnel has a pressure equalizing line and a glass stopcock. Graduations to the stopcock are numbered both up and down. Supplied with an 850400 hex-head stopper. The 299251 series funnel is supplied without stoppper.

Kontes Article No.	Capacity (mL)	⅋ Joints	Subdiv. (mL)	℘ Stopcock Size Bore (mm)	Approx. Height (mm)	Case Qty.	Case Price
299250-0010	10	14/20	0.2	2	210	1	170.81
299251-0010	10	14/20	0.2	2	190	1	160.28
299250-1010	10	19/22	0.2	2	215	1	152.38
299250-0025	25	14/20	0.5	2	225	1	176.07
299251-0025	25	14/20	0.5	2	215	1	162.92
299250-1025	25	19/22	0.5	2	230	1	152.38
299250-0050	50	14/20	1	2	230	1	178.69
299251-0050	50	14/20	1	2	215	1	165.55
299250-1050	50	19/22	1	2	240	1	152.38
299250-0060	60	14/20	1	2	240	1	147.72
299250-1060	60	19/22	1	2	240	1	152.38

Replacement Stopcock Plugs

305751-0221	℘ Stopcock Size Bore (mm) 2, Plug Size 10/25	1	13.81

Addition, Graduated, ⅋ 14/20 Joints, PTFE Plug, with or without Stopper

Cylindrical funnel has a pressure equalizing line and a PTFE stopcock. Graduations to the stopcock are numbered both up and down. Supplied with an 850400 stopper. The 299281 series funnel is supplied without stoppper.

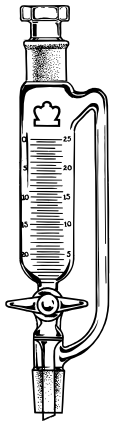
Kontes Article No.	Capacity (mL)	⅋ Joints	Subdiv. (mL)	℘ Stopcock Size Bore (mm)	Approx. Height (mm)	Case Qty.	Case Price
299280-0010	10	14/20	0.2	2	205	1	185.26
299281-0010	10	14/20	0.2	2	190	1	170.81
299280-0025	25	14/20	0.5	2	230	1	189.18
299281-0025	25	14/20	0.5	2	215	1	176.07
299280-0050	50	14/20	1	2	230	1	191.82
299281-0050	50	14/20	1	2	215	1	177.36

Replacement Stopcock Plug

821001-0002	℘ Stopcock Size Bore (mm) 2, Plug Size 11/25	1	12.03

Replacement Stopper

850400-1420	Glass Stopper, Hex Head, ⅋ 14/20	1	20.48



299280
299281

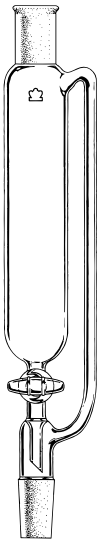
Addition, ⅋ 24/40 Joints, with Glass Plug

Cylindrical funnel has a pressure equalizing line and a glass stopcock.

Kontes Article No.	Capacity (mL)	⅋ Joints	℘ Stopcock Size Bore (mm)	Approx. Height (mm)	Case Qty.	Case Price
634000-0060	60	24/40	2	295	1	149.78
634000-0125	125	24/40	2	345	1	155.03
634000-0250	250	24/40	2	345	1	170.81
634000-0500	500	24/40	4	385	1	195.76
634000-1000	1000	24/40	4	455	1	247.02

Replacement Stopcock Plugs

801001-0002	℘ Stopcock Size Bore (mm) 2, Plug Size 12/30	1	15.88
801001-0004	℘ Stopcock Size Bore (mm) 4, Plug Size 17/40	1	24.52



634000

Addition, ⅋ Joints, with PTFE Plug

Cylindrical funnel has a pressure equalizing line and a PTFE stopcock.

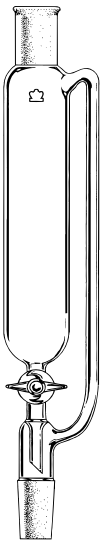
Kontes Article No.	Capacity (mL)	⅋ Joints	℘ Stopcock Size Bore (mm)	Approx. Height (mm)	Case Qty.	Case Price
634030-0060	60	24/40	2	295	1	183.94
634040-0060	60	29/42	2	300	1	222.05
634030-0125	125	24/40	2	345	1	185.26
634030-0250	250	24/40	2	345	1	211.53
634040-0250	250	29/42	2	350	1	254.88
634030-0500	500	24/40	4	380	1	224.67
634030-1000	1000	24/40	4	450	1	300.89
634040-1000	1000	29/42	4	455	1	361.32

Replacement Stopcock Plugs

821001-0002	℘ Stopcock Size Bore (mm) 2, Plug Size 11/25	1	12.03
821001-0004	℘ Stopcock Size Bore (mm) 4, Plug Size 15.2/30	1	13.81

Accessory Stoppers

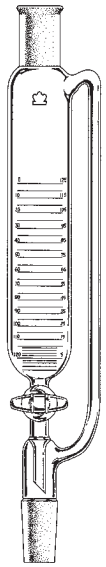
850400-1420	Glass Stopper, Hex Head, ⅋ 14/20	1	20.48
850800-2440	Glass Stopper, Hex Head, ⅋ 24/40	1	25.98



634030
634040

Addition, Graduated, ⅋ 24/40 Joints, with Glass Plug

Cylindrical funnel has a pressure equalizing line and a glass stopcock. Graduations to the stopcock are numbered both up and down. Supplied without a stopper.



634500

Kontes Article No.	Capacity (mL)	⅋ Joints	Subdiv. (mL)	Replacement Stopcock Plug	Approx. Height (mm)	Case Qty.	Case Price
634500-0010	10	24/40	1	305751-0221	225	1	170.46
634500-0025	25	24/40	1	305751-0221	250	1	170.46
634500-0050	50	24/40	1	305751-0221	275	1	170.46
634500-0060	60	24/40	1	305751-0221	297	1	193.14
634500-0125	125	24/40	1	801001-0002	345	1	201.00
634500-1125	125	29/26	1	801001-0002	330	1	187.72
634500-0250	250	24/40	5	801001-0002	345	1	231.24
634500-0500	500	24/40	5	801001-0004	385	1	266.71
634500-2926	500	29/26	10	801001-0004	355	1	230.73
634500-2942	500	29/42	10	801001-0004	390	1	230.73
634500-1005	1000	29/42	10	801001-0004	460	1	271.53

Replacement Stopcock Plug

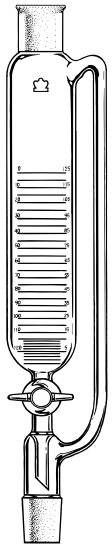
305751-0221	⅋ Stopcock Size Bore (mm) 2, Plug Size 10/25	1	13.81
801001-0002	⅋ Stopcock Size Bore (mm) 2, Plug Size 12/30	1	15.88
801001-0004	⅋ Stopcock Size Bore (mm) 4, Plug Size 17/40	1	24.52

Accessory Stoppers

850400-2926	Glass Stopper, Hex-Head, ⅋ 29/26	1	28.44
850800-2440	Glass Stopper, Hex-Head, ⅋ 24/40	1	25.98
850800-2942	Glass Stopper, Hex-Head, ⅋ 29/42	1	28.56

Addition, Graduated, PTFE Plug

Cylindrical funnel has a pressure equalizing line and a PTFE stopcock. Graduations to the stopcock are numbered both up and down. Supplied without a stopper.



299290
634530
634540

Kontes Article No.	Capacity (mL)	⅋ Joints	Subdiv. (mL)	⅋ Stopcock Size Bore (mm)	Approx. Height (mm)	Case Qty.	Case Price
299290-0060	60	19/22	1	2	265	1	208.91
634530-0060	60	24/40	1	2	295	1	210.24
634540-0060	60	29/42	1	2	300	1	256.20
299290-0125	125	19/22	1	2	316	1	215.48
634530-0125	125	24/40	1	2	345	1	211.53
634540-0125	125	29/42	1	2	350	1	257.51
299290-0250	250	19/22	5	2	313	1	243.07
634530-0250	250	24/40	5	2	345	1	243.07
634540-0250	250	29/42	5	2	350	1	294.31
634530-0500	500	24/40	5	4	382	1	266.71
634540-0500	500	29/42	5	4	387	1	324.53
634530-1000	1000	24/40	10	4	450	1	352.10
634540-1000	1000	29/42	10	4	455	1	425.68
634530-2000	2000	24/40	20	6	550	1	419.13
634540-2000	2000	29/42	20	6	555	1	505.84

Replacement Stopcock Plug

821001-0002	⅋ Stopcock Size Bore (mm) 2, Plug Size 11/25	1	12.03
821001-0004	⅋ Stopcock Size Bore (mm) 4, Plug Size 15.2/30	1	13.81
821001-0006	⅋ Stopcock Size Bore (mm) 6, Plug Size 16/35	1	20.27

Accessory Stoppers

850400-1922	Glass Stopper, Hex-Head, ⅋ 19/22	1	19.56
850800-2440	Glass Stopper, Hex-Head, ⅋ 24/40	1	25.98
850800-2942	Glass Stopper, Hex-Head, ⅋ 29/42	1	28.56

Addition, Graduated, ⧩ Joints, with PTFE Metering Plug

This funnel incorporates the use of a KONTES "Varibor" metering plug. Turning the adjusting knob allows control of flow rate from dropwise to full flow. This feature facilitates reproducible addition rates. Supplied without a stopper.

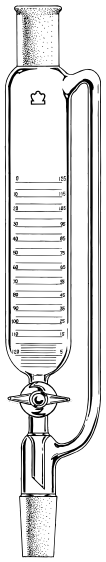
Kontes Article No.	Capacity (mL)	⧩ Joints	Subdiv. (mL)	⧩ Stopcock Size Bore (mm)	Approx. Height (mm)	Case Qty.	Case Price
299261-0025	25	14/20	0.5	2	215	1	186.58
634510-0060	60	24/40	1	2	295	1	211.53
634510-0125	125	24/40	1	2	345	1	219.42
634510-0250	250	24/40	5	2	345	1	239.11
634510-0500	500	24/40	5	4	382	1	269.34
634510-1000	1000	24/40	10	4	450	1	292.99

Replacement Stopcock Plugs

821111-0002	⧩ Stopcock Size Bore (mm) 2, Plug Size 11/25	1	49.00
821111-0004	⧩ Stopcock Size Bore (mm) 4, Plug Size 15.2/30	1	51.15

Accessory Stoppers

850400-1420	Glass Stopper, Hex Head, ⧩ 14/20	1	20.48
850800-2440	Glass Stopper, Hex Head, ⧩ 24/40	1	25.98

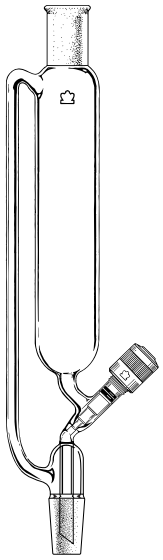


299261
634510

Addition, with PTFE Threaded Valve

Cylindrical funnel has a threaded, grease-free extended tip valve for semi-needle valve action and pressure equalizing arm. **Funnels with ⧩14/20 and ⧩19/22 joints are supplied complete with a stopper.**

Kontes Article No.	Capacity (mL)	⧩ Joints	Valve Size (mm)	Approx. Height (mm)	Case Qty.	Case Price
634050-0050	50	14/20	2	240	1	137.25
634055-0050	50	19/22	2	240	1	140.26
634050-0060	60	14/20	2	235	1	137.25
634055-0060	60	19/22	2	235	1	140.26
634055-1060	60	24/40	2	280	1	177.48
634050-0125	125	24/40	4	350	1	184.07
634050-0250	250	24/40	4	405	1	206.65
634050-0500	500	24/40	4	460	1	217.26
634055-0500	500	29/42	4	475	1	224.73
634050-1000	1000	24/40	4	545	1	250.32
634055-1000	1000	29/42	4	550	1	224.73



634050
634055

Addition, Graduated, ⧩ Joints, with PTFE Threaded Valve

Cylindrical funnel has a threaded, grease-free extended tip valve for semi-needle action and pressure equalizing arm. **Funnels with ⧩14/20 and ⧩19/22 joints are supplied complete with a stopper.**

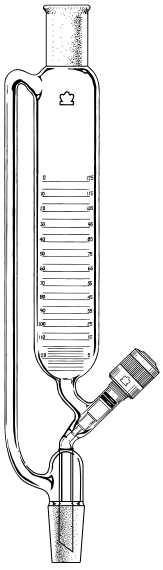
Kontes Article No.	Capacity (mL)	Subdiv. (mL)	⧩ Joints	Valve Size (mm)	Case Qty.	Case Price
634100-0050	50	1.0	14/20	2	1	165.96
634110-0050	50	1.0	19/22	2	1	171.41
634100-0060	60	1.0	14/20	2	1	165.96
634110-0060	60	1.0	19/22	2	1	171.41
634120-0060	60	1.0	24/40	2	1	196.84
634130-0060	60	1.0	29/26	2	1	199.97
634100-0125	125	1.0	24/40	2	1	200.64
634110-0125	125	1.0	29/26	2	1	208.16
634100-0250	250	5.0	24/40	4	1	215.76
634110-0250	250	5.0	29/26	4	1	223.24
634100-0500	500	5.0	24/40	4	1	241.34
634110-0500	500	5.0	29/42	4	1	248.97
634100-1000	1000	10.0	24/40	4	1	282.16
634110-1000	1000	10.0	29/42	4	1	289.62

Replacement Plugs

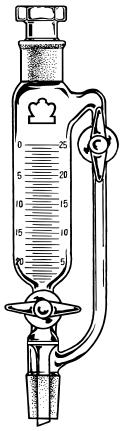
826411-0002	PTFE Plug Size Bore (mm) 2	1	13.39
826411-0004	PTFE Plug Size Bore (mm) 4	1	9.71

Replacement Stoppers

850400-1420	Glass Stopper, Hex Head, ⧩ 14/20	1	20.48
850400-1922	Glass Stopper, Hex Head, ⧩ 19/22	1	19.56



634100
634110
634120
634130



299310
299311

Addition, Graduated, ⅋ Joints, PTFE Plugs, with or without Stopper

Cylindrical funnel has a pressure equalizing line and PTFE stopcocks. Graduations to the lower stopcock are numbered both up and down. 299311 is supplied without a stopper. Stopcocks have 821001-0002 plugs.

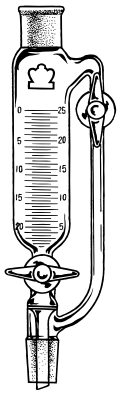
Kontes Article No.	Capacity (mL)	⅋ Joints	Subdiv. (mL)	Replacement Stopper	Approx. Overall Height (mm)	Case Qty.	Case Price
299310-0010	10	14/20	0.2	850400-1420	205	1	224.67
299311-0010	10	14/20	0.2	-	190	1	211.53
299310-0025	25	14/20	0.5	850400-1420	230	1	229.92
299311-0025	25	14/20	0.5	-	215	1	216.78
299310-0050	50	14/20	1	850400-1420	230	1	232.55
299311-0050	50	14/20	1	-	215	1	218.09

Replacement Stopcock Plug

821001-0002	⅋ Stopcock Size Bore (mm) 2, Plug Size 11/25	1	12.03

Replacement Stopper

850400-1420	Glass Stopper, Hex-Head, ⅋ 14/20	1	20.48

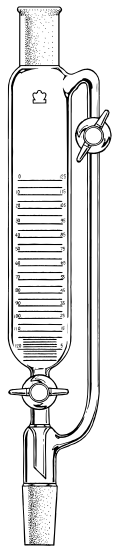


299321

Addition, Varibor, ⅋ 14/20 Joints, with PTFE Plugs

This funnel incorporates the use of a pressure equalizing line and a KONTES "Varibor" metering plug. Turning the adjusting knob allows control of flow from dropwise to full flow. This feature facilitates reproducible addition rates. Graduations to the lower stopcock are numbered both up and down. Supplied with one each 821001 and 821111 stopcock plugs but without stopper.

Kontes Article No.	Capacity	⅋ Joint	Subdiv. (mL)	Approx. Overall Height (mm)	Case Qty.	Case Price
299321-0050	50	14/20	1	215	1	241.73



634580

Addition, Graduated, ⅋ 24/40 Joints, with PTFE Plugs

Cylindrical funnel has a pressure equalizing line and PTFE stopcocks. Graduations to the lower stopcock are numbered both up and down. Stopcocks have 821001 plugs. Upper stopcock size is 2 mm.

Kontes Article No.	Capacity (mL)	⅋ Joints	Subdiv. (mL)	⅋ Stopcock Size Bore (mm)	Approx. Overall Height (mm)	Case Qty.	Case Price
634580-0060	60	24/40	1	2	300	1	265.40
634580-0125	125	24/40	1	2	350	1	266.71
634580-0250	250	24/40	5	2	350	1	295.61
634580-0500	500	24/40	5	4	385	1	317.95

Replacement Stopcock Plugs

821001-0002	⅋ Stopcock Size Bore (mm) 2, Plug Size 11/25	1	12.03
821001-0004	⅋ Stopcock Size Bore (mm) 4, Plug Size 15.2/30	1	13.81

Constant Addition

Precision-type for setting flow rates from 1 to 160 drops per minute of water at 25°C. Shut-off seal is made by lowering the PTFE shoulder into a specially formed glass seat.

Design is based on the Mariotte principle and assures the drop rate regardless of the liquid level. Internal delivery scale is graduated to allow accurate resetting on successive runs.

Constructed of borosilicate glass, PTFE, and CTFE. Probe FKM o-ring is size 110. Suitable for use under moderate vacuum. ⅋ 19/22 refill valve/stopper has a special bore to permit initial equilibration of the apparatus when it is used under vacuum. Graduated and numbered both up and down. Supplied with operating instructions.

Kontes Article No.	Capacity (mL)	Lower ⅋ Joint	Approx. Overall Height (mm)	Case Qty.	Case Price
299350-0030	30	14/20	258	1	377.07
299350-0060	60	14/20	278	1	391.52
634620-0060	60	24/40	308	1	398.09
634620-0125	125	24/40	308	1	423.06
634620-0250	250	24/40	340	1	444.09
634620-0500	500	24/40	398	1	476.93

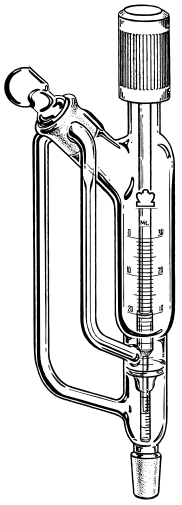
Component Parts for 299350

299351-0030	Probe Only, 30 mL	1	84.41
299351-0060	Probe Only, 60 mL	1	94.61
299352-0030	Funnel Only, 30 mL	1	292.99
299352-0060	Funnel Only, 60 mL	1	296.94
634623-0000*	Stopper Only	1	45.97

Component Parts for 634620

634621-0060	Probe Only, 60 and 125 mL	1	100.51
634621-0250	Probe Only, 250 mL	1	106.42
634621-0500	Probe Only, 500 mL	1	108.74
634622-0060	Funnel Only, 60 mL	1	296.94
634622-0125	Funnel Only, 125 mL	1	323.21
634622-0250	Funnel Only, 250 mL	1	340.29
634622-0500	Funnel Only, 500 mL	1	370.51
634623-0000*	Stopper Only	1	45.97

* Included with 299352 and 634622.



299350
634620

Constant Addition, ⅋ 24/40 Joints, with Jacket

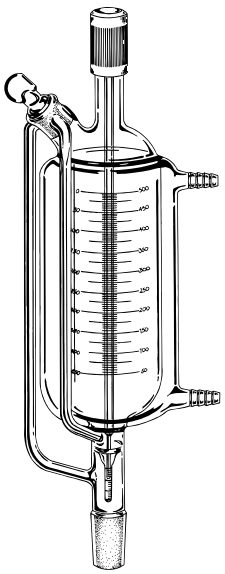
Steam jacketed version of our popular constant addition funnel for handling viscous substances. Hose connections on jacket allow the introduction of steam to heat funnel contents.

Kontes Article No.	Capacity (mL)	Lower ⅋ Joint	Hose Connections	Approx. Overall Height (mm)	Case Qty.	Case Price
634630-0125	125	24/40	#2	300	1	584.65
634630-0500	500	24/40	#2	390	1	638.51

Component Parts

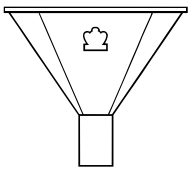
634621-0060	Probe Only, 60 and 125 mL	1	100.51
634621-0500	Probe Only, 500 mL	1	108.74
634632-0125	Funnel Only, 125 mL	1	483.51
634632-0500	Funnel Only, 500 mL	1	532.10
634623-0000*	Stopper	1	45.97

* Included with 634632.



634630

Hose Connector Tubing Size Chart	
Hose Connector Size	Fits Flexible Tubing I.D.
1	1/4"
2	3/8"
3	1/2"
4	3/4"

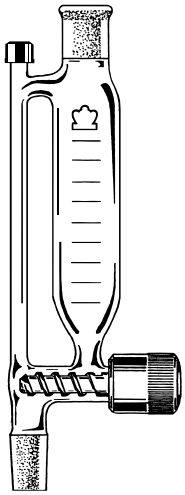


420405

Packing Reservoir, Economy, Polypropylene, FLEX-COLUMN®

The funnels are manufactured from polypropylene and are available in two capacities: 100 mL for the 0.7, 1.0 and 1.5 cm ID columns and 700 mL for the 2.5 cm columns. The funnels are used for initial column packing and as a small buffer reservoir.

Kontes Article No.	Capacity (mL)	Case Qty.	Case Price
420405-0100	100	12	78.20
420405-0700	700	5	78.20

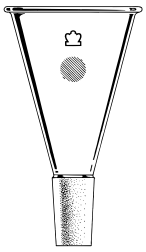


299400
629100
629110

Powder Addition, Ⓢ Joints, with PTFE Auger

Unique powder funnel delivers granular, free flowing solids to reactions. Single charges or a continuous flow is controlled with a specially-grooved PTFE auger. O-ring backed seal on auger shaft allows use in vacuum applications. Shaft is easily removed for cleaning. 500 mL size has a deep cut auger for delivery of coarse material and a clean-out plug on side arm.

Kontes Article No.	Ⓢ Joint	Capacity (mL)	Auger Size (mm)	Approx. Overall Height (mm)	Case Qty.	Case Price
299400-0015	14/20	15	4	215	1	168.16
299400-0050	14/20	50	4	185	1	198.40
629100-0125	24/40	125	8	320	1	244.38
629100-0500	24/40	500	12	350	1	296.94
629110-0500	29/42	500	12	355	1	358.68
Replacement Parts						
629101-0004	Auger, Size 4				1	64.50
629101-0008	Auger, Size 8				1	86.71
629101-0012	Auger, Size 12				1	145.85



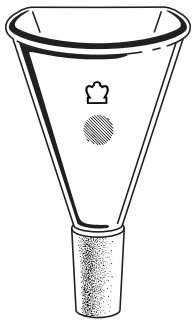
298000
629000

Powder Addition, Ⓢ Joint

Useful for the addition of reactants to a variety of flasks.

Kontes Article No.	Ⓢ Joint	Approx. Overall Height x Dia. (mm)	Case Qty.	Case Price
298000-0000	14/20	68 x 53	1	29.69
629000-0022	24/40	150 x 75	1	44.02
629000-0023	29/42	190 x 100	1	52.82

Flat Side



629200

Powder Addition, Modified, Ⓢ Joint

Designed with one side flattened to allow funnel to be used in multi-neck flasks where space is limited. Flat side dimension is the distance between the center of the standard taper inner joint and the flattened side of the funnel.

Kontes Article No.	Ⓢ Joint	Top Dia. (mm)	Flat Size Dimension (mL)	Case Qty.	Case Price
629200-0014	14/20	50	15	1	35.23
629200-0016	19/22	50	15	1	36.61
629200-0018	24/40	75	25	1	46.26
629200-0020	29/26	75	25	1	48.96
629200-0022	29/42	75	25	1	48.96
629200-0024	24/40	100	35	1	53.74
629200-0026	29/26	100	35	1	56.58
629200-0030	29/42	100	35	1	56.58
629200-0032	24/40	150	45	1	72.10
629200-0034	29/42	150	45	1	74.81



298030
629030

Powder Addition, Offset, Ⓢ Joint

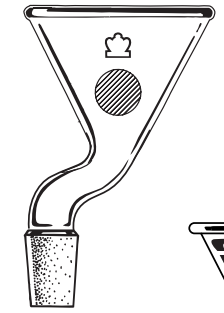
Funnel is designed with one side perpendicular to the joint for use with multi-neck flasks.

Kontes Article No.	Ⓢ Joint	Approx. Overall Height x Dia. (mm)	Case Qty.	Case Price
298030-0000	14/20	70 x 53	1	35.48
629030-0022	24/40	160 x 75	1	44.28

Powder Addition, Offset

Funnel has a lower stem made with an offset to permit use with multi-neck flasks.

Kontes Article No.	⅋ Joint Size	Top Diameter (mm)	Case Qty.	Case Price
629040-0023	24/40	75	1	59.86
629040-0024	29/42	75	1	63.92
629040-0025	24/40	100	1	64.88
629040-0026	29/42	100	1	67.88

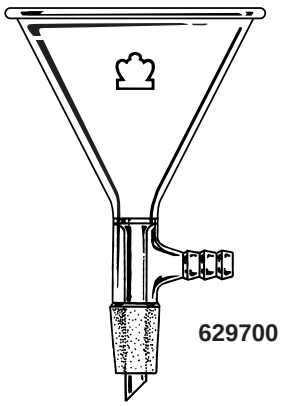


629040

Powder Addition, Vacuum with ⅋ Joint

These funnels are great for adding solids or liquids to reaction set ups under vacuum conditions. Applying a vacuum cuts filling time in half. The funnels have a 60° side angle and a standard taper inner joint.

Kontes Article No.	⅋ Joint Size	Top Diameter (mm)	Case Qty.	Case Price
629700-0014	14/20	50	1	32.48
629700-0015	19/22	50	1	33.91
629700-0018	24/40	100	1	42.74
629700-0020	29/42	100	1	52.99
629700-0022	29/42	150	1	63.54
629700-0024	45/50	150	1	71.52

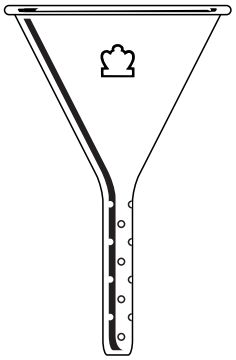


629700

Solvent Addition

Design permits addition of solvents to flash chromatography columns without disturbing the silica-gel / packing layer. Lower end of the funnel is closed and the stem has a series of small holes for solvent drainage. Funnel top is 75mm in diameter.

Kontes Article No.	Stem O.D. x Length (mm)	Case Qty.	Case Price
629500-0001	12 x 75	1	50.46
629500-0002	12 x 100	1	55.50
629500-0003	22 x 75	1	55.90
629500-0004	22 x 100	1	57.27
629500-0005	28 x 100	1	64.88
629500-0006	28 x 125	1	66.38



629500

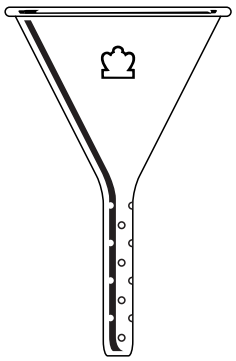
Solvent Addition Funnel, Polypropylene, Set of Five

Unbreakable, polypropylene solvent addition funnels for use with chromatography columns. The unique closed-end design facilitates gentle addition of solvent to the column. Perforated funnel stem permits solvent to pour down the column wall without disturbing the top layer of silica gel. Convenient assortment pack consists of five funnels for use with various column sizes. Approximate dimensions are provided below.

Funnel Dimensions

Funnel Size (mL)	Top O.D. (mm)	Stem O.D. (mm)	Stem Length (mm)	Approx. Overall Height (mm)
60	68	9	20	65
120	88	9	22	95
240	108	12	38	115
960	168	16	50	175
960	168	24	70	185

Kontes Article No.	Description	Case Qty.	Case Price
629050-0000	Funnel, Solvent Addition, Set of 5	5	63.40



629050



28980



46188



28900

Long Stem, 60° Angle, Wide Top, 6”

KIMAX funnel constructed with heavy uniform walls and strong, fire polished rims and stems to give a long service life. Funnels have a high resistance to chemical attack, mechanical, and thermal shock. Designed from ASTM Specification E1095, Type I, Class B requirements.

Kimble Article No.	Approx. Dia. (mm)	Approx. Cone Volume (mL)	Approx. Length of Stem (mm)	Approx. O.D. of Stem (mm)	Case Qty.	Case Price
28980-150	150	600	150	15	1	67.04
28980-200	200	1500	150	19	1	110.05
28980-250	250	2900	150	25	1	148.12

Long Stem, Thistle Top, 12”

KIMAX tube with a sturdy, extra long stem. Shape of the funnel is cylindrical (similar to the “thistle top” style).

Kimble Article No.	Approx. Length of Stem (mm)	Approx. O.D. of Stem (mm)	Case Qty.	Case Price
46188-65300	300	6.5	1	18.20
46188-65400	400	6.5	1	17.91

Long Stem, 58° Angle, 6”

KIMAX funnel constructed with heavy uniform walls and strong, molded rims and fire polished stems to give a long service life. Funnels have a high resistance to chemical attack and mechanical and thermal shock. The 58° funnel angle is a Kimble exclusive, formed to an exact angle for rapid filtration.

A piece of filter paper, when folded to form the filtering cone, forms a precise 60° angle. If the funnel is also 60°, as are the vast majority, then the only effective filtering area is down near the tip. The exclusive KIMAX 58° funnel promotes faster, more effective filtering because the cone is suspended by its uppermost edge, leaving most of the conical area for filtration.

Designed from ASTM Specification E1095, Type I, Class B requirements.

Kimble Article No.	Approx. I.D. at Funnel Top (mm)	Fits Paper of Dia. (mm)	Approx. Cone Vol. (mL)	Approx. Length of Stem (mm)	Approx. O.D. of Stem (mm)	Shelf-Pack Qty.	Case Qty.	Case Price
28900-55	55	90	36	150	8	12	48	310.08
28900-65	65	110	60	150	8	12	48	329.76
28900-75	75	125	90	150	8	12	48	355.20
28900-100	100	185	225	150	9	6	24	249.84

Short Stem, Filling, Powder, 1 1/2" Stem

KIMAX funnel with a short, wide stem. Constructed with a heavy uniform wall and a strong, fire polished rim and stem to give a long service life. Funnel has a high resistance to chemical attack and mechanical and thermal shock. Designed from ASTM Specification E1095, Type IV requirements.



29020

Kimble Article No.	Approx. Dia. at Funnel Top (mm)	Approx. Length of Stem (mm)	Approx. O.D. of Stem (mm)	I.D. (mm)	Shelf-Pack Qty.	Case Qty.	Case Price
29020-60	60	35	13	10	6	24	164.64
29020-80	80	35	15	12	6	24	183.60
29020-100	100	35	18	15	6	24	268.80
29020-125	125	35	19	15	2	12	254.76
29020-150	150	35	19	15	2	12	531.36

Short Stem, 58° Angle

KIMAX funnel constructed with heavy uniform walls and molded rims and fire polished stems to give a long service life. Funnels have a high resistance to chemical attack and mechanical and thermal shock. The 58° funnel angle is a Kimble exclusive, formed to an exact angle for rapid filtration.

A piece of filter paper, when folded to form the filtering cone, forms a precise 60° angle. If the funnel is also 60°, as are the vast majority, then the only effective filtering area is down near the tip. The exclusive KIMAX 58° funnel promotes faster, more effective filtering because the cone is suspended by its uppermost edge, leaving most of the conical area for filtration.

Designed from ASTM Specification E1095, Type I, Class A requirements.

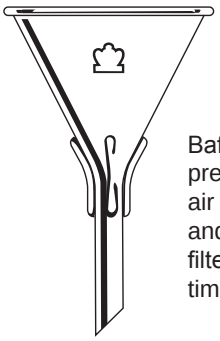


28950

Kimble Article No.	Approx. I.D. at Funnel Top (mm)	Fits Paper of Dia. (mm)	Approx. Cone Vol. (mL)	Approx. Length of Stem (mm)	Approx. O.D. of Stem (mm)	Shelf-Pack Qty.	Case Qty.	Case Price
28950-25	25	42.5	3	40	6	6	24	109.20
28950-35	35	55	8	50	6.5	6	24	143.52
28950-45	45	70	19	50	6.5	6	24	136.56
28950-55	55	90	36	63	8	12	48	382.08
28950-65	65	110	60	63	8	12	48	426.24
28950-75	75	125	90	75	8	12	48	460.80
28950-90	90	150	150	97	9	6	24	233.76
28950-100	100	185	225	97	9	6	24	297.84

Short Stem, Powder, Baffled

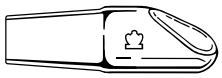
A piece of filter paper, when folded to form the filtering cone, makes a precise 60° angle. If the funnel is also 60°, as are the vast majority, then the only effective filtering area is down near the tip. The exclusive Kimax 58° funnel promotes faster, more effective filtering because the cone is suspended by its uppermost edge.



Baffles prevent air lock and speed filtering time.

629600

Kontes Article No.	Approx. I.D. at Funnel Top (mm)	Fits Paper of Dia. (mm)	Approx. Cone Vol. (mL)	Approx. Length of Stem (mm)	Approx. O.D. of Stem (mm)	Case Qty.	Case Price
629600-0025	25	42.5	3	35	13	6	29.18
629600-0035	35	55	8	35	13	6	37.05
629600-0045	45	70	19	35	13	6	40.46
629600-0055	55	90	36	35	13	1	11.97
629600-0065	65	110	60	35	13	1	14.25
629600-0075	75	125	90	35	18	1	16.53
629600-0090	90	150	150	35	18	1	18.81
629600-0100	100	185	225	35	18	1	21.08

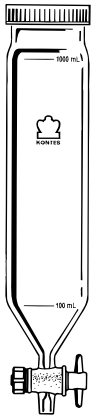


747600

Transfer / Weighing Funnel

Ideal for the easy transfer of liquids or powders. Flat bottom allows weighing.

Kontes Article No.	Fits Neck Dia. (mm)	Approx. Overall Height x Width (mm)	Case Qty.	Case Price
747600-0013	13 or less	13 x 60	1	16.41
747600-0020	20 or less	22 x 70	1	18.75



636100

Separatory, Floatable Oil and Grease, with PTFE Plug and Screw Cap

Used to determine oil and grease levels in turbulent waters. Large 70 mm opening facilitates sample collection. Calibration marks at 100 mL and 1 liter as required by the method. Polypropylene cap has a silicone-backed PTFE liner. PTFE stopcock plug is 821001.

Kontes Article No.	Capacity (mL)	GPI Thread	Case Qty.	Case Price
636100-1000	1000	70-400	1	203.71
636100-2000	2000	100-400	1	223.56

Ref: Standard Methods for the Examination of Water and Wastewater, 1989, 17th Edition, Method 2530C, pp. 2-69, and Method 5520B, pp. 5-43.



636000
636010

Separatory, Glass Plug, with or without Stopper

Squibb-type with $ joint and stopcock. Plain stem, but may be used with a 179800 adapter. Note stem diameter for a proper fit when using this adapter. Replacement stopper is listed under 850100. 636010 is supplied without a stopper. Plug is 801001.

Kontes Article No.	Capacity (mL)	$ Stopcock	$ Stopper	Stem O.D. (mm)	Approx. Overall Height (mm)	Case Qty.	Case Price
636000-0030	30	2	13	8	203	1	59.38
636010-0030	30	2	-	8	178	1	45.97
636000-0060	60	2	16	8	220	1	69.98
636010-0060	60	2	-	8	185	1	64.63
636000-0125	125	2	22	8	262	1	73.91
636010-0125	125	2	-	8	227	1	65.31
636000-0250	250	4	22	10	303	1	99.19
636010-0250	250	4	-	10	268	1	91.31
636000-0500	500	4	27	10	343	1	103.48
636010-0500	500	4	-	10	308	1	79.48
636000-1000	1000	4	27	10	395	1	149.78
636010-1000	1000	4	-	10	360	1	124.15
636000-2000	2000	6	38	13	437	1	215.48
636010-2000	2000	6	-	13	402	1	191.82
636000-3000	3000	8	38	16	500	1	250.97
636010-3000	3000	8	-	16	468	1	204.95
636000-6000	6000	10	38	16	560	1	366.57
636010-6000	6000	10	-	16	528	1	332.39



636030
636031

Separatory, PTFE Plug, with or without Stopper

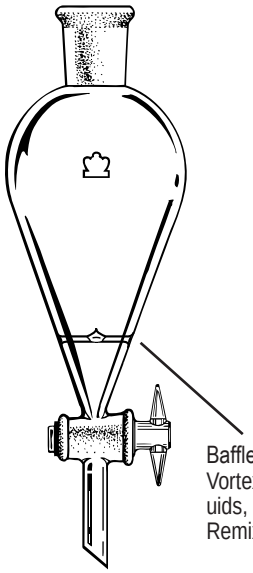
Squibb-type with $ joint and stopcock. Plain stem, but may be used with 179800 adapter. Note stem diameter for a proper fit when using this adapter. Replacement stopper is listed under 850100. 636031 is supplied without a stopper. With an 821001 1:5 taper PTFE stopcock plug.

Kontes Article No.	Capacity (mL)	$ Stopcock	$ Stopper	Stem O.D. (mm)	Approx. Overall Height (mm)	Case Qty.	Case Price
636030-0060	60	2	16	8	223	1	95.26
636031-0060	60	2	-	8	188	1	71.61
636030-0125	125	2	22	8	261	1	108.06
636031-0125	125	2	-	8	226	1	85.07
636030-0250	250	4	22	10	300	1	128.42
636031-0250	250	4	-	10	265	1	105.11
636030-0500	500	4	27	10	330	1	148.47
636031-0500	500	4	-	10	295	1	123.48
636030-1000	1000	4	27	10	390	1	194.45
636031-1000	1000	4	-	10	355	1	169.50
636030-2000	2000	6	38	13	438	1	258.83
636031-2000	2000	6	-	13	403	1	236.50
636030-4000	4000	10	38	16	542	1	314.01
636031-4000	4000	10	-	16	510	1	277.23
636030-6000	6000	10	38	16	560	1	366.57
636031-6000	6000	10	-	16	528	1	332.39

Separatory, Non-Vortexing, with PTFE plug

These separatory funnels prevent the vortexing of liquids during phase separation. The funnels are designed with an internal baffle plate to divert the liquids being separated from vortexing and then remixing. The funnels are supplied with PTFE stopcocks and ⅋ 29/42 center joints. The development and operation of this product is fully described in U.S. Patent *(Apparatus and Method for preventing vortexing of a liquid in a separatory funnel)* Sandra M. Griswold / Inventor DuPont Inc.

Kontes Article No.	Size (mL)	⅋ Joint	Case Qty.	Case Price
636200-0500	500	29/42	1	223.36
636200-1000	1000	29/42	1	298.24
636200-2000	2000	29/42	1	344.23
636200-4000	4000	29/42	1	381.01
636200-6000	6000	29/42	1	420.42



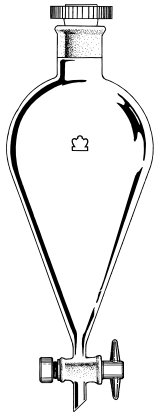
636200

Separatory, Short Stem, with PTFE Plug and Stopper

Designed for rapid extractions of environmental samples. Funnel top has a short drip tip and a ⅋ 34/28 opening for more convenient filling. The PTFE plug has a 6 mm bore for rapid transfer. Thick walls help resist breakage in the cleaning and drying cycle. Stopcock plug is 821001-0006.

Kontes Article No.	Capacity (mL)	⅋ Joint	Approx. Overall Height x Width (mm)	Case Qty.	Case Price
636040-0500	500	34/28	320 x 100	1	152.40
636040-1000	1000	34/28	370 x 130	1	190.50
636040-2000	2000	34/28	420 x 160	1	286.42

Component Parts			
636041-0500	Glass Funnel Only, 500 mL	1	83.68
636041-1000	Glass Funnel Only, 1000 mL	1	96.58
636041-2000	Glass Funnel Only, 2000 mL	1	170.81
821001-0006	PTFE Stopcock Plug, Size 6, ⅋ 16/35	1	20.27
850540-0034	PTFE Stopper, ⅋ Size 34	1	33.27

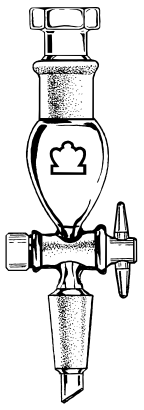


636040

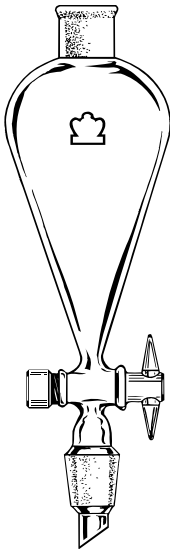
Separatory, Micro, PTFE Plug, ⅋ 14/20 Joints, with or without Stopper

Squibb-type funnel with a size 2 mm PTFE stopcock. Plug is 821001. Hex-head stopper is included with 298280. Series 298281 is supplied without stoppers.

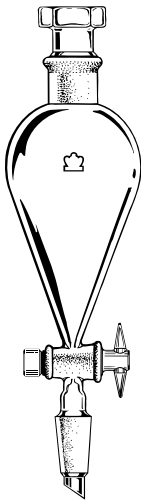
Kontes Article No.	Capacity (mL)	⅋ Joints	Stopper	Approx. Overall Height (mm)	Case Qty.	Case Price
298280-0010	10	14/20	850400-1420	141	1	99.19
298281-0010	10	14/20	-	125	1	87.36
298280-0025	25	14/20	850400-1420	171	1	99.19
298281-0025	25	14/20	-	155	1	87.36
298280-0050	50	14/20	850400-1420	176	1	99.19
298281-0050	50	14/20	-	160	1	87.36
298280-0125	125	14/20	850400-1420	206	1	103.14
298281-0125	125	14/20	-	190	1	89.33



298280
298281



298290



636280
636281



29043F



29048T



29048F

Separatory, Squibb, Pear-Shaped, ⅋ 19/22 Joints, PTFE Plug

Squibb-type funnel with a heavy-duty drip joint at the bottom and a 821001 PTFE stopcock plug.

Kontes Article No.	Capacity (mL)	⅋ Joints	Stopcock Size (mm)	Approx. Overall Height (mm)	Case Qty.	Case Price
298290-0060	60	19/22	2	184	1	104.15
298290-0125	125	19/22	2	210	1	89.01
298290-0250	250	19/22	2	250	1	126.14
298290-0500	500	19/22	2	285	1	132.71

Separatory, Squibb, Pear-Shaped, ⅋ 24/40 Joints, PTFE Plug, with or without Stopper

Squibb-type with 821001 PTFE stopcock plug. Replacement stoppers are listed under 850400. 636281 is supplied without a stopper.

Kontes Article No.	Capacity (mL)	⅋ Joint	Stopcock	⅋ Stopper	Approx. Overall Height (mm)	Case Qty.	Case Price
636280-0500	500	24/40	4	24/25	328	1	157.66
636281-0500	500	24/40	4	-	305	1	132.71
636280-1000	1000	24/40	4	24/25	388	1	258.83
636281-1000	1000	24/40	4	-	365	1	236.50
636280-2000	2000	24/40	6	24/25	437	1	315.32
636281-2000	2000	24/40	6	-	414	1	290.36

Separatory, Globe, ⅋ Stopper, with PTFE Stopcock

KIMAX funnel is supplied with a ⅋ ground glass stopper and a PTFE stopcock. Gradually tapering shoulders and a wide neck facilitate cleaning. Sharp separations are provided for by a narrow bore in the body just above the stopcock. Designed from ASTM Specification E1096, Type 2 requirements. **Replacement stopper is 41900R. Replacement stopcock plug is 41500F.**

Kimble Article No.	Capacity (mL)	⅋ Stopcock Size	⅋ Stopper	Length of Stem (mm)	Case Qty.	Case Price
29043F-125	125	2	22	175	1	100.15
29043F-250	250	2	22	175	1	123.58

Separatory, Squibb, Pear-Shaped, ⅋ Stopper, with Totally Autoclavable PTFE Stopcock Plug

KIMAX funnel is supplied with a ⅋ ground glass stopper and a totally autoclavable PTFE stopcock plug. Lower stems have an I.D. large enough so that a column of liquid will “break” with the stopcock closed, thereby giving a more complete separation and eliminating the necessity of emptying the funnel. Designed from ASTM Specification E1096, Type 4 requirements. **Replacement stopper is 41900R.**

Kimble Article No.	Capacity (mL)	⅋ Stopcock Size	⅋ Stopper	Length of Stem (mm)	Shelf-Pack Qty.	Case Qty.	Case Price
29048T-60	60	2	16	60	2	4	322.16
29048T-125	125	2	22	60	2	4	333.68
29048T-250	250	4	22	60	2	4	395.16
29048T-500	500	4	27	60	1	4	455.68
29048T-1000	1000	4	27	60	1	2	315.32
29048T-2000	2000	6	38	60	1	2	451.88

Separatory, Squibb, Pear-Shaped, ⅋ Stopper, with PTFE Stopcock

KIMAX funnel is supplied with a ⅋ ground glass stopper and a PTFE stopcock. Lower stems have an I.D. large enough that a column of liquid will “break” with the stopcock closed, thereby giving a more complete separation and eliminating the necessity of emptying the funnel. Designed from ASTM Specification E1096, Type 4 requirements.

Kimble Article No.	Capacity (mL)	⅋ Stopcock Size	⅋ Stopper	Length of Stem (mm)	Shelf-Pack Qty.	Case Qty.	Case Price
29048F-30	30	2	13	60	2	4	262.44
29048F-60	60	2	16	60	2	4	334.68
29048F-125	125	2	22	60	2	4	323.32
29048F-250	250	4	22	60	2	4	383.40
29048F-500	500	4	27	60	1	4	440.32
29048F-1000	1000	4	27	60	1	2	303.70
29048F-2000	2000	6	38	60	1	2	438.24

Separatory, Squibb, Pear-Shaped, Plastic Stopper, with PTFE Stopcock

KIMAX funnel is supplied with a closed-bottom linear, high-density polyethylene stopper to fit in the ⅋ ground neck, and a PTFE stopcock. Lower stems have an I.D. large enough that a column of liquid will "break" with the stopcock closed, thereby giving a more complete separation and eliminating the necessity of emptying the funnel. Designed from ASTM Specification E1096, Type 4 requirements. **Replacement stopcock plug is 41500F. Replacement stopper is 28160R.**

Kimble Article No.	Capacity (mL)	⅋ Stopcock Size	Stopper Size and ⅋ Neck Size	Length of Stem (mm)	Shelf-Pack Qty.	Case Qty.	Case Price
29049F-125	125	2	22	60	2	4	315.56
29049F-250	250	4	22	60	2	4	377.20
29049F-500	500	4	27	60	1	4	431.72
29049F-1000	1000	4	27	60	1	2	300.08
29049F-2000	2000	6	38	60	1	2	433.46



29049F

Replacement Parts for 29048F and 29049F

29048G Funnel Only

Replacement part for 29048F and 29049F as supplied with a LUBRI-FLOW stopcock barrel.

Kimble Article No.	Capacity (mL)	Max. O.D. (mm)	Case Qty.	Case Price
29048G-250	250	75	1	71.02
29048G-2000	2000	150	1	156.96



29048G

Separatory, Squibb, Pear-Shaped, ⅋ Stopper, with Glass Stopcock

KIMAX funnel is supplied with a ⅋ ground glass stopcock and stopper. Lower stems have an I.D. large enough that a column of liquid will "break" with the stopcock closed, thereby giving a more complete separation and eliminating the necessity of emptying the funnel. Designed from ASTM Specification E1096, Type 4 requirements. **Replacement stopper is 41900R.**

Kimble Article No.	Capacity (mL)	⅋ Stopcock Size	⅋ Stopper	Length of Stem (mm)	Shelf-Pack Qty.	Case Qty.	Case Price
29048-60	60	2	16	60	2	6	411.72
29048-125	125	2	22	60	2	6	445.86
29048-250	250	4	22	60	2	4	350.56
29048-500	500	4	27	60	1	4	448.24
29048-1000	1000	4	27	60	1	2	312.42



29048

Separatory, Squibb, RAY-SORB®, Pear-Shaped, Color-Coded PTFE Stopper, with PTFE Stopcock

KIMAX funnel is supplied with a ⅋ PTFE stopper and a PTFE stopcock. Lower stems have an I.D. large enough that a column of liquid will "break" with the stopcock closed, thereby giving a more complete separation and eliminating the necessity of emptying the funnel. RAY-SORB processed to protect materials sensitive to the light of shorter wavelengths. Designed from ASTM Specification E1096, Type 4 requirements. **Replacement stopcock plug is 41500F. Replacement stopper is 41901R.**

Kimble Article No.	Capacity (mL)	⅋ Stopcock Size	⅋ Stopper	Handle Color	Length of Stem (mm)	Case Qty.	Case Price
29052F-125	125	2	22	Yellow	60	1	141.73
29052F-250	250	4	22	Yellow	60	1	156.22
29052F-500	500	4	27	Red	60	1	184.32

Red Tinted Glassware Blocks Harmful UV



29052F



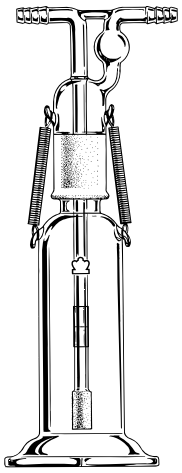
15060



15065



28220



657250

Gas Washing Bottle, Tall Form, Medium Length, ⅋ Stopper

KIMAX bottle for washing or drying gases. Gas enters the bottle through the center tube and exits into the bottom of the bottle. On rising through the washing or drying medium it is thereby washed or dried and passes out of the bottle through the side tube of the bottle stopper. Both inlet and outlet tubes accept 1/4 inch I.D. flexible tubing. The 125 mL size is sometimes refered to as a "Dreschel" type.

Kimble Article No.	Capacity (mL)	Approx. Assembled Height (mm)	⅋ Stopper	Case Qty.	Case Price
15060-125	125	308	34/28	1	138.36
15060-250	250	328	34/28	1	146.56
15060-500	500	400	34/28	1	176.34

Gas Washing Bottle, Short Form, Medium Length, ⅋ Stopper

KIMAX bottle for washing or drying gases. Shorter and wider than the 15060 bottles. Gas enters the bottle through the center tube and exits into the bottom of the bottle. On rising through the washing or drying medium it is thereby washed or dried and passes out of the bottle through the side tube of the bottle stopper. Both inlet and outlet tubes accept 1/4 inch I.D. flexible tubing.

Kimble Article No.	Capacity (mL)	Approx. Assembled Height (mm)	⅋ Stopper	Case Qty.	Case Price
15065-250	250	256	34/28	1	136.51

Gas Washing Bottle, Tall Form, Medium Length, ⅋ Stopper with KIMFLOW® Fritted Cylinder

KIMAX bottle used to wash or dry (scrub) gases of undesirable constituents. Gas enters the bottle through the center tube and exits at the bottom of the bottle through a fritted cylinder approximately 12 mm in diameter. The gas is dispersed into small bubbles, promoting complete absorption of undesirable constituents that are to be removed from the gas flow, as the gas rises to the top and exits through the side tube. Both the inlet and outlet tubes accept 1/4 inch I.D. flexible tubing.

Kimble Article No.	Capacity (mL) and Porosity	Approx. Assembled Height (mm)	⅋ Stopper	Case Qty.	Case Price
28220-5001	500 Coarse	400	34/28	1	219.44

Gas Washing Bottle, Tall Form, Full Length, ⅋ Stopper

Tall form with fritted cylinder to maximize dispersion. Available in two porosities: extra coarse (EC) and coarse (C). Supplied complete with hooks and two 2" springs. A 675300 polyacetal clamp will work in place of the springs.

Kontes Article No.	Capacity (mL)	Porosity	⅋ Joints	Hose Connectors	Approx. Overall Height (mm)	Case Qty.	Case Price
657250-1223	125	C	29/42	#2	325	1	157.66
657250-1225	125	EC	29/42	#2	325	1	157.66
657250-2523	250	C	29/42	#2	315	1	164.22
657250-2525	250	EC	29/42	#2	315	1	164.22
657250-5023	500	C	29/42	#2	435	1	180.00
657250-5025	500	EC	29/42	#2	435	1	180.00

Component Parts

657251-1223*	Dispersion Tube, C, 125 (and 250) mL	1	108.74
657251-1225*	Dispersion Tube, EC, 125 (and 250) mL	1	108.74
657251-5023*	Dispersion Tube, C, 500 mL	1	112.99
657251-5025*	Dispersion Tube, EC, 500 mL	1	112.99
657002-0125	Bottle, 125 mL	1	47.30
657002-0250	Bottle, 250 mL	1	54.01
657002-0500	Bottle, 500 mL	1	65.43
662750-0002	Springs, 2", Pkg./10 Pairs	20	86.84

*Fritted dispersion tube tips are connected with a PTFE sleeve and are easily replaced.

Gas Washing Bottle, Tall Form, Full Length, ⅋ Stopper

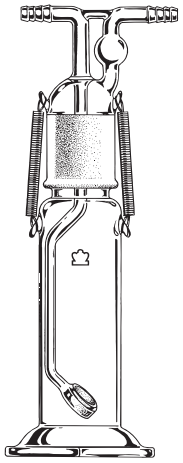
Unit contains a fritted disc for more uniform gas distribution throughout the absorbing material. Available in two porosities: extra coarse (EC) and coarse (C). Supplied complete with hooks and two 2” springs.

Kontes Article No.	Capacity (mL)	Porosity	⅋ Joints	Hose Connectors	Approx. Overall Height (mm)	Case Qty.	Case Price
657750-1223	125	C	40/50	#2	335	1	164.22
657750-1225	125	EC	40/50	#2	335	1	164.22
657750-2523	250	C	40/50	#2	315	1	195.76
657750-2525	250	EC	40/50	#2	315	1	195.76
657750-5023	500	C	40/50	#2	430	1	208.91
657750-5025	500	EC	40/50	#2	430	1	208.91

Component Parts

657751-1223*	Dispersion Tube, C, 125 mL	1	112.15
657751-1225*	Dispersion Tube, EC, 125 mL	1	107.08
657751-2523*	Dispersion Tube, C, 250 mL	1	123.16
657751-2525*	Dispersion Tube, EC, 250 mL	1	123.16
657751-5023*	Dispersion Tube, C, 500 mL	1	127.11
657751-5025*	Dispersion Tube, EC, 500 mL	1	127.11
657752-0125	Bottle, 125 mL	1	59.65
657752-0250	Bottle, 250 mL	1	70.28
657752-0500	Bottle, 500 mL	1	79.48
662750-0002	Springs, 2”, Pkg./10 Pairs	20	86.84

*Fritted dispersion tube tips are connected with a PTFE sleeve and are easily replaced.



657750

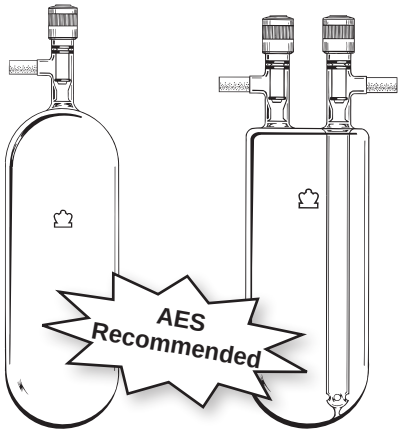
Atmospheric Environmental Bottle, 2000 mL

The design of our Atmospheric Environmental Bottle is recommended by the Atmospheric Environment Service (AES). Available in either a single or double valve configuration.

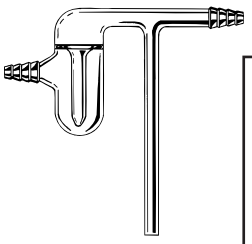
Several unique design features include:

- A plastic coating for safety.
- Borosilicate glass high vacuum plug valve stems instead of PTFE stems, eliminating the chance of outgassing.
- FKM valve stem o-rings that are easily changed depending on the application and possibility of contamination.
- Inlet stems ground 1/2” O.D.

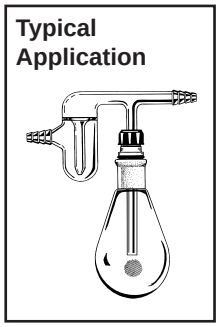
Kontes Article No.	Description	Capacity (mL)	O-Ring Size Shaft-Tip	Approx. Overall Height x Width (mm)	Case Qty.	Case Price
653200-2000	Single Valve Model	2000	110-108	345 x 100	1	297.62
653210-2000	Double Valve Model	2000	110-108	345 x 135	1	357.16



653200 **653210**



652240



Bubbler, Gas

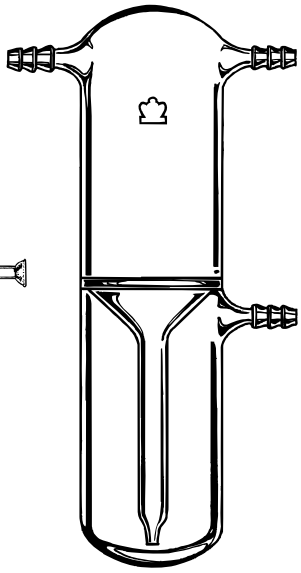
Designed to monitor gas flow to reactions. It can be used with nitrogen or argon to provide an inert atmosphere, or gaseous reagents such as acetylene or ammonia can be added to reactions. Unit may be used with 179700 or 179800 adapters. This provides access to most standard taper systems.

Kontes Article No.	Stem O.D. (mm)	Hose Connections	Approx. Overall Height x Width (mm)	Case Qty.	Case Price
652240-0000	8	#2	135 x 135	1	42.94

Bubbler, Gas

For gas washing, bubble counting, etc. Extra opening provides a safety release in the event of overpressure.

Kontes Article No.	Hose Connections	Aprox. Overall Height x Width (mm)	Case Qty.	Case Price
652250-0000	#2	190 x 51	1	88.08

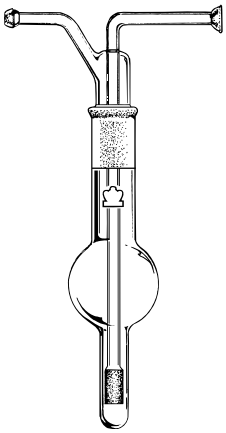


652250

Gas Bubbler, Sampling, Fritted, ⧩ 29/42, Short Form with ⧩ 18/7

A high velocity impinger used for determining the dust concentration in air or other gases. Fritted tube has vertical ⧩ 18/7 spherical joints for connection in a series. Connecting adapters are available under catalog number 737575. Similar to 652260, except bottom tube is shortened to 50 mm. Fritted filter is Coarse (C) porosity.

Kontes Article No.	Tube Capacity Below Bulb (mL)	Approx. Overall Height(mm)	Case Qty.	Case Price
652265-0000	10	245	1	119.06
Component Parts				
652266-0000	Fritted Tube, ⧩ 29/42, ⧩ 18/7		1	86.63
652267-0000	Receiver, ⧩ 29/42		1	32.40

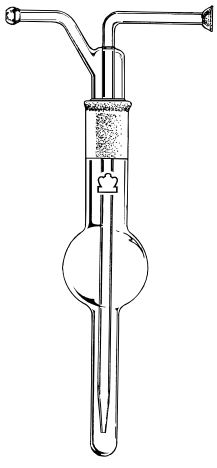


652265

Gas Bubbler, Smog, Drawn Tip, ⧩ 24/40, Long Form with ⧩ 12/5

EPA-type which can be used individually or connected in a series. Lower tube has an expanded area to break up foam should it form. ⧩ 12/5 socket on inlet and ball on outlet opposite ends. With drawn tip.

Kontes Article No.	Tube Capacity Below Bulb (mL)	Approx. Overall Height(mm)	Case Qty.	Case Price
652650-2440	20	285	1	118.07
Component Parts				
652651-2440	Dispersion Tube, ⧩ 24/40, ⧩ 12/5		1	85.32
652262-2440	Receiver, ⧩ 24/40		1	32.40

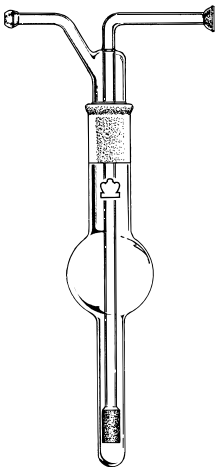


652650

Gas Bubbler, Smog, Fritted, ⧩ 24/40, Long Form with ⧩ 12/5

This bubbler is recommended by the Environmental Protection Agency in their training courses for new personnel in the field of environmental pollution. The 100 mL bottom tube will contain a full 20 mL volume, allowing more uniform absorption rates to be measured than with other bubblers of this type. Bubblers are interchangable, maintaining centering and clearance to the bottom inside surface. Fritted filter is Coarse (C) porosity.

Kontes Article No.	Tube Capacity Below Bulb (mL)	Approx. Overall Height(mm)	Case Qty.	Case Price
652260-2440	20	285	1	116.74
Component Parts				
652261-2440	Fritted Tube, ⧩ 24/40, ⧩ 12/5		1	84.34
652262-2440	Receiver, ⧩ 24/40		1	32.40



652260

For Accessory **Gas Sampling Connectors**, see the last page of this section.

Midget Bubbler, ⅋ 24/40, Graduated

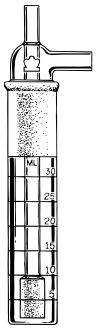
Designed with an Extra Coarse (EC) fritted dispersion tube (170-220 microns nominal) instead of a tapered tube as in 737550. The fritted tube enhances absorption by trapping the liquid.

Kontes Article No.	Capacity (mL)	Graduations x Subdiv. (mL)	Approx. Overall Height (mm)	Case Qty.	Case Price
737600-0000	30	5-30 x 5	180	1	59.94

Component Parts

737601-0000	Fritted Tube, ⅋ 24/40	1	39.29
737552-0000	Receiver, ⅋ 24/40, 30 mL	1	20.37

Ref: R.I. 3360.



737600

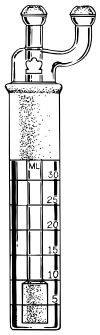
Midget Bubbler, ⅋ 24/40, Graduated with ⅌ 12/5

Designed with an Extra Coarse (EC) fritted dispersion tube (170-220 microns nominal) instead of a tapered tube as shown in 737550. The fritted tube enhances absorption by trapping the liquid.

Kontes Article No.	Capacity (mL)	Graduations x Subdiv. (mL)	Approx. Overall Height (mm)	Case Qty.	Case Price
737610-0000	30	5-30 x 5	180	1	80.70

Component Parts

737611-0000	Fritted Tube, ⅋ 24/40, ⅌ 12/5	1	69.13
737552-0000	Receiver, ⅋ 24/40, 30 mL	1	20.37



737610

Midget Impinger, ⅋ 24/40, Graduated

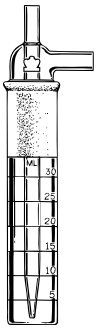
The midget impinger is almost identical in principle and design to the Greenburg-Smith impinger, except for its smaller size. Only a 12" head of water is required. The orifice at the bottom of the impinger is 1 mm, passing 0.09-0.11 CFM of air at 12" H_2O vacuum. Pieces are interchangable, maintaining nozzle centering and clearance to the bottom inside surface. These impingers were designed for the sampling of small air volumes with a low jet velocity.

Kontes Article No.	Capacity (mL)	Graduations x Subdiv. (mL)	Approx. Overall Height (mm)	Case Qty.	Case Price
737550-0000	30	5-30 x 5	180	1	54.38

Component Parts

737551-0000	Dispersion Tube, ⅋ 24/40	1	34.14
737552-0000	Receiver, ⅋ 24/40, 30 mL	1	20.37

Ref: US Public Health Service Publication No. 999-AP-11. ASTM D2912.



737550

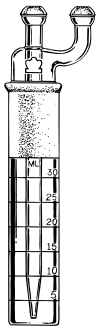
Midget Impinger, ⅋ 24/40, Graduated with ⅌ 12/5

The midget impinger is almost identical in principle and design to the Greenburg-Smith impinger, except for its smaller size. Only a 12" head of water is required. The orifice at the bottom of the impinger is 1 mm, passing 0.09-0.11 CFM of air at 12" H_2O vacuum. Pieces are interchangable, maintaining nozzle centering and clearance to the bottom inside surface. Dispersion tube has ⅌ 12/5 spherical joints for connection in a series. These impingers were designed for the sampling of small air volumes with a low jet velocity.

Kontes Article No.	Capacity (mL)	Graduations x Subdiv. (mL)	Approx. Overall Height (mm)	Case Qty.	Case Price
737560-0000	30	5-30 x 5	180	1	79.37

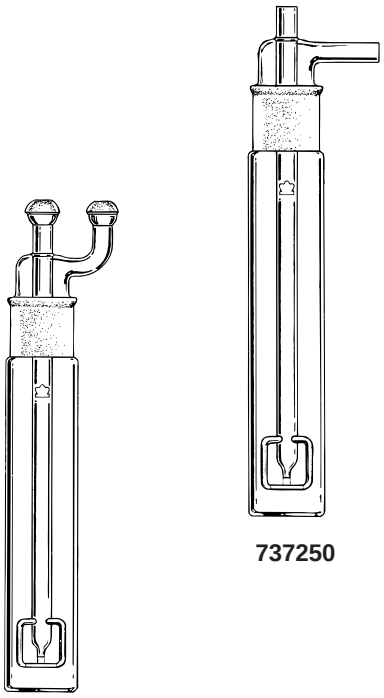
Component Parts

737561-0000	Dispersion Tube, ⅋ 24/40, ⅌ 12/5	1	60.74
737552-0000	Receiver, ⅋ 24/40, 30 mL	1	20.37



737560

For Accessory **Gas Sampling Connectors**, see the last page of this section.



737250

737260

Impinger, Greenburg-Smith, ⧩ 45/50 Joint, Plain

A high velocity impinger used for determining the dust concentration in air or other non-condensable gases.

Kontes Article No.	Capacity (mL)	Approx. Overall Height (mm)	Case Qty.	Case Price
737250-0000	500	290	1	318.79

Component Parts

737251-0000	Dispersion Tube, ⧩ 45/50	1	269.85
737252-0000	Receiver, ⧩ 45/50, 500 mL	1	74.42

Ref: Public Health Bulletin No. 217, Vol. 52, No. 33.

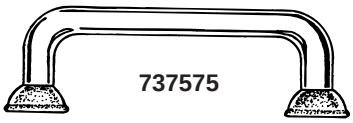
Impinger, Greenburg-Smith, ⧩ 45/50 Joint, Plain with ⧘ Connections

A high velocity impinger used for determining the dust concentration in air or other non-condensable gases. Dispersion tube has vertical spherical joints for connection in a series. Connecting adapters are available under catalog number 737575.

Kontes Article No.	Capacity (mL)	⧘ Size	Approx. Overall Height (mm)	Case Qty.	Case Price
737260-2815	500	28/15	290	1	220.91

Component Parts

737261-2815	Dispersion Tube, ⧩ 45/50, ⧘ 28/15	1	148.16
737252-0000	Receiver, ⧩ 45/50, 500 mL	1	74.42



737575

Impinger Connector, ⧘ Joints

U-shaped connecting adapter, with spherical joints at each end, for connecting impingers in a series.

Kontes Article No.	⧘ Joints	Case Qty.	Case Price
737575-2815	28/15	1	62.97

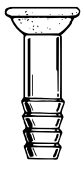


523860

Inlet, Hose Connector, ⧘ Ball Only

O-ring socket joint hose connector. Standard ⧘ sizes fit existing apparatus using spherical joints and permit attachment of flexible hose without costly modification of the apparatus. Supplied complete with a FKM O-ring.

Kontes Article No.	⧘ Size	Hose Connection	O-ring Size	Case Qty.	Case Price
523860-0125	12/5	#1	5-134	1	39.93
523860-0189	18/9	#3	5-135	1	40.98
523860-2815	28/15	#4	020	1	42.66
523860-3525	35/25	#4	024	1	58.98



523870

Inlet, Hose Connector, ⧘ Socket Only

O-ring socket joint hose connector. Standard ⧘ sizes fit existing apparatus using spherical joints and permit attachment of flexible hose without costly modification of the apparatus.

Kontes Article No.	⧘ Size	Hose Connection	Case Qty.	Case Price
523870-0125	12/5	#1	1	25.58
523870-0189	18/9	#3	1	26.88
523870-2815	28/15	#4	1	29.48
523870-3525	35/25	#4	1	34.34

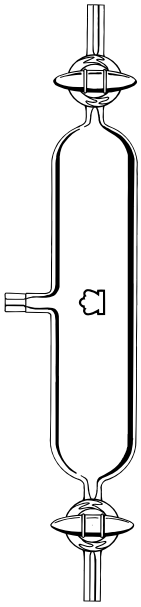
For **Hose Connector to Standard Taper Adapter**, see the ***Adapters*** section.

Tube, with ⅌ Stopcocks

For the collection and subsequent analysis of environmental samples. Stopcocks are sealed close to the main body to prevent trapping of gases. Sidearm septum holder retains 774200 stopper (or 774250 rubber sleeve stopper) for access with a gas-tight syringe. Supplied with one 774200 blind hole stopper.

Kontes Article No.	Capacity (mL)	Stopcock Bore (mm)	Approx. Overall Length (mm)	Case Qty.	Case Price
653100-0022	250	3	240	1	149.49

Ref: ASTM D888



653100

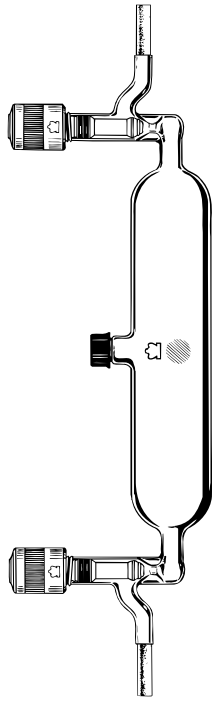
Tube, with PTFE Valves

Designed for the collection and storage of environmental samples. High vacuum valves are provided for evacuation and filling. Open top cap with a PTFE/silicone septum allows analytical samples to be withdrawn. Both ends are ground to accept 3/8" ferrules and hand compressible fittings for a gas-tight seal. Each size has a marking area for easy identification. Valve plug is 826601-0004.

Kontes Article No.	Capacity (mL)	GPI Thread Size	Approx. Overall Height x Width (mm)	Case Qty.	Case Price
653150-0125	125	13-425	90 x 345	1	111.45
653150-0250	250	13-425	95 x 290	1	124.00
653150-0500	500	13-425	100 x 350	1	136.26

Component Parts

653151-0125	Gas Sampling Tube, Glass Only, 125 mL	1	79.71
653151-0250	Gas Sampling Tube, Glass Only, 250 mL	1	78.70
653151-0500	Gas Sampling Tube, Glass Only, 500 mL	1	95.91
410116-1325	Cap, Black Phenolic, 13-425, Pkg./48 (1 Supplied)	48	6.48
774161-0013	Septum, PTFE/Silicone, 13 mm, Pkg./48 (1 Supplied)	48	34.65
826601-0004	Valve Plug, 4 mm	1	8.14



653150

Tube, with ⅌ Stopcock

KIMAX gas collecting tube with tubulations on each end of the tube that accept 5/16 inch I.D. flexible tubing for the 125 mL size and 3/8 inch I.D. tubing for the 250 and 500 mL sizes.

Kimble Article No.	Capacity (mL)	Approx. O.D. (mm)	Approx. Length (mm)	⅌ Stopcock Size	Case Qty.	Case Price
30040-500	500	65	360	4	1	293.59



30040

Tube, with PTFE LUBRIFLO® Stopcocks

KIMAX gas collecting tube with tubulations on each end of the tube that accept 3/8 inch I.D. flexible tubing. **Replacement PTFE stopcock plug is 41500F.**

Kimble Article No.	Capacity (mL)	Approx. O.D. (mm)	Approx. Length (mm)	⅌ Stopcock Size	Case Qty.	Case Price
30040F-250	250	50	330	4	1	166.66



30040F

Hose Connector Tubing Size Chart

Hose Connector Size	Fits Flexible Tubing I.D.
1	1/4"
2	3/8"
3	1/2"
4	3/4"

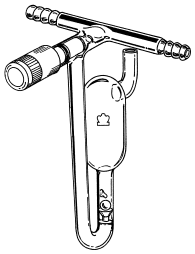


956500

Tube, Dispersion, Gas

Gas dispersion tube with a hollow fritted cylinder at the end of the tube. Available with a fine (F), coarse (C) or extra coarse (EC) porosity cylinder.

Kontes Article No.	Approx. Cylinder Height x O.D. (mm)	Porosity	Stem Dia. (mm)	Approx. Overall Height (mm)	Case Qty.	Case Price
956500-0022	24 x 13	F	8	250	1	26.33
956500-0023	24 x 13	C	8	250	1	44.02
956500-0025	24 x 13	EC	8	250	1	44.02



216100

Pressure Release Valve

Designed for applications that require evacuated apparatus to be filled with an inert gas to one atmosphere. Uses include the introduction of an inert gas into a vacuum desiccator or nitrogen into Airless-ware® apparatus. A pressure release valve should be placed between the nitrogen source and nitrogen manifold on all Airless-ware manifold installations.

Operation: Three mL of paraffin or silicone oil is added to the bubbler. One arm is connected to the low-pressure gas source, the other to the manifold or Airless-ware equipment. The check valve prevents oil or air from surging into the apparatus.

Kontes Article No.	Hose Connectors	Approx. Overall Height x Width x Depth (mm)	Case Qty.	Case Price
216100-0000	#2	130 x 80 x 102	1	152.63

Hose Connector Tubing Size Chart

Hose Connector Size	Fits Flexible Tubing I.D.
1	1/4"
2	3/8"
3	1/2"
4	3/4"

Mantle, Hemispherical Heating, Round Bottom

A safe and convenient heat source for round bottom flasks and apparatus. Power control 730500 or equivalent is required for operation of all mantles except 302000-0010 and 302111-0025. For those sizes, use 730900-0000. The 200 through 12000 mL sizes are available as 230 volt units. All 115V mantles are CSA certified.

Kontes Article No.	Flask Capacity (mL)	Watts / Volt	Case Qty.	Case Price
302000-0010	10	20W-30V	1	87.64
302000-0025	25	25W-25V	1	169.31
721000-0050	50	60W-115V	1	113.44
721000-0100	100	80W-115V	1	119.72
721000-0250	250	180W-115V	1	128.64
721000-0500	500	270W-115V	1	156.09
721000-1000	1000	380W-115V	1	171.98
721000-2000	2000	500W-115V	1	190.47
721000-3000	3000	500W-115V	1	202.37
721000-5000	5000	600W-115V	1	240.74
721000-1200	12000	2\@650W-115V	1	496.05

Flask Not Included



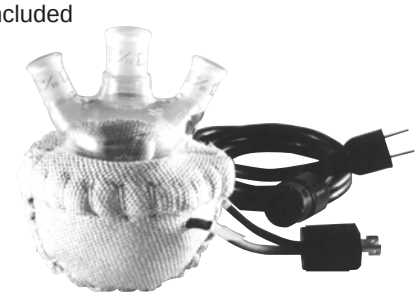
302000
721000

Mantle, Hemispherical Heating, Pear-Shaped

A safe and convenient heat source for BANTAM-WARE® pear-shaped flasks. Control 730900 or equivalent is necessary for sizes 10 through 50 mL. Control 730500 or its equivalent is necessary for the 100 mL size.

Kontes Article No.	Flask Capacity (mL)	Watts / Volt	Case Qty.	Case Price
302250-0010	10	15W-30V	1	100.17
302250-0025	25	25W-60V	1	116.34
302250-0050	50	35W-60V	1	129.35
302250-0100	100	70W-115V	1	131.45

Flask Not Included



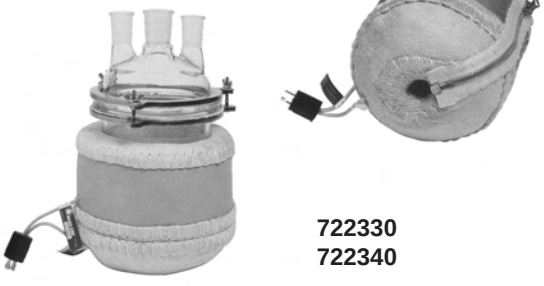
302250

Mantle, Reaction Flask, Heating

The even heat distribution of these resin reaction flask mantles prevents scorching of clear resinous materials. Supplied with separable, 4 foot, 2-wire, SJT cords. CSA certified.

Kontes Article No.	Flask Capacity (mL)	Flask Dia., Inches	Mantle Depth, Inches	Watts / Volt	Case Qty.	Case Price
722330-1000	1000	4.5	4.5	270W-115V	1	292.33
722330-2000	2000	4.5	7.5	400W-115V	1	301.60
722340-5000	5000	6.5	12.5	750W-115V	1	586.00

Flask and Clamp Not Included



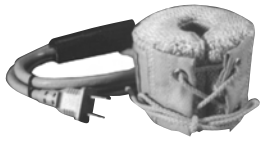
722330
722340

Heating Mantle for Concentrator Tubes

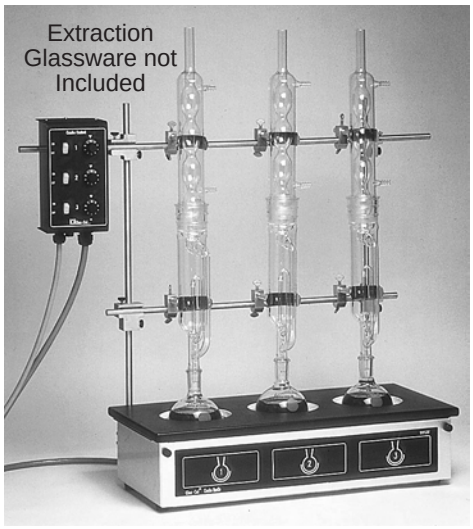
A column type heating mantle with a 7/8" ID to accommodate evaporative concentrator tubes and similar size items with straight-walled glass tubing. The mantle is cylindrical and open through the ID to allow positioning on the glassware. The mantle can be supported with a clamp (no plastic tips) or laced tight against the glassware to prevent the mantle from slipping off. The concentrator tube is placed through the mantle so the lower tip is well below the bottom opening of the mantle. This will help prevent the sample from being evaporated to dryness. The mantle is plugged into a mantle control Kontes No. 730500 or several mantles can be plugged into an utility outlet strip which gets plugged into the mantle control for operating multiple units at the same temperature. The unit is rated 50/60 hertz and 1 amp, with a maximum temperature rating of 450 °C.

Supplied with a separable 4 foot, 2 wire SJT cord.

Kontes Article No.	Hole Diameter (mm)	Watts / Volts	Case Qty.	Case Price
729000-1022	22	100 / 115	1	238.38



729000



726123 with optional power controller



726170

Heating Mantle with Replaceable Elements

This lower profile heating mantle for round bottom boiling flasks allow the user to replace an individual heating element on site, thus eliminating costly downtime due to element failure. The elements also act as spill containment chambers, reducing damage to other parts of the mantles. All necessary support rods and clamps are included. The accessory proportional voltage power controller supplies a constant steady-state voltage to each position. Each unit is equipped with one 6-inch connected cord to mantle and one 4-foot power cord with grounding plug.

Heating Mantle, Three-Place

Kontes Article No.	Round Bottom Flask Cap. (mL)	Rating per Position	Number of Positions	Case Qty.	Case Price
726123-4051	500	180W-115V	3	1	1,119.08

Power Controller

Kontes Article No.	Type	Volts	Number of Positions	Case Qty.	Case Price
726325-0301	Proportional	115	3	1	455.06

Replacement Element

Kontes Article No.	Round Bottom Flask Cap. (mL)	Watts / Volts	Case Qty.	Case Price
726170-4051	500	180W-115V	1	144.19

Mantle, Sand Bath Heating

Recommended for performing the experiments in the Williamson textbook. The mantle is electrically heated and utilizes commercially available sand used for ash trays or children's sandboxes. The 100 mL size is preferred and is supplied in 115v. Supplied with a one meter, 3-wire cord and standard U.S. plug. CSA certified.

Kontes Article No.	Flask Capacity (mL)	Watts / Volts	Case Qty.	Case Price
720500-0101	100	140 / 115	1	88.73

Accessory Sand

748035-0023	Sand, 16 to 30 mesh	10	1	19.16



720500

Power Control, Sand Bath Heating Mantle

Recommended for use with sand bath heating mantle 720500. Individually calibrated control dial for precision at each setting. The proportional on-off control does not vary voltage and is ideal for microscale applications. Available in 115v at 50/60 Hz. Standard U.S. receptacle is supplied to accept standard U.S. plugs on the mantles. Power supply cords is 1 meter, 3-wire. CSA certified.

Kontes Article No.	Volts	Amps	Case Qty.	Case Price
720600-0115	115	8	1	121.37



720600

Heating Cord, High-Temperature

High-temperature cord wraps around and heats tubes as small as 1/2" diameter. Use in dry or low-moisture areas because of the insulation's high-temperature capabilities. Installation and removal are quick and easy with single end termination. Cord has a 2-wire locking plug on one end. Note: for temperature regulation, always operate through controls.

Kontes Article No.	Dimensions	Watts / Volts	Temp. Limit	Case Qty.	Case Price
729520-0448	1/4 in. x 8 ft.	160W / 115V	400°C	1	108.15
729550-0006	1/4 in. x 4 ft.	160W / 115V	400°C	1	80.70



729520

Mantle Power Control

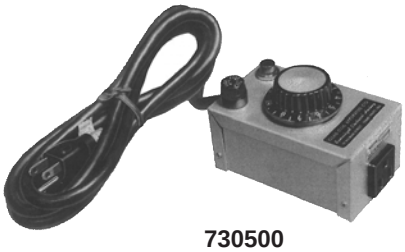
A compact, manually adjusted power control of percentage timer design. This unit is designed to proportion output power from 5.5% to 100% of full power depending on the dial position. The OFF position positively breaks both sides of the line. The control can be used on any non-inductive load up to the rated capacity and is fused. Smaller fuses may be used for protection of very small loads. The pilot light is connected across the output side of the control and indicates power to load.

Operation and control are effected by the operator as the unit does not utilize a sensing element. After a desired temperature has been determined on the initial run, a simple setting of the dial offers control for repeat operations.

This control effectively regulates heating mantles, tapes and cords and may also be used for small furnaces or ovens, hot plates, dies or other applications requiring infinite control.

The unit includes type SJT 16-3 cord with grounded plug, 3 wire receptacle, fuse, pilot light and anodized aluminum case measuring 2 1/2" x 4 1/4" x 2". CSA certified.

Kontes Article No.	Amps	Volts	Cord Length (ft.)	Case Qty.	Case Price
730500-0000	12	115	6	1	142.87
730500-0230	10	230	4	1	181.23



730500

Mantle Power Control

A variable transformer which delivers 0-140 volts from a 120 VAC, 50/60 Hz, single phase source. Output capacity is 10 amps, 1400 watts. Suitable for 115 volt circuits to 1000 watts. Supplied with a grounded 3-wire cord, plug, and receptacle. Dial shows percentage of maximum output voltage. On/off switch is next to the dial. Unit is fused. Dimensions: H 5 5/8 x W 5 x D 6 7/8". Net weight: 10.4 lbs. (4.7 kg). CSA certified.

Kontes Article No.	Case Qty.	Case Price
730900-0000	1	337.32



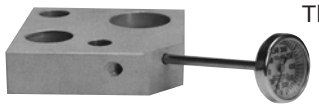
730900

Aluminum Heating Block

Ideal for use in place of a sand bath in microscale experiments. Excellent heat transfer is provided. Does not interfere with magnetic stirring. Design parameters suggested by Charles M. Garner of Baylor University in Waco, Texas.

Kontes Article No.	Application	Overall Length x Width x Height (inches)	Case Qty.	Case Price
720200-0001	For ₹ 14/10 Kits (Solid Bottom)	3 x 3 x 3/4	1	38.49
720200-0002	For Williamson Kits (Solid Bottom)	3 x 3 x 3/4	1	38.49
720205-0001	For All Micro Kits (Open Bottom), Four Holes - (2)9/16", 13/16", 21/32",	3 x 3 x 3/4	1	14.62
720210-0001	For Vials (Split Block)	1 1/2 x 1 1/2 x 3/4	1	8.62

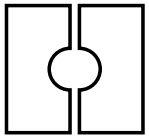
Kontes Article No.	Accessory Description	Stem O.D. (mm)	Case Qty.	Case Price
309180-0290	Bi-metallic Thermometer, 10-290 °C	4	1	15.87



720200

Accessory Thermometer **309180**

720210 Split Block for Vials



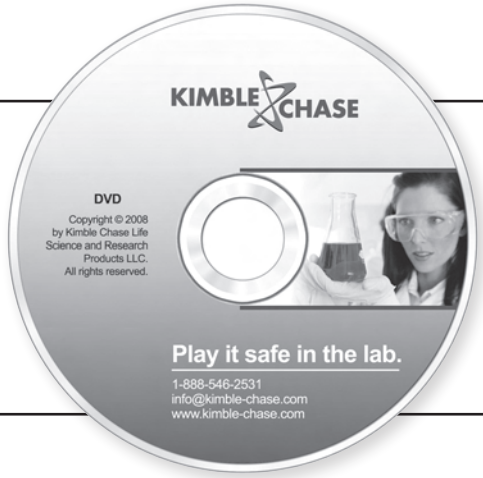
Cimarec® Digital Ceramic Top Stirring Hot Plates from Thermolyne



- Improved slow speed stirring and consistent speed control - adjusts from 50 to 1200 rpm. **StirTrac braking feature** brings the stir bar to an immediate stop for quick flask removal.
- **Easy-to-read, LED digital display** indicates temperature settings, adjustable in 5° increments, from 5° up to 540°C (41° to 1004°F).
- Microprocessor-controlled feedback technology maintains consistent, repeatable temperature settings. **Ideal for labs that perform repetitive procedures.**
- **Hot surface alert safety systems** protect from accidental burns. Bright red warning lights signal when heating surface is above 50°C (122°F). Unit display flashes "HOT" - "OFF" when heating is turned off, until heating surface is below a cool 50°C.
- Flat, white ceramic top and high-wattage heating elements combine to provide **superior heating transfer and fast time-to-boil.**
- Integral ring-stand holder accommodates 0.5" (1.3 cm) diameter support rod.
- Rugged low-profile cast aluminum body provides stability and durability.
- Accommodates sample weights to 35 lb. (11.3 kg) on the 10" x 10" models, .25 lb. on the 7" x 7" models and 15 lb. on the 4" x 4" models.
- Supplied with detachable cord and 2" x 3/8" dia. TFE-coated stir bar.

Kontes Article No.	Electrical (50/60 Hz) Volts	Amps	Watts	Stir Range RPM	Operating Temp. Range °C	°F	Shipping Weight Lb. (kg)	Case Qty.	Case Price
4.25" x 4.25" (10.8 x 10.8 cm) Heating Surface: Overall Dimensions 5.0"W (12.7 cm) x 10"D (25.4 cm) x 3.6"H (9.7 cm)									
790950-0401	120	3.4	410	50 to 1200	5 - 540	41 - 1004	7 (3.2)	1	398.20
790950-0402*	220-240	1.9	460	50 to 1200	5 - 540	41 - 1004	7 (3.2)	1	450.99
7.25" x 7.25" (18.4 x 18.4 cm) Heating Surface: Overall Dimensions 8.2"W (20.8 cm) x 13"D (33 cm) x 3.8"H (9.7 cm)									
790950-0701	120	8.6	1040	50 to 1200	5 - 540	41 - 1004	11 (5.0)	1	418.85
790950-0702*	220-240	5.0	1200	50 to 1200	5 - 540	41 - 1004	11 (5.0)	1	516.38
10.25" x 10.25" (26.0 x 26.0 cm) Heating Surface: Overall Dimensions 11.3"W (28.7 cm) x 16.2"D (41.1 cm) x 4"H (10.1 cm)									
790950-1001	120	12.0	1440	50 to 1200	5 - 400	41 - 752	17 (7.7)	1	553.10
790950-1002*	220-240	6.6	1600	50 to 1200	5 - 400	41 - 752	17 (7.7)	1	674.75

*CE Marked



Safety Program - *Play it safe in the lab.*

Our Safety Program discusses the ten basic safety rules of handling glassware as well as the technical properties and physics of glass. Available as a DVD.

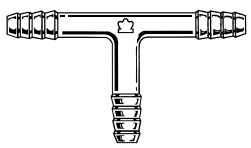
Kimble Article No.	Format	Case Qty.	Case Price
99991D-99	DVD	1	23.99

See more safety products in the *SAFETYWARE* section.

Hose Connector, T-Shaped

Useful in constructing manifolds or connecting apparatus.

Kontes Article No.	Tube O.D. (mm)	Hose Connectors	Approx. Overall Width x Height (mm)	Case Qty.	Case Price
893500-0021	8	#1	100 x 55	1	10.36
893500-0022	10	#2	100 x 58	1	15.46

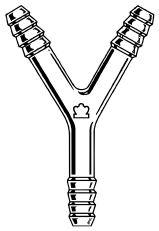


893500

Hose Connector, Y-Shaped

Useful in connecting apparatus.

Kontes Article No.	Tube O.D. (mm)	Hose Connectors	Approx. Overall Width x Height (mm)	Case Qty.	Case Price
893750-0021	8	#1	52 x 90	1	19.29
893750-0022	10	#2	62 x 100	1	20.36



893750

Hose Connector Dimensions

Hose Connector Size	Diameter "A"	Approx. I.D. at Tip (mm)	Fits Flexible Tubing I.D.
1	5/16" (7.9 mm)	3.5	1/4"
2	3/8" (9.5 mm)	3	3/8"
3	1/2" (12.7 mm)	7	1/2"
4	13/16" (20.6 mm)	9	3/4"

Cold Test (Cloud and Pour Points)

KIMAX jar used to determine the temperature (cloud point) at which haziness is first observed at the bottom of the jar when petroleum oils are cooled and examined under specified conditions (ASTM D2500), and also the temperature at which chilled undisturbed oils will pour (ASTM D97). Jar has a flat bottom and a reinforced bead at open end. With a marking spot and a graduation ring located 54 mm from the inside bottom.

Kimble Article No.	Approx. O.D. x Height (mm)	Shelf-Pack Qty.	Case Qty.	Case Price
32501-99	35 x 125	12	36	380.16



32501

Cylindrical

KIMAX jar where the 152 mm sizes have fire-polished tops and larger sizes have ground tops.

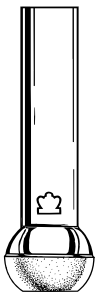
Kimble Article No.	Approx. O.D. x Height (mm)	Approx. Capacity (Liters)	Approx. Capacity Level From Top (mm)	Case Qty.	Case Price
32600-12120	305 x 305	17.0	25.4	1	474.61



32600

Ground Joint, $ Ball

Made in accordance with ASTM E677. Interchangeably ground.

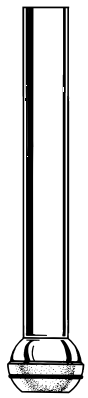


671250

Kontes Article No.	$ Size	Approx. Tubing I.D. x O.D. (mm)	Approx. Overall Length (mm)	Case Qty.	Case Price
671250-0122	12/2	2 x 8	108	1	14.24
671250-0125	12/5	5 x 8	108	1	11.41
671250-0187	18/7	7 x 10	113	1	12.11
671250-0189	18/9	10 x 13	112	1	12.37
671250-2812	28/12	13 x 16	120	1	13.82
671250-2815	28/15	16 x 19	120	1	13.26
671250-3520	35/20	18 x 22	123	1	19.20
671250-3525	35/25	25 x 28	120	1	16.72
671250-5030	50/30	31 x 35	183	1	39.27
671250-6540	65/40	40 x 44	193	1	39.47
671250-7550	75/50	49 x 54	200	1	47.86
671250-0275	102/75	76 x 83	210	1	95.32

Ground Joint, O-Ring $ Ball

O-ring is located near the midpoint of the ground surface for a flexible, greaseless connection. Useful for high vacuum applications where leaching of grease and contamination are a problem. Supplied complete with a FKM O-ring.

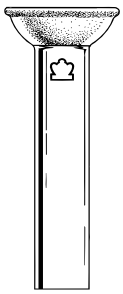


671300

Kontes Article No.	$ Size	O-Ring Size	Approx. Tubing I.D. x O.D. (mm)	Approx. Overall Length (mm)	Case Qty.	Case Price
671300-0122	12/2	5-134	2 x 8	108	1	11.62
671300-0125	12/5	5-134	5 x 8	110	1	11.06
671300-0187	18/7	5-135	7 x 10	113	1	19.48
671300-2815	28/15	020	16 x 19	122	1	15.87
671300-3525	35/25	024	25 x 28	122	1	17.02
671300-5030	50/30	030	31 x 35	182	1	45.37
671300-6540	65/40	034	40 x 44	190	1	46.12
671300-7550	75/50	038	51 x 57	175	1	78.02
671300-0275	102/75	153	76 x 83	210	1	89.00

Ground Joint, $ Socket

Made in accordance with ASTM E677. Interchangeably ground.



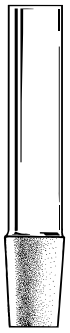
671500

Kontes Article No.	$ Size	Approx. Tubing I.D. x O.D. (mm)	Approx. Overall Length (mm)	Case Qty.	Case Price
671500-0122	12/2	2 x 8	125	1	12.34
671500-0125	12/5	5 x 8	105	1	10.90
671500-0187	18/7	7 x 10	110	1	12.15
671500-0189	18/9	10 x 13	110	1	12.00
671500-2812	28/12	13 x 16	120	1	11.20
671500-2815	28/15	16 x 19	115	1	11.39
671500-3520	35/20	19 x 22	115	1	14.72
671500-3525	35/25	25 x 28	115	1	13.19
671500-5030	50/30	31 x 35	170	1	25.45
671500-6540	65/40	40 x 44	175	1	29.45
671500-7550	75/50	49 x 54	180	1	41.28
671500-0275	102/75	76 x 83	188	1	70.46

Ground Joint, Full Length ⧩, Inner

Full length, manufactured in accordance with ASTM E676. Interchangeably ground.

Kontes Article No.	⧩ Size	Tubing O.D. (mm)	Approx. Overall Length (mm)	Case Qty.	Case Price
661250-0725	7/25	6	125	1	10.54
661250-1030	10/30	8	130	1	8.16
661250-1230	12/30	10	130	1	9.25
661250-1938	19/38	19	138	1	10.90
661250-2440	24/40	22	140	1	9.20
661250-2942	29/42	25	137	1	11.52
661250-3445	34/45	32	145	1	14.63
661250-4050	40/50	35	175	1	18.06
661250-4550	45/50	41	200	1	23.46
661250-5050	50/50	45	200	1	24.70
661250-5550	55/50	51	200	1	24.82
661250-6050	60/50	54	200	1	41.56
661250-7160	71/60	64	210	1	40.94
661250-8650	86/50	80	210	1	59.39
661250-0360	103/60	102	220	1	119.37



661250

Ground Joint, Full Length ⧩, Outer

Full length, formed of the same diameter tubing as is used for 661250 above. Interchangeably ground.

Kontes Article No.	⧩ Size	Tubing O.D. (mm)	Approx. Overall Length (mm)	Case Qty.	Case Price
661300-2440	24/40	22	140	1	8.90

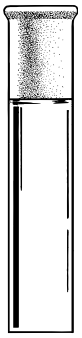


661300

Ground Joint, Full Length ⧩, Outer

Full length joint manufactured in accordance with ASTM E676. Interchangeably ground.

Kontes Article No.	⧩ Size	Tubing O.D. (mm)	Approx. Overall Length (mm)	Case Qty.	Case Price
661500-0725	7/25	10	115	1	10.28
661500-1030	10/30	13	130	1	7.66
661500-1230	12/30	14	130	1	9.92
661500-1435	14/35	17	145	1	8.20
661500-1938	19/38	22	138	1	11.20
661500-2440	24/40	28	140	1	10.24
661500-2942	29/42	32	140	1	10.76
661500-3445	34/45	38	145	1	12.04
661500-4050	40/50	45	175	1	20.54
661500-4550	45/50	48	235	1	20.77
661500-5050	50/50	54	200	1	26.49
661500-5550	55/50	60	200	1	27.78
661500-6050	60/50	64	200	1	31.65
661500-7160	71/60	75	210	1	38.43
661500-8650	86/50	90	210	1	52.29
661500-0360	103/60	114	285	1	99.64



661500

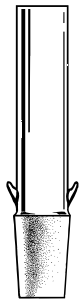
Ground Joint, Full Length ⧩, Inner

Full length joint having a reduced diameter lower tube.

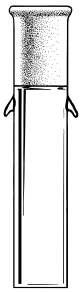
Kontes Article No.	⧩ Size	Lower Tube O.D. (mm)	Approx. Overall Length (mm)	Case Qty.	Case Price
664500-1030	10/30	5	280	1	14.42
664500-1230	12/30	7	280	1	47.18
664500-1435	14/35	8	285	1	23.32
664500-2440	24/40	12	290	1	22.21
664500-4550	45/50	16	350	1	20.03



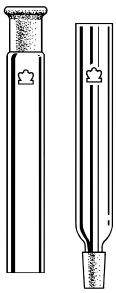
664500



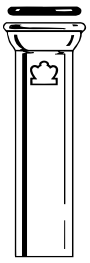
669250



669500



663500



671750

Ground Joint, Medium Length S, Inner

Medium length interchangeably ground S 14/20 joint with hooks.

Kontes Article No.	S Size	Tubing O.D. (mm)	Approx. Overall Length (mm)	Case Qty.	Case Price
669250-1420	14/20	13	160	1	9.76

Ground Joint, Medium Length S, Outer

Medium length interchangeably ground S 14/20 joint with hooks.

Kontes Article No.	S Size	Tubing O.D. (mm)	Approx. Overall Length (mm)	Case Qty.	Case Price
669500-1420	14/20	17	125	1	14.00

Ground Joint, S Luer

Particularly useful for the construction and repair of syringes, infusion pumps, etc. Used with a varying range of needle gauges. Choice of three different size inside diameters.

Kontes Article No.	Joint Type	Approx. Tubing I.D. x O.D. (mm)	Approx. Overall Length (mm)	Case Qty.	Case Price
663500-0144	Inner	1 x 7	70	1	7.16
663500-0126	Outer	1 x 7	100	1	17.28
663500-0244	Inner	2 x 8	70	1	10.12
663500-0226	Outer	2 x 8	100	1	14.45
663500-0444	Inner	4 x 6	70	1	10.12
663500-0426	Outer	4 x 6	100	1	14.42

O-Ring Joint, with Ethylene Propylene O-Ring

These vacuum-tight connectors won't stick or freeze and require no lubricants. One connector is a glass hemisphere designed to assemble with another hemisphere of the same size. The interface is grooved to hold an O-ring which separates but seals the two members. A step is tooled into the groove which insures a good seal between the O-ring and joint. This provides high vacuum performance. They are assembled using pinch clamps. One EP O-ring is supplied with each arm.

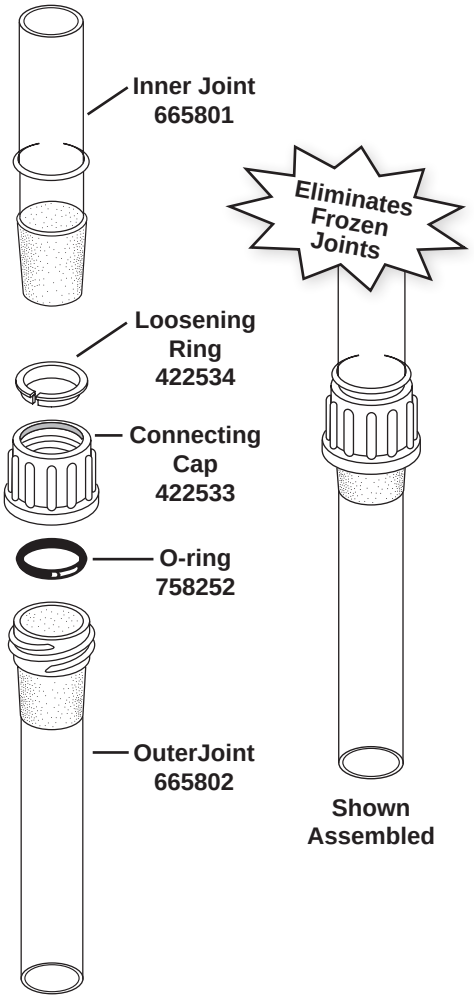
Kontes Article No.	Approx. Tubing I.D. x O.D. (mm)	O-Ring Size	Clamp Size	Approx. Overall Length (mm)	Case Qty.	Case Price
671750-0005	5 x 8	110	12	105	1	6.53
671750-0007	7 x 10	111	18	110	1	6.60
671750-0009	10 x 13	112	18	110	1	6.90
671750-0012	13 x 16	116	28	115	1	7.36
671750-0015	16 x 19	116	28	115	1	7.40
671750-0020	21 x 25	120	35	115	1	8.45
671750-0025	25 x 28	124	35	115	1	8.84
671750-0030	31 x 35	223	50	170	1	13.36
671750-0040	40 x 44	226	65	175	1	18.09
671750-0050	51 x 57	229	75	180	1	29.92
671750-0075	76 x 83	341	102	195	1	44.14
671750-0100*	105 x 114	349	-	205	1	48.32

* Shaped like a conical flange. Assemble using a 613750 reaction flask clamp.

Ground Joint, Rodaviss®, Ground

Rodaviss ⓢ inner and ⓢ outer ground joints, melamine caps, FKM o-rings and polyamide loosening rings are purchased separately. This unique connection is made with a special screw thread ground joint, connecting cap and loosening ring. If the joint ever "freezes" from residue formation, simply unscrew the connecting cap back onto the unique loosening ring and the joint will easily come apart.

Kontes Article No.	Description	Case Qty.	Case Price
665801-1420	Inner Rodaviss Ground Jt., ⓢ 14/20	1	7.96
665801-1922	Inner Rodaviss Ground Jt., ⓢ 19/22	1	7.96
665801-2440	Inner Rodaviss Ground Jt., ⓢ 24/40	1	7.96
422534-0014	Loosening Ring, Sz 14, Pkg/5	5	10.54
422534-0019	Loosening Ring, Sz 19, Pkg/5	5	12.25
422534-0024	Loosening Ring, Sz 24, Pkg/5	5	13.11
422534-0029	Loosening Ring, Sz 29, Pkg/5	5	13.83
422533-0014	Connecting Cap, Sz 14, Pkg/5	5	16.44
422533-0019	Connecting Cap, Sz 19, Pkg/5	5	20.03
422533-0024	Connecting Cap, Sz 24, Pkg/5	5	21.77
758252-0112	FKM O-Ring, Sz 112, Pkg/10, Fits size 14	10	21.42
758252-0114	FKM O-Ring, Sz 114, Pkg/10, Fits size 19	10	24.48
758252-0212	FKM O-Ring, Sz 212, Pkg/5, Fits size 24	5	19.71
758252-0214	FKM O-Ring, Sz 214, Pkg/5, Fits size 29	5	22.22
665802-1420	Outer Rodaviss Ground Jt., ⓢ 14/20	1	7.30
665802-1922	Outer Rodaviss Ground Jt., ⓢ 19/22	1	7.30
665802-2440	Outer Rodaviss Ground Jt., ⓢ 24/40	1	7.30



Threaded Connecting Tube

Connecting tube with a 1-1.5 mm I.D. capillary.

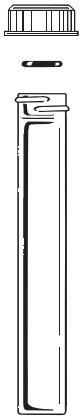
Kontes Article No.	Thread Size	Approx. Tube O.D. (mm)	Approx. Overall Length (mm)	Case Qty.	Case Price
747630-0000	1/4"-28	7	150	1	97.55


747630

Connecting, Bevel-Seal™ Threaded

Used in the fabrication of various types of apparatus. Series 671790 are supplied with 410119 cap suitable for use to 200°C and FKM O-ring. Series 671791 connectors are glass only.

Kontes Article No.	**Accommodation** Range (mm)	**Nom.** Size (in.)	**O-** Ring Size	**Modified** GPI Thread	Approx. **Overall** Length (mm)	Case Qty.	Case Price
671790-0005	2-5	1/8	105	13-415	104	1	8.46
671791-0005	2-5	1/8	105	13-415	100	1	6.52
671790-0008	5-8	1/4	108	15-415	104	1	8.21
671791-0008	5-8	1/4	108	15-415	100	1	6.11
671790-0011	8-11	3/8	111	20-415	104	1	10.89
671791-0011	8-11	3/8	111	20-415	100	1	7.14
671790-0014	11-14	1/2	113	22-415	104	1	10.19
671791-0014	11-14	1/2	113	22-415	100	1	7.87
671790-0017	14-17	5/8	207	28-415	122	1	18.50
671791-0017	14-17	5/8	207	28-415	126	1	9.48
671790-0020	17-20	3/4	210	30-400	137	1	25.27
671791-0020	17-20	3/4	210	30-400	141	1	16.28
671790-0023	20-23	7/8	211	33-400	122	1	33.69
671791-0023	20-23	7/8	211	33-400	126	1	17.83
671790-0026	23-26	1	213	35-400	137	1	33.96
671791-0026	23-26	1	213	35-400	141	1	19.77


671790

Lubricants



743200

Grease, LUBRISEAL®, for Joints and Stopcocks

A smooth-textured, odorless and highly insoluble lubricant. Ideal for sealing and lubricating ground joints and stopcocks. Melting point is approximately 52°C.

Kontes Article No.	Pkg. Size (g)	Case Qty.	Case Price
743200-0001	75	1	25.32



743202

Lubricant, Silicone Stir Bearing

Specially formulated low viscosity silicone fluid, with less than 0.5% weight loss at 150°C. Prevents binding and seizing of glass stirring rods under high temperature and pressures.

Useful with high vacuum and pressure stirring rods and bearings, where excellent resistance to wash out and temperature are needed. Excellent lubricant for plastic surfaces and tight fitting parts.

Kontes Article No.	Pkg. Size (g)	Case Qty.	Case Price
743202-0000	25	1	7.02



743204
743206

Grease, Silicone, for Joints and Stopcocks

Chemically resistant, medium consistency silicone grease for use under more typical operating conditions. Same uses as 743206 PTFE grease, but where less severe operating conditions exist. Stable from -40°C to 232°C. Typical vapor pressure is 10^{-8} Torr.

Kontes Article No.	Pkg. Size (g)	Case Qty.	Case Price
743204-0000	25	1	7.81

Grease, Silicone / PTFE, for Joints and Stopcocks

Special silicone/PTFE grease of medium consistency. Reduces binding and galling under extreme operating conditions. Stable from -40°C to 260°C. Typical vapor pressure is 10^{-8} Torr. Chemically resistant. Useful with extremely high vacuum and pressure systems-ground glass joints, high temperature gaskets, valves, seals and O-rings.

Kontes Article No.	Pkg. Size (g)	Case Qty.	Case Price
743206-0000	25	1	13.76

Polyacetal, Standard Taper

An easy to use positive closure clamp made of tough, color coded plastic. Clamp will not scratch glass and can be autoclaved to 200°C. This clamp has good chemical resistance at a lower cost than metal clips.

Kontes Article No.	Fits Joint Sizes	Color Coded	Case Qty.	Case Price
675300-0010	10/18, 10/30	Aqua	12	34.70
675300-0014	14/20, 14/35	Yellow	12	37.72
675300-0019	19/22, 19/38	Blue	12	38.46
675300-0024	24/40, 24/25	Green	12	39.53
675300-0029	29/42, 29/26	Red	12	40.77
675300-0034	34/45, 34/28	Orange	12	43.52
675300-0040	40/35, 40/50	Gold	12	45.29
675300-0045	45/50	Brown	12	51.63

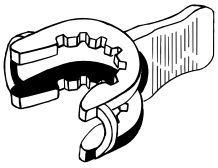


675300

Polyacetal, Spherical Joint

An easy to use positive closure clamp made of tough, color coded plastic for use with ball and socket joints. Clamp will not scratch glass and can be autoclaved to 200°C. This clamp has good chemical resistance at a lower cost than metal clips.

Kontes Article No.	Fits Joint Sizes	Color Coded	Case Qty.	Case Price
675310-0013	12/2, 12/3, 12/5	Violet	12	54.89
675310-0019	18/7, 18/9	Lt. Blue	12	42.47
675310-0029	28/12, 28/15	Dk. Red	12	59.78
675310-0035	35/20, 35/25	Lt. Orange	12	62.71



675310

Pinch, Spherical Joint and O-Ring Connector

Used to assemble component parts of spherical and o-ring connector arms. The size corresponds to the ball diameter, the first figure in designating the size of a joint. Sizes 12-A, 18-A and larger have a screwlocking device.

Kontes Article No.	Size	Screw Lock Provided	Fits O-Ring Conn. Size	Case Qty.	Case Price
675000-0012	12	No	5	1	11.14
675000-1221	12A	Yes	5	1	24.07
675000-0018	18	No	7-9	1	23.29
675000-1821	18A	Yes	7-9	1	24.07
675000-0028	28	Yes	12-15	1	16.08
675000-0035	35	Yes	20-25	1	19.36
675000-0040	40	Yes	-	1	36.64
675000-0050	50	Yes	30	1	49.39
675000-0065	65	Yes	40	1	68.47
675000-0075	75	Yes	50	1	83.99
675000-0102	102	Yes	75	1	169.90



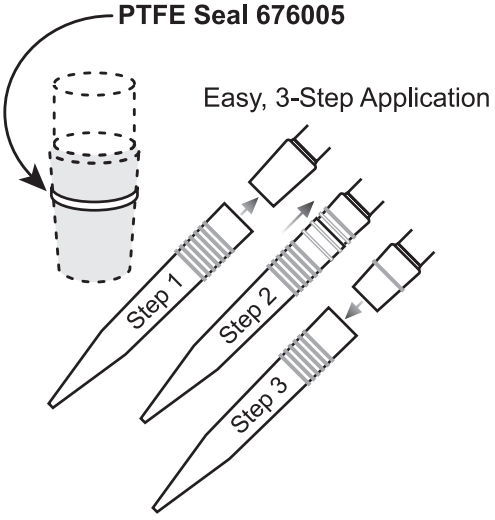
675000

Seals, Greaseless, for Standard Taper () Jointed Glassware

Use these thin PTFE sealing rings for taper jointed flasks and apparatus as an economical and efficient alternative to PTFE joint sleeves and stoppers. High vacuum-tight (gas leakage rate below 10^{-6} millibar / liter /second) between -200 and 250° C. Can be used with joint clamps.

For technical information see: www.glindemann.net

Kontes Article No.	Fits Joint	Case Qty.	Case Price
676005-1030	10/30	50	30.95
676005-1420	14/10, 14/20, 14/35	50	34.38
676005-1922	19/22, 19/38	50	36.09
676005-2440	24/25, 24/40	50	36.39
676005-2942	29/26, 29/42	50	36.97
676005-4550	45/50	50	53.57



1. Position Applicator Tube On Joint
2. Slide Sealing Ring(s) Off of Applicator Tube and onto Joint
3. Remove Applicator Tube



33820-99

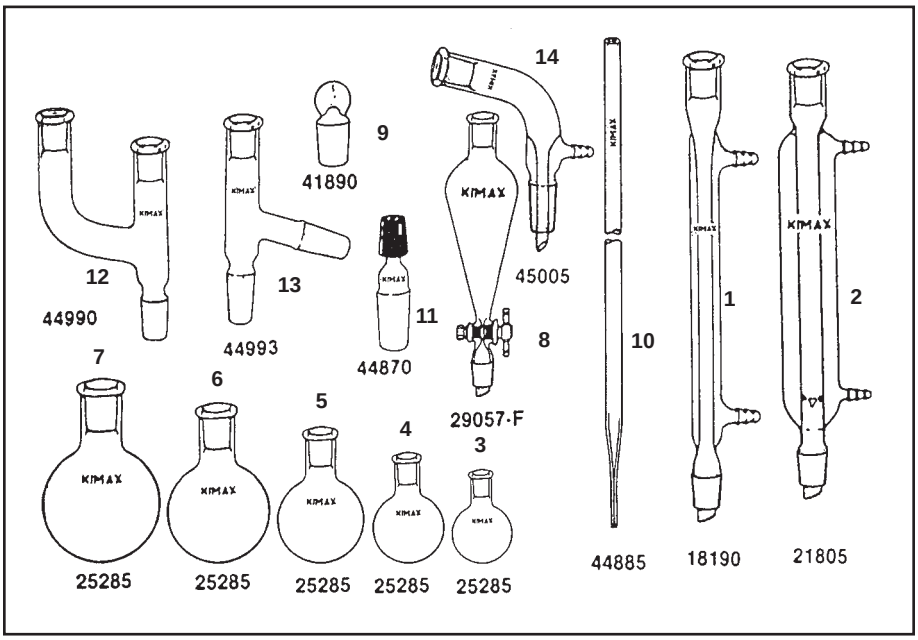
Organic Chemistry, Full Scale, ⅋ 24/40 Joints, LABSET®

KIMAX LABSET with full length ⅋ 24/40 joints. Case is heavyweight corrugated and inserts are soft foam.

Kimble Article No.	Description	Approx. Overall Case Dimensions Length x Width x Height (in)	Case Qty.	Case Price
33820-99	Complete Kit	23 x 18 x 5.5	1	677.81

Complete kit consists of one (1) each of the following components:

Kimble Article No.	No.	Description
18190-300	1	Condenser, West, 300 mm, ⅋ 24/40
21805-300	2	Distilling Column, 300 mm, ⅋ 24/40
25285-50	3	Flask, Round Bottom, Single Neck, 50 mL
25285-100	4	Flask, Round Bottom, Single Neck, 100 mL
25285-200	5	Flask, Round Bottom, Single Neck, 200 mL
25285-300	6	Flask, Round Bottom, Single Neck, 300 mL
25285-500	7	Flask, Round Bottom, Single Neck, 500 mL
29057F-125	8	Funnel, Separatory, 125 mL, ⅋ 24/40 Joint
41890R-2440	9	Stopper, Glass, Hollow, ⅋ 24/40 (2 Per Labset)
44885-99	10	Tube, Bleed, Gas (Steam)
44870-2440	11	Adapter, Thermometer, ⅋ 24/40 Joint
44990-2440	12	Adapter, Connecting, Claisen, ⅋ 24/40 Joints
44993-2440	13	Adapter, Connecting, Three-Way, ⅋ 24/40 Joints
45005-2440	14	Adapter, Connecting, Vacuum, ⅋ 24/40 Joints





⅋ 14/20 and ⅋ 19/22
Macroscale KEM-KITS®
Page 296



⅋ 14/20
Williamson
Macroscale
KEM-KIT®
Page 297



Williamson Microscale Kits with
Patented Chaste Connections
Page 298

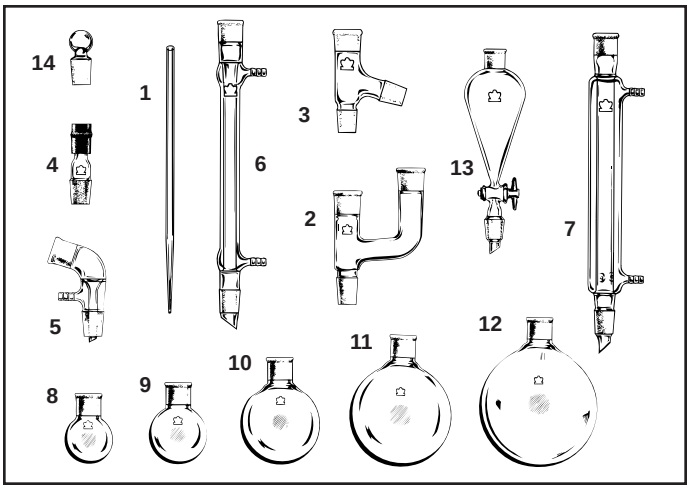


PTFE Threaded Connector
Microscale Kits
Page 316



⅋ 14/10
Microscale Kits
Page 306





Organic Chemistry, $ 14/20 and $ 19/22, KEM-KITS®

KEM-KITS contain a selection of basic small scale glassware for extraction, reflux, reflux with addition, fractionation, distillation (steam, atmospheric and vacuum), as well as for other organic preparations.

The fourteen components itemized below are supplied in a double-wall heavy-duty polyethylene storage case with a handle and hinged lid. A comprehensive instruction manual by Dr. William B. Martin of Lake Forest College, Illinois, is provided with each kit.

Kontes Article No.	$ Joints	Case Qty.	Case Price
269320-0000	14/20	1	438.47
269800-0000	19/22	1	428.03

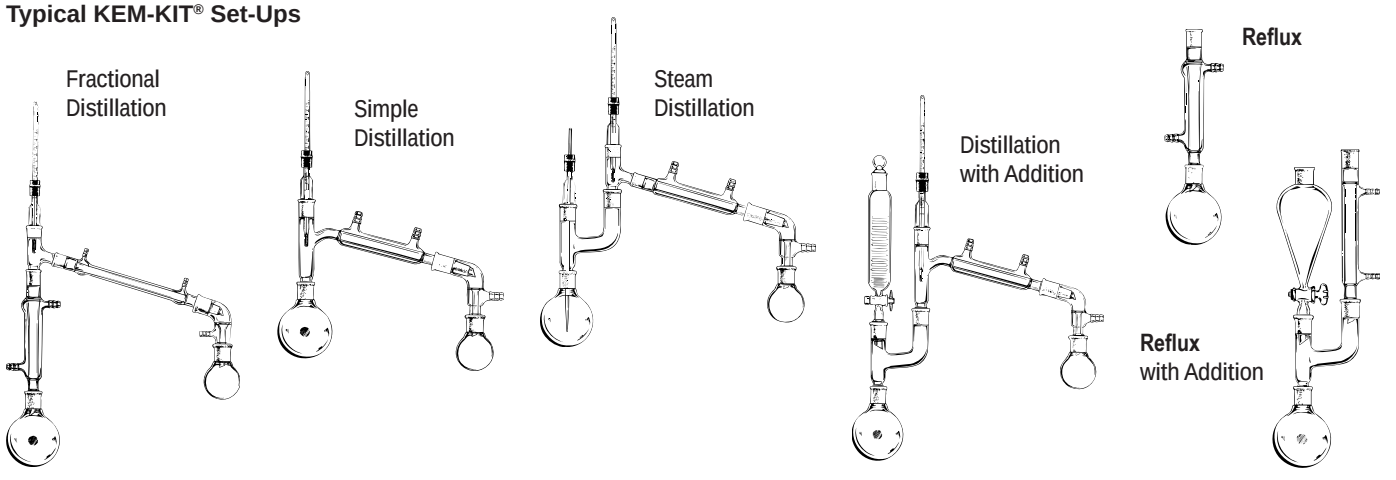
$ 14/20 KEM-KIT Components

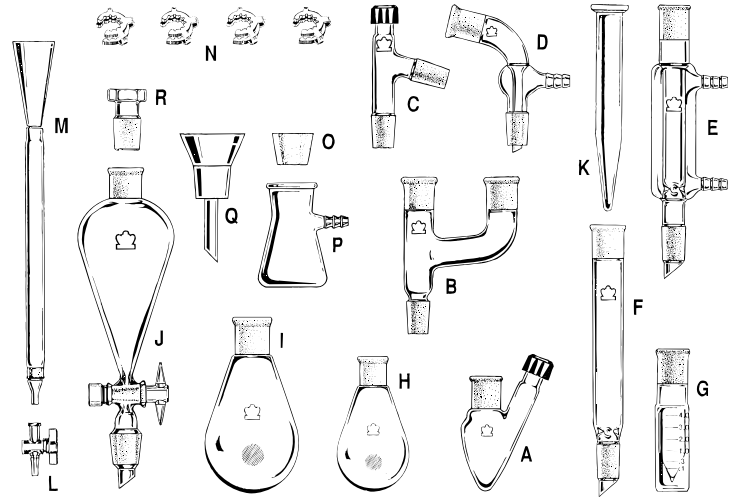
Kontes Article No.	No.	Description	Case Qty.	Case Price
273410-0000	1	Bleed Adapter	1	6.66
273750-0000	2	Claisen Adapter	1	55.20
274950-0000	3	Connecting Adapter	1	42.01
275410-1420	4	Outlet Adapter	1	15.65
276400-0000	5	Vacuum Adapter	1	41.50
282550-0000	6	Condenser, West	1	66.89
286820-0110	7	Distillation Column	1	58.98
294000-0025	8	Flask, 25 mL	1	18.32
294000-0050	9	Flask, 50 mL	1	18.32
294000-0100	10	Flask, 100 mL	1	18.32
294000-0250	11	Flask, 250 mL	1	22.01
294000-0500	12	Flask, 500 mL	1	25.69
298281-0125	13	Funnel, 125 mL, PTFE	1	89.33
850500-1420	14	Stopper	1	13.70
Replacement Case and Foam Insert Set				
269501-0000			1	55.07

$ 19/22 KEM-KIT Components

Kontes Article No.	No.	Description	Case Qty.	Case Price
273410-0000	1	Bleed Adapter	1	6.66
273760-0000	2	Claisen Adapter	1	50.12
275060-0000	3	Connecting Adapter	1	40.56
275410-1922	4	Outlet Adapter	1	17.37
276410-0000	5	Vacuum Adapter	1	42.66
282460-0200	6	Condenser, West	1	54.95
286810-0200	7	Distillation Column	1	60.55
294010-0025	8	Flask, 25 mL	1	18.42
294010-0050	9	Flask, 50 mL	1	18.42
294010-0100	10	Flask, 100 mL	1	18.42
294010-0250	11	Flask, 250 mL	1	23.42
294010-0500	12	Flask, 500 mL	1	26.10
298290-0125	13	Funnel, 125 mL, PTFE	1	89.01
850500-1922	14	Stopper	1	15.27
Replacement Foam Insert Set Only				
269501-0002			1	25.98

Typical KEM-KIT® Set-Ups







269330

Organic Chemistry, Macroscale, ⅋ 14/20, Williamson KEM-KIT®

Designed to address the experiments detailed in the Williamson text *Macroscale and Microscale Organic Experiments* published by D.C. Heath and Company, Lexington, Massachusetts. These experiments can also be performed with the KONTES 748000 Series Microscale Kits listed in this section.

Students use the separatory funnel for extractions and for liquid addition in reaction assemblies. Classical atmospheric, steam, fractional, and vacuum distillations are possible with kit components. Apparatus set-up time is minimal, providing the student with more lab time. Smaller quantities afford a greater degree of safety, improve air quality in the lab, and substantially reduced disposal costs.

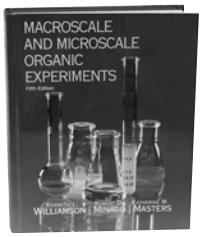
Kontes Article No.	Case Qty.	Case Price
269330-0000	1	398.22

Kit Components

Kontes Article No.	Item	Description	Kit Qty.	Case Qty.	Case Price
251450-0015	A	Conical Flask, 15 mL	1	1	50.77
273755-0000	B	Claisen Adapter	1	1	19.45
274960-0000	C	Connecting Adapter	1	1	36.26
276405-0000	D	Vacuum Adapter	1	1	33.93
282555-0000	E	Water Jacketed Condenser	1	1	34.59
286100-0000	F	Distilling Column	1	1	24.26
288260-0001	G	Distillation Receiver	1	1	21.66
294300-0050	H	Kjeldahl Shaped Flask, 50 mL	1	1	19.18
294300-0100	I	Kjeldahl Shaped Flask, 100 mL	1	1	19.97
298281-0125	J	Separatory Funnel, 125 mL	1	1	89.33
411800-0015	K	Centrifuge Tube	1	125	204.95
420163-1500	L	Stopcock, PE/Nylon	1	5	23.45
420166-1001	M	Chromatography Column	1	5	39.36
420164-1000		Funnel Only	-	50	26.52
420168-1000		Luer Tip Only	-	50	20.03
420162-0020		Polyethylene Disc, 20 Microns	-	100	31.43
675300-0014	N	Polyacetal Clamp, Size 14	4	12	37.72
748002-0000	O	Filter Adapter, Pluro Stopper	1	10	10.57
748010-1025	P	Filter Flask, 25 mL	1	1	19.82
748012-1000	Q	Hirsch Funnel	1	5	12.40
748017-0020		Polyethylene Disc, 20 Microns	-	100	25.32
850400-1420	R	Hex Head Stopper, ⅋ 14/20	1	1	20.48

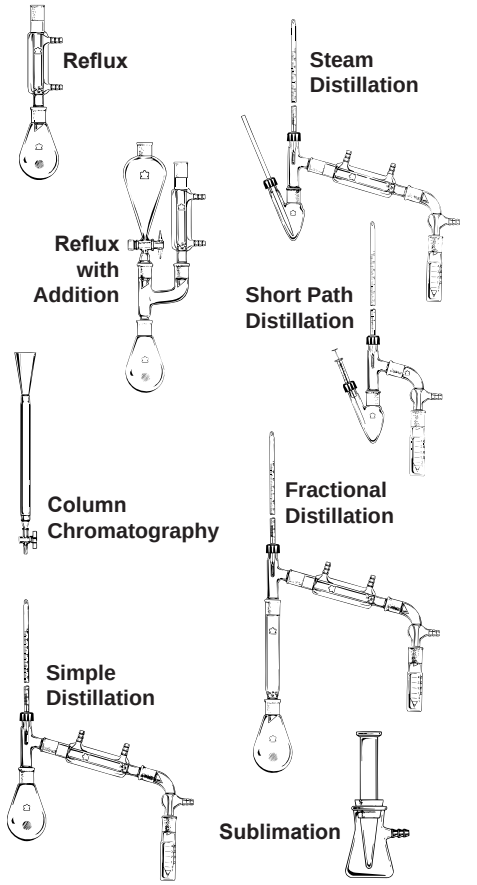
Custom variations and special large quantity prices are available upon request.
Call customer service at 888-546-2531 for more information.

Macroscale and Microscale Organic Experiments



by
Kenneth L. Williamson

Houghton Mifflin Co.
ISBN-10: 0-618-59067-6
ISBN-13: 978-0-618-59067-4





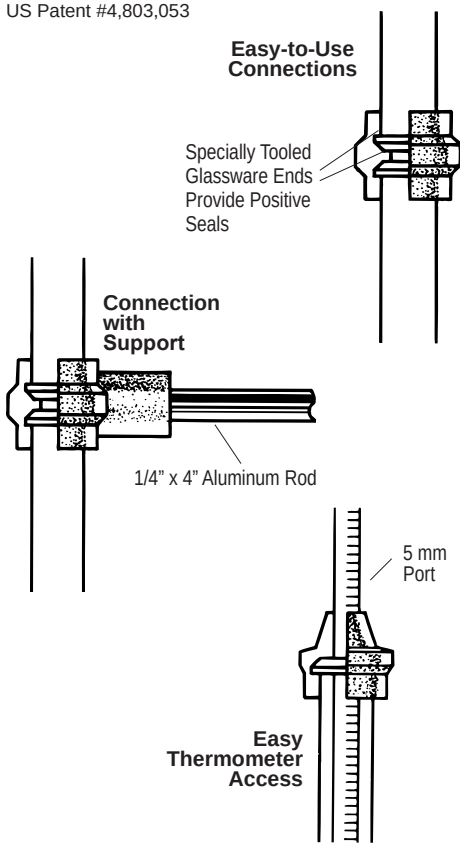
748100-0000

Kits are packed in a rugged polyethylene storage case (2 1/2" H x 13 1/2" W x 10" D) with a die cut foam insert. They fit easily into lab bench drawers.

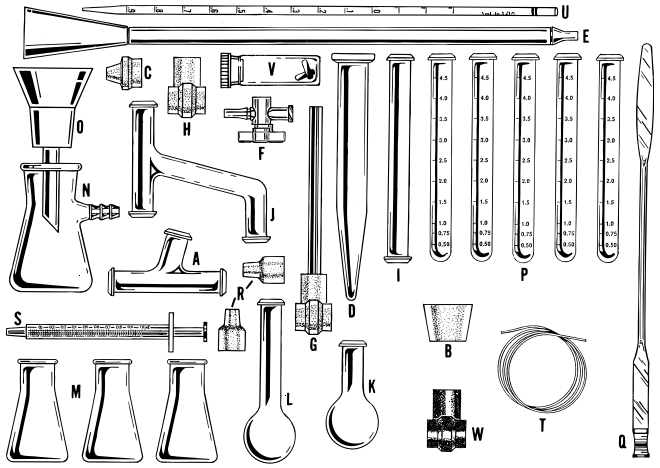
Corrugated cardboard EKONO-CASES™ are also available. They offer a low cost alternative to the plastic molded cases.

Patented Thermoplastic Connectors

Fast, easy-to-use, positive connections without threads or standard taper joints.
US Patent #4,803,053



Williamson Improved Standard Kit, 748100



Williamson Microscale Kits

All the components necessary to perform the Williamson experiments described in Macroscale and Microscale Organic Experiments are included.

These MICROFLEX® Kits feature the patented chaste connectors and specially tooled glassware components providing great versatility.

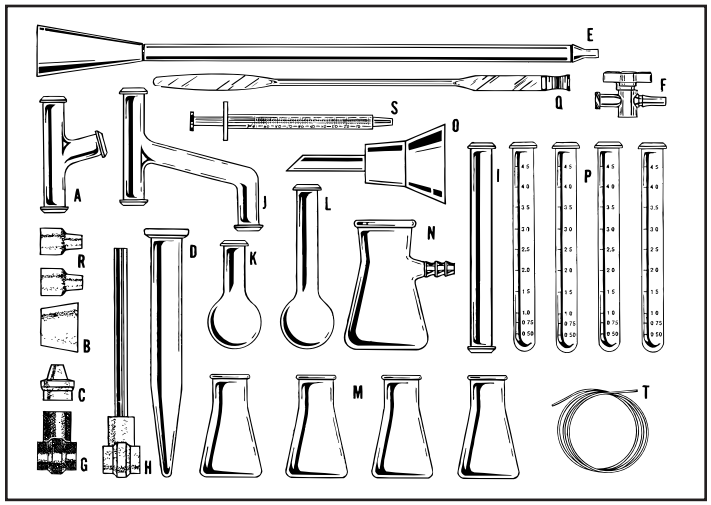
Organic Chemistry, Microscale, Thermoplastic Connectors, Williamson Improved Standard Kit

Kontes Article No.	Description	Case Qty.	Case Price
748100-0000	Williamson Improved Standard Microscale Kit	1	228.37
748100-0005	Corrugated EKONO-CASE Improved Standard Microscale Kit	1	216.62

Kit Components

Kontes Article No.	Item	Description	Kit Qty.	Case Qty.	Case Price
748001-1000	A	Connecting Adapter	1	1	13.06
748001-0000		Connecting Adapter	-	10	120.39
748002-0000	B	Filter Adapter, Pluro Stopper	1	10	10.57
748003-1000	C	Thermometer Adapter	1	5	16.96
748003-0000		Thermometer Adapter	-	10	31.19
411800-1015	D	Centrifuge Tube, 15 mL	1	10	21.92
411800-0015		Centrifuge Tube, 15 mL	-	125	204.95
73837-2		Replacement Snap Cap	-	500	22.39
420166-1001	E	Chromatography Column, Glass 150 mm w/Disc	1	5	39.36
420164-1000		Funnel Only	-	50	26.52
420168-1000		Luer Tip Only	-	50	20.03
420162-0020		Polyethylene Disc, 20 microns	-	100	31.43
420163-1500	F	One Way Stopcock, PE/Nylon	1	5	23.45
748005-1000		G Connector w/Support Rod	1	5	46.57
748005-0000		Connector w/Support Rod	-	1	89.38
748005-1001	H	Connector Only	1	5	19.16
748006-1100	I	Distillation Column	1	5	18.66
748006-0100		Distillation Column	-	100	346.95
748007-1060	J	Distillation Head, 60 mm	1	1	13.46
748008-1005	K	Short Neck Flask, 5 mL	1	1	13.70
748008-0005		Short Neck Flask, 5 mL	-	10	125.28
748009-0005		Long Neck Flask, 5 mL	1	5	127.55
748009-1005	L	Long Neck Flask, 5 mL	1	1	13.96
882300-0010	M	Erlenmeyer Flask, 10 mL	3	12	72.25
748010-1025	N	Filter Flask, 25 mL	1	1	19.82
748010-0025		Filter Flask, 25 mL	-	10	181.40
748012-1000	O	Hirsch Funnel, with Disc	1	5	12.40
748012-0000		Hirsch Funnel, with Disc	-	10	22.72
748017-0020		Polyethylene Disc, 20 microns	-	100	25.32
748013-1000	P	Reaction Tube, 10 x 100 mm	5	25	60.42
748013-0000		Reaction Tube, 10 x 100 mm	-	100	223.15
748014-1000	Q	Spatula, S.S.	1	1	11.22
748014-0000		Spatula, S.S.	-	10	101.80
774261-0008	R	Sleeve Stoppers	2	50	18.31
748019-0001	S	Syringe, Polyethylene	1	12	5.63
420823-0116	T	Tubing, PTFE, 1/16" fits 20 gauge needle	2	10	18.91
764100-1001	U	Pipet, 1 mL	1	25	10.31
791145-0021	V	Stir Bars, 4x12 mm, 2 per vial	1	6	18.67
748005-1651	W	Connector Only, FKM	1	5	27.16
748001-0003		Foam Insert Set	1	1	7.96
746001-0001		Storage Case, 2 1/2" x 13 1/2" x 10"	1	1	19.45

Williamson Standard Kit, 748000



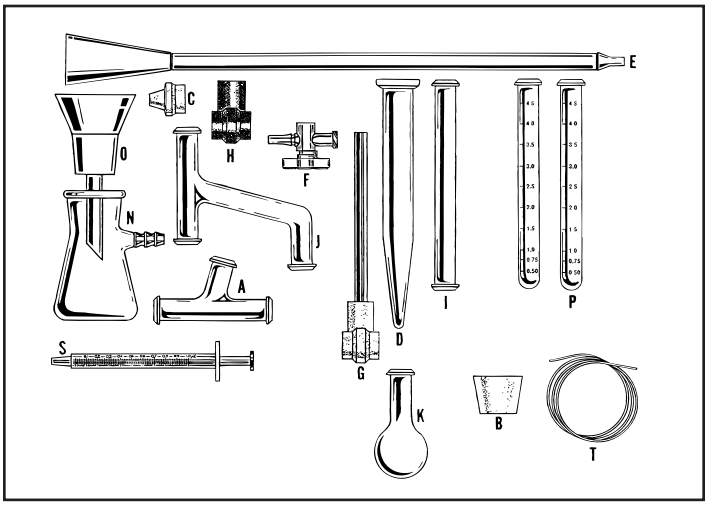
Kontes Article No.	Description	Case Qty.	Case Price
748000-0000	Williamson Standard Microscale Kit	1	220.65
748000-0005	Corrugated EKONO-CASE Williamson Standard Microscale Kit	1	216.62

Kit Components

Kontes Article No.	Item	Description	Kit Qty.	Case Qty.	Case Price
748001-1000	A	Connecting Adapter	1	1	13.06
748001-0000		Connecting Adapter	-	10	120.39
748002-0000	B	Filter Adapter, Pluro Stopper	1	10	10.57
748003-1000	C	Thermometer Adapter	1	5	16.96
748003-0000		Thermometer Adapter	-	10	31.19
411800-1015	D	Centrifuge Tube, 15 mL	1	10	21.92
411800-0015		Centrifuge Tube, 15 mL	-	125	204.95
73837-2		Replacement Snap Cap	-	500	22.39
420166-1001	E	Chromatography Column, Glass 150 mm w/Disc	1	5	39.36
420164-1000		Funnel Only	-	50	26.52
420168-1000		Luer Tip Only	-	50	20.03
420162-0020		Polyethylene Disc, 20 microns	-	100	31.43
420163-1500	F	One Way Stopcock, PE/Nylon	1	5	23.45
748004-0000		Connector	1	10	37.96
748004-1000		Connector	1	5	20.88
748005-1651	G	Connector Only, FKM	1	5	27.16
748005-1000	H	Connector w/Support Rod	1	5	46.57
748005-0000		Connector w/Support Rod	-	10	89.38
748006-1100	I	Distillation Column	1	5	18.66
748006-0100		Distillation Column	-	100	346.95
748007-1060	J	Distillation Head, 60 mm	1	1	13.46
748008-1005	K	Short Neck Flask, 5 mL	1	1	13.70
748008-0005		Short Neck Flask, 5 mL	-	10	125.28
748009-0005		Long Neck Flask, 5 mL	1	5	127.55
748009-1005	L	Long Neck Flask, 5 mL	1	1	13.96
882300-0010	M	Erlenmeyer Flask, 10 mL	4	12	72.25
748010-1025	N	Filter Flask, 25 mL	1	1	19.82
748012-1000	O	Hirsch Funnel, with Disc	1	5	12.40
748017-0020		Polyethylene Disc, 20 microns	-	100	25.32
748013-1000	P	Reaction Tube, 10 x 100 mm	4	25	60.42
748014-1000	Q	Spatula, S.S.	1	1	11.22
774261-0008	R	Sleeve Stoppers	2	50	18.31
748019-0001	S	Syringe, Polyethylene	1	12	5.63
420823-0116	T	Tubing, PTFE,1/16" fits 20 gauge needle	2	10	18.91
748001-0003		Foam Insert Set	1	1	7.96
746001-0001		Storage Case	1	1	19.45

Custom variations and special large quantity prices are available upon request. Call customer service at 888-546-2531 for more information.

Williamson Intermediate Kit, 748110



Kontes Article No.	Description	Case Qty.	Case Price
748110-0000	Williamson Intermediate Microscale Kit	1	115.82
748110-0005	Corrugated EKONO-CASE Williamson Intermediate Microscale Kit	1	101.47

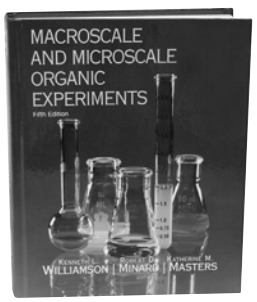
Kit Components

Kontes Article No.	Item	Description	Kit Qty.	Case Qty.	Case Price
748001-1000	A	Connecting Adapter	1	1	13.06
748001-0000		Connecting Adapter	-	10	120.39
748002-0000	B	Filter Adapter, Pluro Stopper	1	10	10.57
748003-1000	C	Thermometer Adapter	1	5	16.96
748003-0000		Thermometer Adapter	-	10	31.19
411800-1015	D	Centrifuge Tube, 15 mL	1	10	21.92
411800-0015		Centrifuge Tube, 15 mL	-	125	204.95
73837-2		Replacement Snap Cap	-	500	22.39
420166-1001	E	Chromatography Column, Glass 150 mm w/Disc	1	5	39.36
420164-1000		Funnel Only	-	50	26.52
420168-1000		Luer Tip Only	-	50	20.03
420162-0020		Polyethylene Disc, 20 microns	-	100	31.43
420163-1500	F	One Way Stopcock, PE/Nylon	1	5	23.45
748005-1000	G	Connector w/Support Rod	1	5	46.57
748005-1001		Connector Only	-	5	19.16
748005-1651	H	Connector Only, FKM	1	5	27.16
748006-1100	I	Distillation Column	1	5	18.66
748007-1060	J	Distillation Head, 60 mm	1	1	13.46
748008-1005	K	Short Neck Flask, 5 mL	1	1	13.70
748010-1025	N	Filter Flask, 25 mL	1	1	19.82
748012-1000	O	Hirsch Funnel, with Disc	1	5	12.40
748017-0020		Polyethylene Disc, 20 microns	-	100	25.32
748013-1000	P	Reaction Tube, 10 x 100 mm	2	25	60.42
748019-0001	S	Syringe, Polyethylene	1	12	5.63
420823-0116	T	Tubing, PTFE, 1/16" fits 20 gauge needle	2	10	18.91
748001-0003		Foam Insert Set	1	1	7.96
746001-0001		Storage Case	1	1	19.45

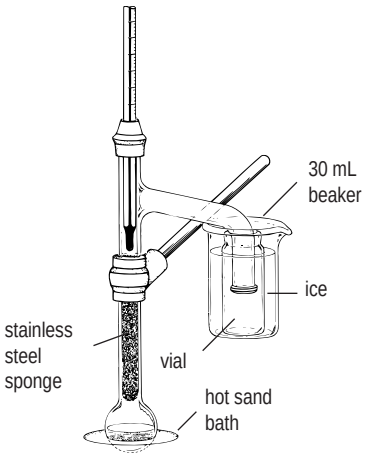
Macroscale and Microscale Organic Experiments

by
Kenneth L. Williamson

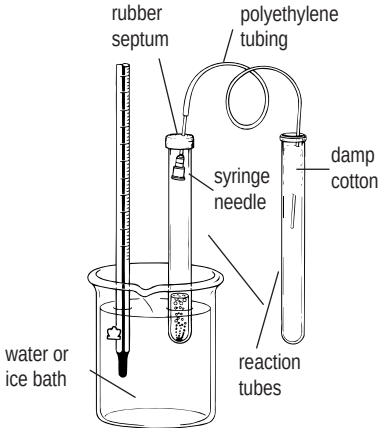
Houghton Mifflin Co.
ISBN-10: 0-618-59067-6
ISBN-13: 978-0-618-59067-4



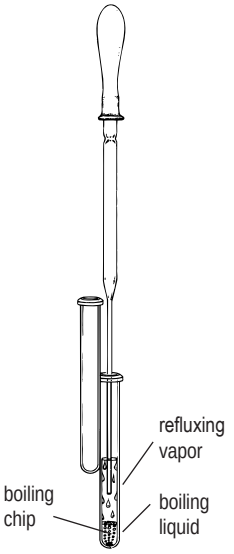
The MICROFLEX® / Williamson Microscale Advantages



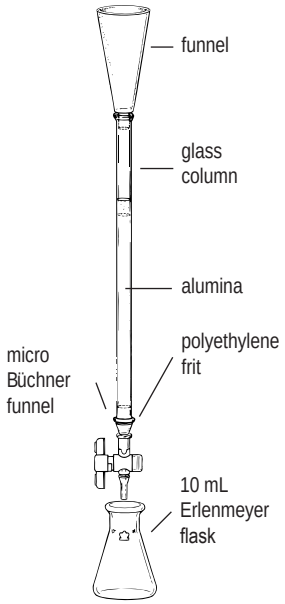
Fractional Distillation



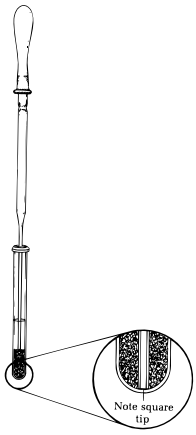
Apparatus for Trapping Evolved Gas in Friedel-Crafts Reactions



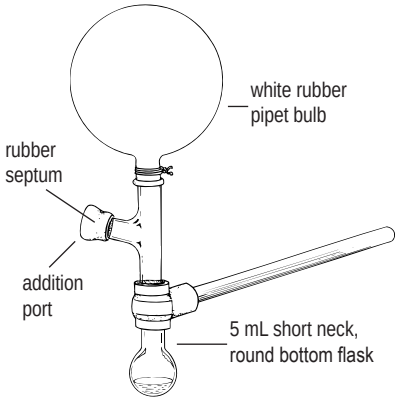
Apparatus for Instant Microscale Distillation



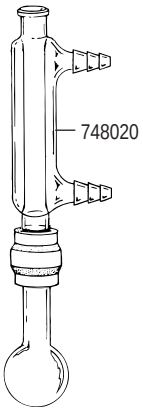
Column Chromatography



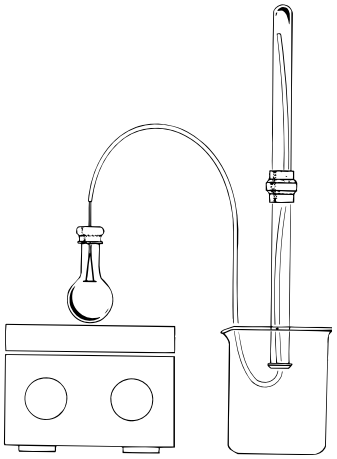
Pasteur Pipet Filtration Technique



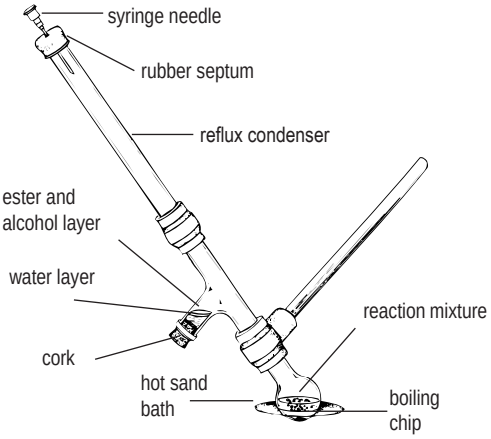
Balloon Technique of Oxygenation



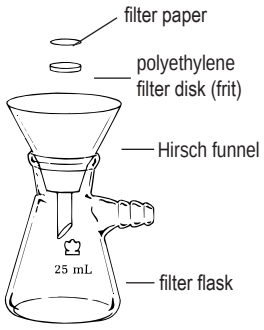
Water Jacketed Reflux for Warm Climates



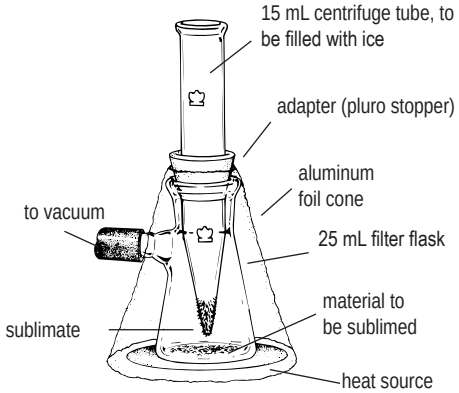
Hydrogenation or Other Gas Generation



Ester Preparation Micro Dean-Stark Water Removal



Hirsch Funnel Filtration

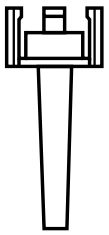


Sublimation

Wilfilter Centrifuge Adapter

Adapter snaps over the end of a 748013 reaction tube and is inverted into a 15 mL polypropylene or glass centrifuge tube. Solvent escapes the reaction tube during centrifugation, leaving the crystals on the top surface of the Wilfilter.

Kontes Article No.	Dia. x Height (mm)	Case Qty.	Case Price
748025-1034	14 x 34	5	16.96

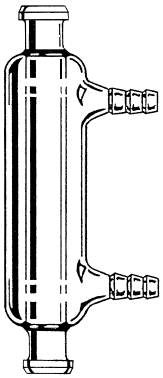


748025

Liebig Condenser, Micro, Williamson Chaste Connections

Liebig condenser has patented chaste connectors at the top and bottom.

Kontes Article No.	Approx. Overall Height (mm)	Case Qty.	Case Price
748020-1000	97	1	45.93

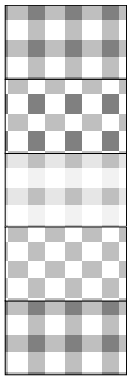


748020

Fabric, Multi-fiber Test

Useful for testing dyes, this three foot length of fabric has 13 strips of different fibers woven side by side. The fibers are acetate rayon, SEF, Arnel, cotton, Creslan, Dacron 54 and 64, nylon 6.6, Orlon 75, silk, polypropylene, viscose rayon and wool.

Kontes Article No.	Case Qty.	Case Price
748030-0043	1	5.58

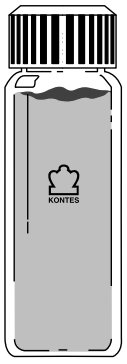


748030

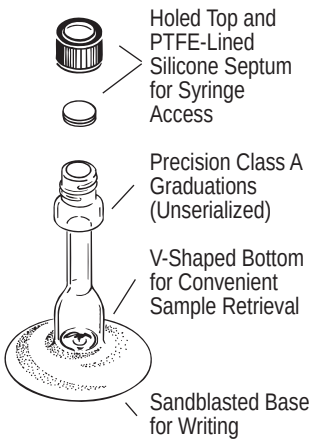
Stain Cloth, Test Identification

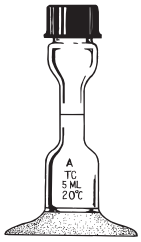
A proprietary mixture of dyes used to dye cloth according to the procedure in the Williamson textbook. Supplied in a polypropylene jar for easy dispensing.

Kontes Article No.	Case Qty.	Case Price
748033-0008	1	52.54



748033





297050

Volumetric Flask, Micro, Class A

Class A threaded flask has an open top phenolic cap and a PTFE-lined silicone septum for syringe access. Calibrated to contain. V-shaped bottom provides convenient sample retrieval.

Kontes Article No.	Capacity (mL)	GPI Thread size	Approx. Overall Height (mm)	Case Qty.	Case Price
297050-0001	1	13-425	73	1	23.96
297050-0002	2	13-425	73	1	25.61
297050-0003	3	13-425	73	1	26.52
297050-0005	5	13-425	73	1	28.53
297050-0010	10	13-425	73	1	30.47

Mantle, Sand Bath Heating

Recommended for performing the experiments in the Williamson textbook. The mantle is electrically heated and utilizes commercially available sand used for ash trays or children's sandboxes. The 100 mL size is preferred and is supplied in 115v. Supplied with a one meter, 3-wire cord and standard U.S. plug. CSA certified.

Kontes Article No.	Flask Capacity (mL)	Watts / Volts		Case Qty.	Case Price
720500-0101	100	140 / 115		1	88.73
Accessory Sand					
748035-0023	Sand, 16 to 30 mesh		10	1	19.16



720500

Power Control, Sand Bath Heating Mantle

Recommended for use with sand bath heating mantle 720500. Individually calibrated control dial for precision at each setting. The proportional on-off control does not vary voltage and is ideal for microscale applications. Available in 115v at 50/60 Hz. Standard U.S. receptacle is supplied to accept standard U.S. plugs on the mantles. Power supply cords is 1 meter, 3-wire. CSA certified.

Kontes Article No.	Volts	Amps	Case Qty.	Case Price
720600-0115	115	8	1	121.37



720600

- **Custom Fabrications**
- **Quality Repairs**
- **Modifications of All Kinds**
- **No Order Too Small**
- **Quick Turnaround**

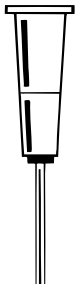
KONTES
custom glass shop
*call toll-free **800-682-6644***
customglass@kimble-chase.com

Contact the **Kontes Custom Glass Shop** at KIMBLE CHASE for modifications of standard products or fabrication of your unique designs. And when it comes to repairs, we can save you up to 75% of the cost of a new item. Save an additional 10% on repairs of Kontes or Kimble Brand products. Fax your requirements to **856-692-6644**.

Needle, Safety Tip, Blunt End, Syringe

Non-sterile stainless steel needle with an inert plastic hub and a blunt end for safety.

Kontes Article No.	Gauge	O.D. (mm)	O.D. (in.)	Needle Length (in.)	Case Qty.	Case Price
868280-1801	18	1.25	0.050	1.0	12	3.50
868280-2001	20	0.90	0.036	1.0	12	3.15
868280-2201	22	0.70	0.028	1.0	12	3.44



868280

Pipet, Pasteur, Disposable (Borosilicate and Soda Lime)

Pasteur-type pipets for one time use in the transfer of small volumes.

Borosilicate Kontes Article No.	Overall Length (in.)	Tip Length (in.)	Body Length (in.)	O.D. (mm)	Case Qty.	Case Price
883350-0575	5 3/4	2 1/4	3 1/2	7	250	15.36
883350-0009	9	5	4	7	250	16.92
Soda Lime Chase Article No.						
63A54	5 3/4	2 1/4	3 1/2	7	1000	65.10
63B93	9	5	4	7	1000	86.80
Soda Lime, Cotton-Plugged Chase Article No.						
63A54P	5 3/4	2 1/4	3 1/2	7	1000	86.80
63B93P	9	5	4	7	1000	108.50
Soda Lime, Blood Bank Dropper Chase Article No.						
63C50	5 3/4	2 1/4	3 1/2	7	1000	86.80
Soda Lime, Monstr-Pette Chase Article No.						
63DP1005	5 3/4	2 1/4	3 1/2	7	800	95.48



883350
63A54 - 63DP1005

Pipette Pump™, Thumb Controlled

Provides a safe method for pipetting. Unit accepts a variety of glass pipets depending on the volume required. These pumps fill and empty simply by rotating the thumb-wheel forward or backward. Particularly useful when using organic solvents. The 2 mL size can be used with 7mm O.D. disposable pasteur pipets. These pumps can be easily disassembled for cleaning if necessary.

Kontes Article No.	Fits Pipets Up To (mL)	Color	Case Qty.	Case Price
763620-0200	2	Blue	1	20.50
763620-1000	10	Green	1	22.61
763620-2500	25	Red	1	31.50



763620

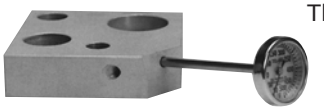
Vacuum / Pressure Pump

A quiet, reliable vacuum source for micro applications. Economically priced all- plastic pump head is supplied with two hose connectors. Free air capacity is 1100 cubic inches/minute.

Kontes Article No.	Vacuum (Hg)	Max. Pressure (psig)	Tubing Adapters	Overall Dimensions L x W x H (in.)	Volts	Hz	Case Qty.	Case Price
923920-0115	20"	18	3/8"	7 x 4 x 5	115	60	1	233.58

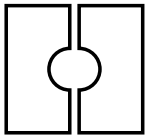


923920



Accessory Thermometer **309180**

720200



720210 Split Block for Vials

Aluminum Heating Block

Ideal for use in place of a sand bath in microscale experiments. Excellent heat transfer is provided. Does not interfere with magnetic stirring. Design parameters suggested by Charles M. Garner of Baylor University in Waco, Texas.

Kontes Article No.	Application	Overall Length x Width x Height (in.)	Case Qty.	Case Price
720200-0001	For ☤ 14/10 Kits (Solid Bottom)	3 x 3 x 3/4	1	38.49
720200-0002	For Williamson Kits (Solid Bottom)	3 x 3 x 3/4	1	38.49
720205-0001	For All Micro Kits (Open Bottom), Four Holes - (2)9/16", 13/16", 21/32",	3 x 3 x 3/4	1	14.62
720210-0001	For Vials (Split Block)	1 1/2 x 1 1/2 x 3/4	1	8.62

Kontes Article No.	Accessory Description	Stem O.D. (mm)	Case Qty.	Case Price
309180-0290	Bi-metallic Thermometer, 10-290 °C	4	1	15.87

Cimarec® Digital Ceramic Top Stirring Hot Plates from Thermolyne



- Improved slow speed stirring and consistent speed control - adjusts from 50 to 1200 rpm. **StirTrac braking feature** brings the stir bar to an immediate stop for quick flask removal.
- **Easy-to-read, LED digital display** indicates temperature settings, adjustable in 5° increments, from 5° up to 540°C (41° to 1004°F).
- Microprocessor-controlled feedback technology maintains consistent, repeatable temperature settings. **Ideal for labs that perform repetitive procedures.**
- **Hot surface alert safety systems** protect from accidental burns. Bright red warning lights signal when heating surface is above 50°C (122°F). Unit display flashes "HOT" - "OFF" when heating is turned off, until heating surface is below a cool 50°C.
- Flat, white ceramic top and high-wattage heating elements combine to provide **superior heating transfer and fast time-to-boil.**
- Integral ring-stand holder accommodates 0.5" (1.3 cm) diameter support rod.
- Rugged low-profile cast aluminum body provides stability and durability.
- Accommodates sample weights to 35 lb. (11.3 kg) on the 10" x 10" models, .25 lb. on the 7" x 7" models and 15 lb. on the 4" x 4" models.
- Supplied with detachable cord and 2" x 3/8" dia. TFE-coated stir bar.

Kontes Article No.	Electrical (50/60 Hz) Volts	Amps	Watts	Stir Range RPM	Operating Temp. Range °C	°F	Shipping Weight Lb. (kg)	Case Qty.	Case Price
4.25" x 4.25" (10.8 x 10.8 cm) Heating Surface: Overall Dimensions 5.0"W (12.7 cm) x 10"D (25.4 cm) x 3.6"H (9.7 cm)									
790950-0401	120	3.4	410	50 to 1200	5 - 540	41 - 1004	7 (3.2)	1	398.20
790950-0402*	220-240	1.9	460	50 to 1200	5 - 540	41 - 1004	7 (3.2)	1	450.99
7.25" x 7.25" (18.4 x 18.4 cm) Heating Surface: Overall Dimensions 8.2"W (20.8 cm) x 13"D (33 cm) x 3.8"H (9.7 cm)									
790950-0701	120	8.6	1040	50 to 1200	5 - 540	41 - 1004	11 (5.0)	1	418.85
790950-0702*	220-240	5.0	1200	50 to 1200	5 - 540	41 - 1004	11 (5.0)	1	516.38
10.25" x 10.25" (26.0 x 26.0 cm) Heating Surface: Overall Dimensions 11.3"W (28.7 cm) x 16.2"D (41.1 cm) x 4"H (10.1 cm)									
790950-1001	120	12.0	1440	50 to 1200	5 - 400	41 - 752	17 (7.7)	1	553.10
790950-1002*	220-240	6.6	1600	50 to 1200	5 - 400	41 - 752	17 (7.7)	1	674.75

*CE Marked

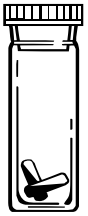
Magnetic Stir Bar, Micro Round, PTFE

PTFE-covered round magnetic stirring bar. This stirrer bar permits stirring in closed containers without contamination. Supplied in glass vial with polyethylene stopper.

Kontes Article No.	Approx. Overall Width x Length (mm)	Bars Per Vial	Case Qty.	Case Price
791140-0020	2 x 7	2	6	27.63
791145-0021	4 x 12	2	12	18.67



791140



791145

Partial Immersion (40 mm) Thermometer, White Back, °C, Shortie

Mercury-filled with nitrogen above the column. Use with threaded apparatus.

Kontes Article No.	Range °C	Subdiv. °C	O.D. (mm)	Approx. Overall Length (mm)	Case Qty.	Case Price
309140-0200	0 to 200	2	5	150	1	17.54
309140-0300	0 to 300	2	5	150	1	17.37



309140

Partial Immersion (40 mm) Thermometer, Yellow Back, °C, Shortie

Mercury-filled with nitrogen above the column. Overall length is 150 (+25, -0)mm. O.D. is 5.5 to 6 mm. Made to N.I.S.T. accuracy tolerances but supplied without a certificate. Accuracy is ± 2°C.

Kontes Article No.	Range °C	Subdiv. °C	O.D. (mm)	Approx. Overall Length (mm)	Case Qty.	Case Price
309150-0200	0 to 200	2	5.7 ± 0.2	160 ± 10	1	16.77
309150-0250	0 to 250	1	5.7 ± 0.2	200 ± 10	1	18.15
309150-0300	0 to 300	2	5.7 ± 0.2	160 ± 10	1	17.17

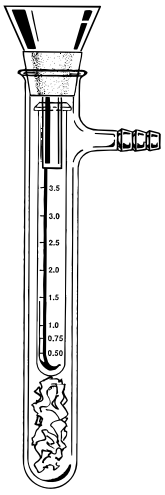


309150

Filtering Tube

With a reinforced lip and a hose connection designed to accept 5/16 inch I.D. flexible tubing. Suitable for filtrations in semi-micro analysis and tooled for use with a 748012-1000 Hirsch funnel.

Kontes Article No.	Capacity (mL)	Approx. O. D. (mm)	Approx. Overall Length (mm)	Hose Connection	Case Qty.	Case Price
748021-1030	30	22	150	#1	1	15.27

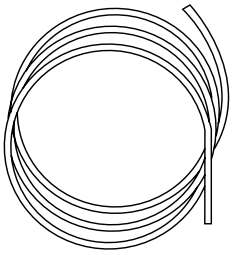


748021

Tubing, Polyethylene

1.7 mm polyethylene tubing fits 18 gauge needles.

Kontes Article No.	Case Qty.	Case Price
748016-1017	10 Ft.	5.09
748016-0017	100 Ft.	47.50



748016

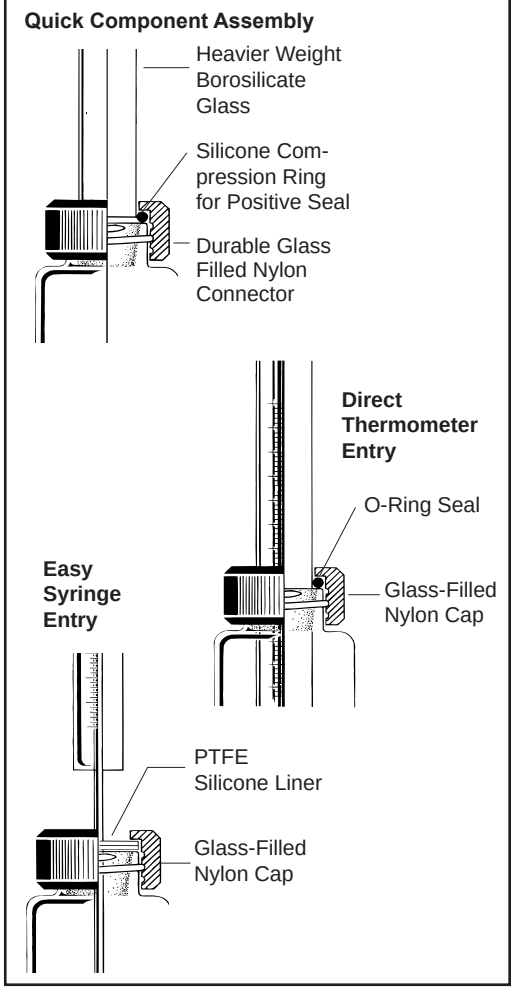
Hose Connector Tubing Size Chart	
Hose Connector Size	Fits Flexible Tubing I.D.
1	1/4"
2	3/8"
3	1/2"
4	3/4"



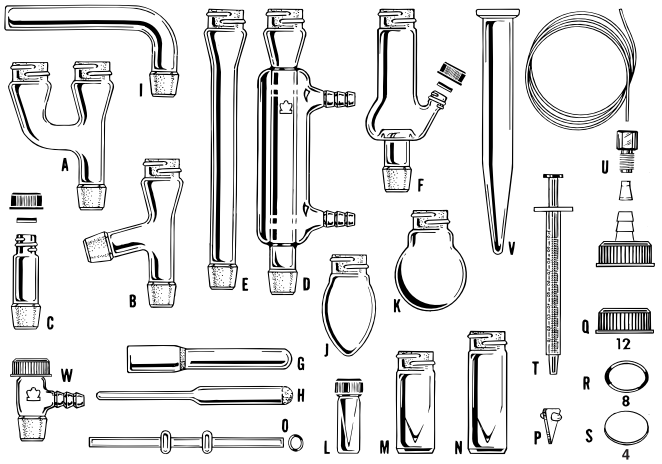
746000-0000

Kits are packed in a rugged polyethylene storage case (2 1/2" H x 13 1/2" W x 10" D) with a die cut foam insert. They fit easily into lab bench drawers.

The MICROFLEX® Ⓢ 14/10 Connection with Threaded O-Ring Cap-Seal



The Standard Ⓢ 14/10 Kit, 746000†



The Standard Kit contains all the components necessary to perform the experiments described in the texts outlined below.

High temperature resistant blue nylon connectors are ideal for use to 200°C.

The 746000 Series MICROFLEX Kits feature Ⓢ 14/10 standard taper connections. The Standard Kit contains all the components necessary to perform the experiments described in the following texts: Organic Laboratory Techniques: A Microscale Approach, Pavia, Lampman, Kriz, Engel, Saunders College Publishing; and Microscale Organic Laboratory, Mayo, Pike, Butcher, John Wiley and Sons.

High temperature resistant blue nylon connectors. Ideal for use to 200°C.

Organic Chemistry, Microscale,Threaded / Ⓢ 14/10, Standard

Kontes Article No.	Description	Case Qty.	Case Price
746000-0000	Standard Threaded / Ⓢ 14/10 Microscale Kit	1	340.59
746000-0005	Corrugated EKONO-CASE Standard Threaded Ⓢ 14/10 Microscale Kit	1	324.95

Kit Components

Kontes Article No.	Item	Description	Kit Qty.	Case Qty.	Case Price
746010-0000	A	Claisen Adapter	1	1	37.59
746020-0000	B	Connecting Adapter	1	1	36.94
746030-0000	C	Thermometer Adapter	1	1	21.14
746050-0000	D	Jacketed Condenser	1	1	48.93
746060-0000	E	Air Condenser	1	1	22.98
746080-0000	F	Hickman Distillation Head	1	1	46.73
747332-0002	G	Craig Recrystallization Tube, 2 mL	1	1	8.88
747331-0001	H	Craig Recrystallization Plug	1	1	7.96
746090-0000	I	Drying Tube	1	1	18.94
746110-0005	J	Pear Shape Flask, 5 mL, Thin-Wall	1	1	16.71
746120-0010	K	Round Bottom Flask, 10 mL	1	1	19.71
60710-110	L	Micro Vial, 0.1 mL	1	12	98.22
746100-0003	M	Micro Vial, 3 mL	1	1	17.37
746100-0005	N	Micro Vial, 5 mL	1	1	17.37
746130-0000	O	GC Collection Tube with O-Ring	1	1	16.56
758252-0006		GC O-ring, FKM, Size 006	-	10	13.63
749060-0003	P	Spin Vane	1	6	63.80
410119-2015	Q	Compression Cap, 20-400	12	12	16.93
758292-0112	R	O-ring, E.P., Size 112	8	10	38.10
774161-0020	S	Septum	4	24	31.61
748019-0001	T	Syringe, Polyethylene	1	12	5.63
746140-1020	U	Gas Delivery Tube	1	1	22.31
411800-1015	V	Centrifuge Tube, 15 mL	1	10	21.92
746035-0814	W	Vacuum Adapter	1	1	30.26
746001-0002		Foam Insert Set	1	1	10.97
746001-0001		Storage Case, Black PE	1	1	19.45

†Standard Kit is necessary to perform all the experiments listed in the texts.

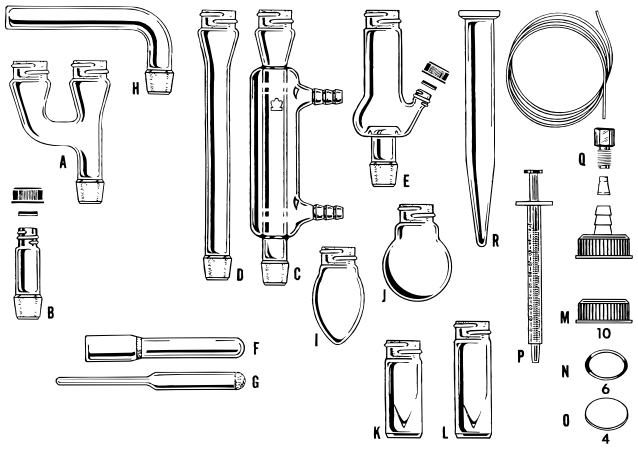
Custom variations and special large quantity prices are available upon request. Call customer service at 888-546-2531 for more information.

Kontes Article No.	Description	Case Qty.	Case Price
746200-0000	Intermediate Ŧ 14/10 Microscale Kit	1	277.94
746200-0005	Corrugated EKONO-CASE Intermediate Ŧ 14/10 Microscale Kit	1	267.52

Kit Components

Kontes Article No.	Item	Description	Kit Qty.	Case Qty.	Case Price
746010-0000	A	Claisen Adapter	1	1	37.59
746030-0000	B	Thermometer Adapter	1	1	21.14
746050-0000	C	Jacketed Condenser	1	11	48.93
746060-0000	D	Air Condenser	1	1	22.98
746080-0000	E	Hickman Distillation Head	1	1	46.73
747332-0002	F	Craig Recrystallization Tube, 2 mL	1	1	8.88
747331-0001	G	Craig Recrystallization Plug	1	1	7.96
746090-0000	H	Drying Tube	1	1	18.94
746110-0005	I	Pear Shaped Flask, 5 mL, Thin Wall	1	1	16.71
746120-0010	J	Round Bottom Flask, 10 mL	1	1	19.71
746100-0003	K	Micro Vial, 3 mL	1	1	17.37
746100-0005	L	Micro Vial, 5 mL	1	1	17.37
410119-2015	M	Compression Cap, 20-400	10	12	16.93
758292-0112	N	O-ring, E.P., Size 112	6	10	38.10
774161-0020	O	Septum	4	24	31.61
748019-0001	P	Syringe, Polyethylene	1	12	5.63
746140-1020	Q	Gas Delivery Tube	1	1	22.31
411800-1015	R	Centrifuge Tube, 15 mL	1	10	21.92
746001-0002		Foam Insert Set	1	1	10.97
746001-0001		Storage Case	1	1	19.45

The Intermediate Ŧ 14/10 Kit, 746200

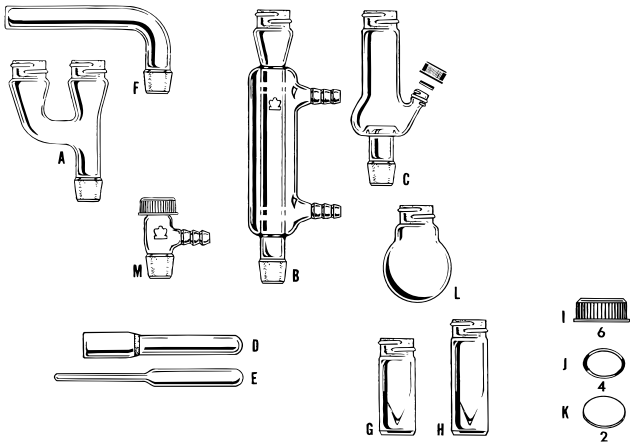


Kontes Article No.	Description	Case Qty.	Case Price
746220-0000	Basic Ŧ 14/10 Microscale Kit	1	215.32
746220-0005	Corrugated EKONO-CASE Basic Ŧ 14/10 Microscale Kit	1	202.27

Kit Components

Kontes Article No.	Item	Description	Kit Qty.	Case Qty.	Case Price
746010-0000	A	Claisen Adapter	1	1	37.59
746050-0000	B	Jacketed Condenser	1	1	48.93
746080-0000	C	Hickman Distillation Head	1	1	46.73
747332-0002	D	Craig Recrystallization Tube, 2 mL	1	1	8.88
747331-0631	E	Craig Recrystallization Plug, PTFE	1	1	9.12
746090-0000	F	Drying Tube	1	1	18.94
746100-0003	G	Micro Vial, 3 mL	1	1	17.37
746100-0005	H	Micro Vial, 5 mL	1	1	17.37
410119-2015	I	Compression Cap, 20-400	7	12	16.93
758292-0112	J	O-Ring, E.P., Size 112	5	10	38.10
774161-0020	K	Septum	2	24	31.61
746120-0010	L	Round Bottom Flask, 10 mL	1	1	19.71
746035-0814	M	Universal Inlet/Vacuum Adapter	1	1	30.26
746001-0002		Foam Insert Set	1	1	10.97
746001-0001		Storage Case	1	1	19.45

The Basic Ŧ 14/10 Kit, 746220

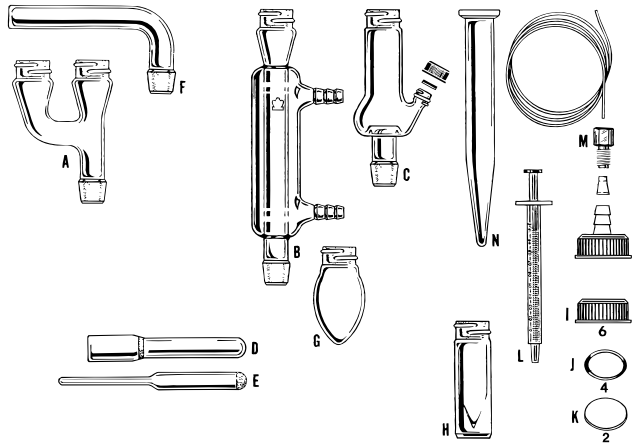


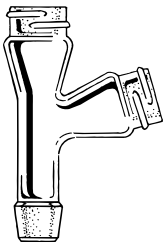
Kontes Article No.	Description	Case Qty.	Case Price
746210-0000	Starter Ŧ 14/10 Microscale Kit	1	197.06
746210-0005	Corrugated EKONO-CASE Starter Ŧ 14/10 Microscale Kit	1	189.20

Kit Components

Kontes Article No.	Item	Description	Kit Qty.	Case Qty.	Case Price
746010-0000	A	Claisen Adapter	1	1	37.59
746050-0000	B	Jacketed Condenser	1	1	48.93
746080-0000	C	Hickman Distillation Head	1	1	46.73
747332-0002	D	Craig Recrystallization Tube, 2 mL	1	1	8.88
747331-0001	E	Craig Recrystallization Plug	1	1	7.96
746090-0000	F	Drying Tube	1	1	18.94
746110-0005	G	Pear Shaped Flask, 5 mL, Thin Wall	1	1	16.71
746100-0005	H	Micro Vial, 5 mL	1	1	17.37
410119-2015	I	Compression Cap, 20-400	6	12	16.93
758292-0112	J	O-Ring, E.P., Size 112	4	10	38.10
774161-0020	K	Septum	2	24	31.61
748019-0001	L	Syringe, Polyethylene	1	12	5.63
746140-1020	M	Gas Delivery Tube	1	1	22.31
411800-1015	N	Centrifuge Tube, 15 mL	1	10	21.92
746001-0002		Foam Insert Set	1	1	10.97
746001-0001		Storage Case	1	1	19.45

The Starter Ŧ 14/10 Kit, 746210

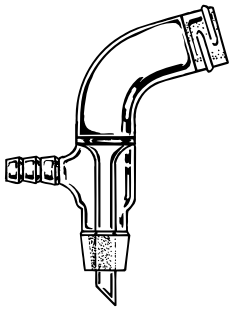




746320



746035



746040

Connecting Adapter

For connecting various components in an airless or distillation application. Use with 746020 connecting adapter for micro “H” configuration or as a cross for decanting applications.

Kontes Article No.	Ⓢ Joints	Case Qty.	Case Price
746320-0000	14/10	1	37.59

Inlet Adapter, Vacuum

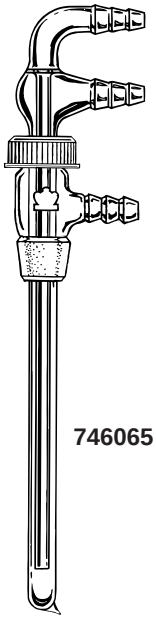
For use with plain-stemmed apparatus with 5 to 8 mm O.D. Compression cap and FKM o-ring provide a vacuum tight seal and allow for adjustment.

Kontes Article No.	Ⓢ Joint	Hose Connection	Case Qty.	Case Price
746035-0814	14/10	#1	1	30.26

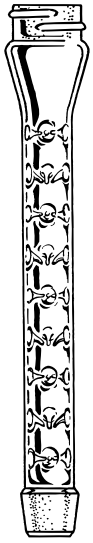
Vacuum Adapter

Bent at 105° with hose connector and drip tip, this adapter permits “closed system” applications.

Kontes Article No.	Ⓢ Joint	GPI Thread Size	Hose Connection	Approx. Overall Height (mm)	Case Qty.	Case Price
746040-0000	14/10	20-400	#1	80	1	42.55



746065



746150

Column, Vigreux, Distilling, Ⓢ 14/10

Indentations over the entire length improve vapor-liquid contact.

Kontes Article No.	Ⓢ Joints	GPI Thread Size	Column Height (mm)	Case Qty.	Case Price
746150-0000	14/10	20-400	75	1	48.67

Condenser, Cold Finger, Micro Adjustable, Ⓢ 14/10

Drip tip on the bottom directs drops into the collar of Hickman distillation heads.

Kontes Article No.	Ⓢ Joint	Hose Connection	Case Qty.	Case Price
746065-0000	14/10	#1	1	71.45

Component Parts

282010-0000	Condenser Only, 7 mm O.D.	1	38.88
746035-0814	Inlet/Vacuum Adapter Only, Ⓢ 14/10, 5-8 mm	1	30.26

Cap, O-Ring, Septum

For Ⓢ 14/10 connections with threaded o-ring cap seals.

Kontes Article No.	Description	Case Qty.	Case Price
410119-2015	Cap, Glass-Filled Nylon, 20-400	12	16.93
758292-0112	O-Ring, Ethylene Propylene, Size 112	10	38.10
774161-0020	Septum, PTFE / Silicone, Fits Thread Cap Size 20	24	31.61



410119



747205-1313

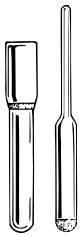


747205-1320

Tube, Craig Recrystallization

The Craig stopper is placed in the tube neck and the whole apparatus is inverted into a test or centrifuge tube. Centrifuging forms a mat of crystals between the stopper and the walls of the Craig tube, and draws away excess solvent. Sold in sets.

Kontes Article No.	Cap. (mL)	Case Qty.	Case Price
747330-0002	1	1	18.29
747330-0003	2	1	19.16
Component Parts			
747332-0001	Tube, 1 mL	1	8.88
747332-0002	Tube, 2 mL	1	8.88
747331-0001	Plug, Glass, 1 & 2 mL	1	7.96
Accessory Part			
747331-0631	Plug, PTFE, 1 & 2 mL	1	9.12



747330



Accessory 747331 PTFE Plug

Dish, Sand Bath

Useful as a sand bath for heating microscale reactions. Top of each KIMAX dish is reinforced and fire polished to reduce chipping.

Kimble Article No.	**Approx. O.D. x** Height (mm)	**Approx. Overflow** Capacity (mL)	**Case** Qty.	**Case** Price
23000-8040	80 x 40	170	6	278.16

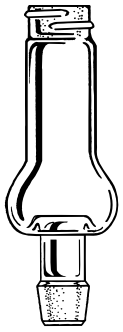


23000

Distillation Head, Hickman, Ʃ 14/10

Designed for atmospheric or vacuum distillations with quantities ranging from a fraction of a milliliter to three milliliters.

Kontes Article No.	Ʃ Joints	GPI Thread Size	Column Height (mm)	Case Qty.	Case Price
746070-0000	14/10	20-400	90	1	41.50

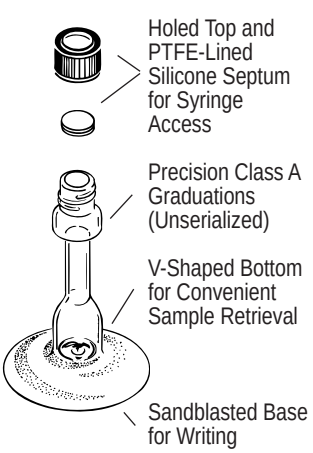


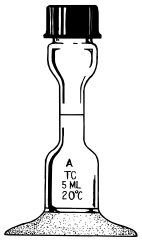
746070

Volumetric Flask, Micro, Class A

Class A threaded flask has an open top phenolic cap and a PTFE-lined silicone septum for syringe access. Calibrated to contain. V-shaped bottom provides convenient sample retrieval.

Kontes Article No.	Capacity (mL)	GPI Thread size	Approx. Overall Height (mm)	Case Qty.	Case Price
297050-0001	1	13-425	73	1	23.96
297050-0002	2	13-425	73	1	25.61
297050-0003	3	13-425	73	1	26.52
297050-0005	5	13-425	73	1	28.53
297050-0010	10	13-425	73	1	30.47





297050

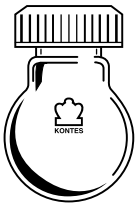


746115

Cylindrical Bottom Vial, Ŧ 14/10

Cylindrical bottom vial with threaded outer joint for use with Ŧ 14/10 microscale apparatus. Supplied with a blue, glass-filled nylon cap (410110-2015), a PTFE/Silicone liner (774161-0020) and a size 112 ethylene propylene o-ring (758292-0112).

Kontes Article No.	Capacity (mL)	Ŧ Joint	Approx. O.D. (mm)	Case Qty.	Case Price
746115-0010	10	14/10	23	1	19.56



746120

Boiling Flask, Round Bottom, Ŧ 14/10

Round bottom boiling flask with threaded outer joint for use with Ŧ 14/10 microscale apparatus. Supplied with a blue, glass-filled nylon cap 410119, a PTFE/silicone septum 774161 and an ethylene propylene o-ring, 758292.

Kontes Article No.	Capacity (mL)	Ŧ Joint	Approx. O.D. (mm)	Case Qty.	Case Price
746120-0005	5	14/10	25	1	20.64
746120-0010	10	14/10	31	1	19.71
746120-0025	25	14/10	42	1	21.66



720500

Mantle, Sand Bath Heating

Recommended for performing the experiments in the Williamson textbook. The mantle is electrically heated and utilizes commercially available sand used for ash trays or children's sandboxes. The 100 mL size is preferred and is supplied in 115v. Supplied with a one meter, 3-wire cord and standard U.S. plug. CSA certified.

Kontes Article No.	Flask Capacity (mL)	Watts / Volts	Case Qty.	Case Price
720500-0101	100	140 / 115	1	88.73

Accessory Sand

748035-0023	Sand, 16 to 30 mesh	10	1	19.16

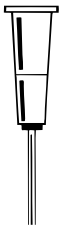


720600

Power Control, Sand Bath Heating Mantle

Recommended for use with sand bath heating mantle 720500. Individually calibrated control dial for precision at each setting. The proportional on-off control does not vary voltage and is ideal for microscale applications. Available in 115v at 50/60 Hz. Standard U.S. receptacle is supplied to accept standard U.S. plugs on the mantles. Power supply cords is 1 meter, 3-wire. CSA certified.

Kontes Article No.	Volts	Amps	Case Qty.	Case Price
720600-0115	115	8	1	121.37



868280

Needle, Safety Tip, Blunt End, Syringe

Non-sterile stainless steel needle with an inert plastic hub and a blunt end for safety.

Kontes Article No.	Gauge	O.D. (mm)	O.D. (in.)	Needle Length (in.)	Case Qty.	Case Price
868280-1801	18	1.25	0.050	1.0	12	3.50
868280-2001	20	0.90	0.036	1.0	12	3.15
868280-2201	22	0.70	0.028	1.0	12	3.44

Pipet, Pasteur, Disposable (Borosilicate and Soda Lime)

Pasteur-type pipets for one time use in the transfer of small volumes.

Borosilicate Kontes Article No.	Overall Length (in.)	Tip Length (in.)	Body Length (in.)	O.D. (mm)	Case Qty.	Case Price
883350-0575	5 3/4	2 1/4	3 1/2	7	250	15.36
883350-0009	9	5	4	7	250	16.92
Soda Lime Chase Article No.						
63A54	5 3/4	2 1/4	3 1/2	7	1000	65.10
63B93	9	5	4	7	1000	86.80
Soda Lime, Cotton-Plugged Chase Article No.						
63A54P	5 3/4	2 1/4	3 1/2	7	1000	86.80
63B93P	9	5	4	7	1000	108.50
Soda Lime, Blood Bank Dropper Chase Article No.						
63C50	5 3/4	2 1/4	3 1/2	7	1000	86.80
Soda Lime, Monstr-Pette Chase Article No.						
63DP1005	5 3/4	2 1/4	3 1/2	7	800	95.48



883350
63A54 - 63DP1005

Pipette Pump™, Thumb Controlled

Provides a safe method for pipetting. Unit accepts a variety of glass pipets depending on the volume required. These pumps fill and empty simply by rotating the thumb-wheel forward or backward. Particularly useful when using organic solvents. The 2 mL size can be used with 7mm O.D. disposable pasteur pipets. These pumps can be easily disassembled for cleaning if necessary.

Kontes Article No.	Fits Pipets Up To (mL)	Color	Case Qty.	Case Price
763620-0200	2	Blue	1	20.50
763620-1000	10	Green	1	22.61
763620-2500	25	Red	1	31.50



763620

Capillary Tubes, Disposable, Microcaps®

Microcaps® are ingeniously simple . . . in concept and in use. These precision-bore glass capillary tubes are cut to predetermined lengths, so that each capillary tube will hold a known volume of fluid when filled.

Drummond Microcaps are so inexpensive that it is almost always practical to dispose of the tube after use.

Filling is simple. Capillary action not externally applied suction draws the fluid into the tube. To dispense the fluid, simply squeeze the bulb. No unusual skills or training is required. Immediate, professional results. Ideal for spotting preadsorbent TLC plates.

Supplied in packages containing 1 bulb assembly and 1 dispenser vial with 100 micropipets.

Kontes Article No.	Capacity (µL)	Length (mm)	Relative I.D. (in.)	Relative O.D. (in.)	Vol. Tol.(%)	Case Qty.	Case Price
764500-0000	0.5	32	0.0056	0.022	+ 1	100	31.01
764500-0001	1.0	32	0.0078	0.025	+ 1	100	25.66
764500-0002	2.0	32	0.0111	0.030	+ 1	100	25.66
764500-0005	5.0	32	0.0174	0.0355	+ 1	100	25.66
764500-0010	10.0	41	0.0219	0.0314	+ 1	100	25.66
764500-0020	20.0	64	0.0249	0.0355	+ 1	100	25.66
764500-0025	25.0	65	0.0272	0.0382	+ 1	100	25.66
764500-0050	50.0	100	0.0314	0.043	+ 1	100	25.66
764500-0100	100.0	116	0.0410	0.0555	+ 1	100	25.66



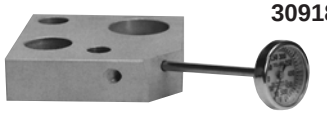
764500

For the MICROCAP “5 PACK” see 764520.



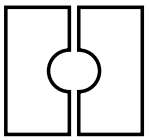
923920

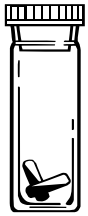
Accessory Thermometer
309180



720200

720210
Split Block for Vials





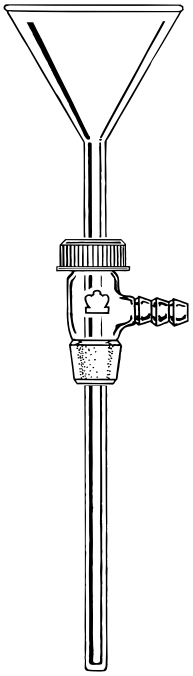
791145



791140



850500



746125

Vacuum / Pressure Pump

A quiet, reliable vacuum source for micro applications. Economically priced all- plastic pump head is supplied with two hose connectors. Free air capacity is 1100 cubic inches/minute.

Kontes Article No.	Vacuum (Hg)	Pressure (psig)	Tubing Adapters	Overall Dimensions L x W x H (in.)	Volts	Hz	Case Qty.	Case Price
923920-0115	20"	18	3/8"	7 x 4 x 5	115	60	1	233.58

Stirring Hot Plates are listed on page 304.

Aluminum Heating Block

Ideal for use in place of a sand bath in microscale experiments. Excellent heat transfer is provided. Does not interfere with magnetic stirring. Design parameters suggested by Charles M. Garner of Baylor University in Waco, Texas.

Kontes Article No.	Application	Overall L x W x H (in.)	Case Qty.	Case Price
720200-0001	For Ⓢ 14/10 Kits (Solid Bottom)	3 x 3 x 3/4	1	38.49
720200-0002	For Williamson Kits (Solid Bottom)	3 x 3 x 3/4	1	38.49
720205-0001	For All Micro Kits (Open Bottom), Four Holes - (2) 9/16", 13/16", 21/32"	3 x 3 x 3/4	1	14.62
720210-0001	For Vials (Split Block)	1 1/2 x 1 1/2 x 3/4	1	8.62

Accessory Kontes Article No.	Description	Stem O.D. (mm)	Case Qty.	Case Price
309180-0290	Bi-metallic Thermometer, 10-290 °C	4	1	15.87

Magnetic Stir Bar, Micro Round, PTFE

PTFE-covered round magnetic stirring bar. This stirrer bar permits stirring in closed containers without contamination. Supplied in glass vial with polyethylene stopper.

Kontes Article No.	Approx. Overall Width x Length (mm)	Bars Per Vial	Case Qty.	Case Price
791140-0020	2 x 7	2	6	27.63
791145-0021	4 x 12	2	12	18.67

Stopper, Glass, Solid, Pennyhead, Ⓢ Medium Length

Sizes Ⓢ 10/18 through Ⓢ 19/22 are solid. Sizes Ⓢ 24/25 and larger are hollow.

Kontes Article No.	Ⓢ Joint	Case Qty.	Case Price
850500-1018	10/18	1	13.18
850505-1410	14/10	1	13.57
850500-1420	14/20	1	13.70
850500-1922	19/22	1	15.27
850500-2425	24/25	1	24.66
850500-2926	29/26	1	28.44
850500-3428	34/28	1	37.07

Sublimator, Ⓢ 14/10

Sublimation assembly with vertically adjustable condenser tube for use with microscale vessels.

Kontes Article No.	Ⓢ Joint	Hose Connection	Case Qty.	Case Price
746125-0000	14/10	#1	1	41.50
Component Parts				
746125-0001	Funnel Condenser Only		1	9.12
746035-0814	Inlet/Vacuum Adapter Only, 5-8 mm		1	30.26

Partial Immersion (40 mm) Thermometer, White Back, °C, Shortie

Mercury-filled with nitrogen above the column. Use with threaded apparatus.

Kontes Article No.	Range °C	Subdiv. °C	O.D. (mm)	Approx. Overall Length (mm)	Case Qty.	Case Price
309140-0200	0 to 200	2	5	150	1	17.54
309140-0300	0 to 300	2	5	150	1	17.37



309140

Partial Immersion (40 mm Thermometer, Yellow Back, °C, Shortie

Mercury-filled with nitrogen above the column. Overall length is 150 (+25, -0)mm. O.D. is 5.5 to 6 mm. Made to N.I.S.T. accuracy tolerances but supplied without a certificate. Accuracy is ± 2°C.

Kontes Article No.	Range °C	Subdiv. °C	O.D. (mm)	Approx. Length (mm)	Case Qty.	Case Price
309150-0200	0 to 200	2	5.7 ± 0.2	160 ± 10	1	16.77
309150-0250	0 to 250	1	5.7 ± 0.2	200 ± 10	1	18.15
309150-0300	0 to 300	2	5.7 ± 0.2	160 ± 10	1	17.17

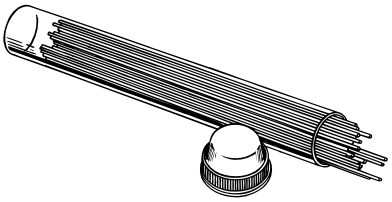


309150

Melting Point Capillary

Closed at one end and packaged in vials of approximately 100 capillaries.

Kontes Article No.	Approx. Length (mm)	Approx. O.D. x I.D. (mm)	Case Qty.	Case Price
744250-0022	100	1.5 x 1	100	13.79
744250-0023	150	1.5 x 1	100	33.83



744250

Conical Bottom Vial, S14/10

Conical bottom with thin wall permits better heat transfer. The vial has a threaded outer joint for use with S14/10 microscale apparatus. Supplied with a blue, glass-filled nylon cap (410119-2015), a PTFE/silicone septum (774161-0020) and an ethylene propylene o-ring (758292-0112).

Kontes Article No.	Capacity (mL)	S Joint	Approx. Overall Height x O.D. (mm)	Case Qty.	Case Price
746105-0003	3	14/10	45 x 17	1	19.05
746105-0005	5	14/10	57 x 17	1	19.33
746105-0010	10	14/10	87 x 17	1	19.56

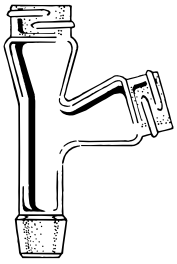


746105

Connecting Adapter, Microscale

For connecting various components in an airless or distillation application. Use with 746020 connecting adapter for micro “H” configuration or as a cross for decanting applications.

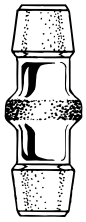
Kontes Article No.	S Joints	Case Qty.	Case Price
746320-0000	14/10	1	37.59



746320

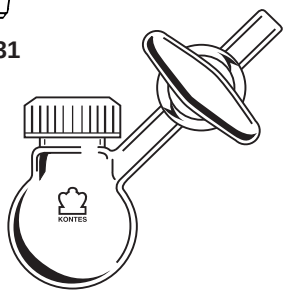


746035

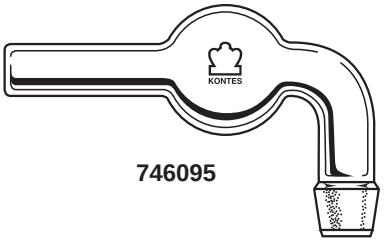




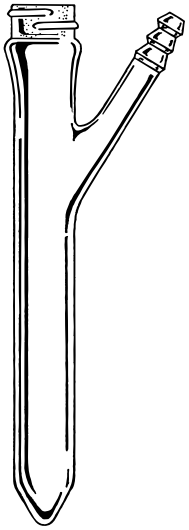
746330 746331

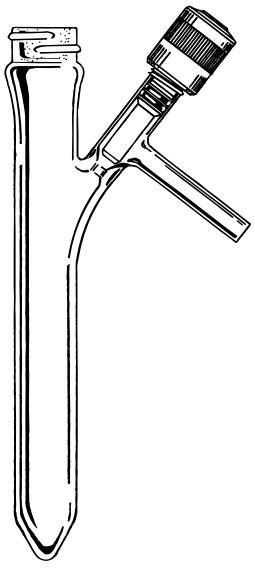


746122



746095





746340 746345







410119 747205-1313 747205-1320

Inlet Adapter, Vacuum

For use with plain-stemmed apparatus with 5 to 8 mm O.D. Compression cap and FKM o-ring provide a vacuum tight seal and allow for adjustment.

Kontes Article No.	⅋ Joint	Hose Connection	Case Qty.	Case Price
746035-0814	14/10	#1	1	30.26

Filter Adapter, Double Ended, ⅋ 14/10 Joints

Used for filtration followed by crystallization and collection of crystals on the opposite side of the frit.

Kontes Article No.	⅋ Joints	Frit Porosity	Case Qty.	Case Price
746330-0044	14/10 Inner/Inner	Medium	1	42.01
746331-0044	14/10 Outer/Inner	Medium	1	42.01

Round Bottom Flask with Stopcock Sidearm, ⅋ 14/10

Recommended for experiments in Microscale Inorganic Chemistry. Sidearm has a 2 mm bore stopcock with a threaded plug for vacuum use or manipulations of air-sensitive compounds.

Kontes Article No.	⅋ Joints	Capacity (mL)	Approx. Body O.D. (mm)	Case Qty.	Case Price
746122-0010	10	14/10	31	1	65.12
746122-0025	25	14/10	42	1	66.24
Replacement Parts					
801020-0002	Stopcock Comp Threaded, Size 2			1	42.45
801021-0002	Stopcock Plug Threaded, Size 2			1	26.73

Drying Tube, Bent

Modified drying tube with an expansion bulb for $CaCl_2$, as shown in the textbook, Microscale Organic Chemistry, Szafran, Pike, Singh, John Wiley & Sons, Inc.

Used to protect moisture sensitive reactions from the atmosphere with an unsealed system.

Kontes Article No.	⅋ Joint	Approx. Bulb O.D. (mm)	Approx. Overall Height x Width (mm)	Case Qty.	Case Price
746095-0000	14/10	30	45 x 85	1	22.72

Schlenk Tube, ⅋ 14/10 Joints

Designed to minimize the loss of volatile solvents while manipulating under normal conditions. Working capacity is 5 mL to less than 1 mL solvent or 100 mg to less than 1 mg substrate.

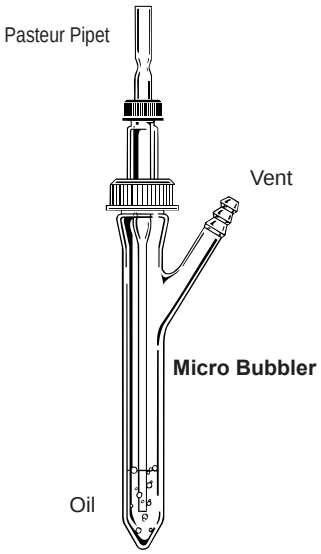
Kontes Article No.	⅋ Joint	Tube Body O.D.(mm)	Approx. Overall Height x Width (mm)	Case Qty.	Case Price
746340-0005	14/10 with #1 Hose Connection	15	142 x 48	1	29.37
746345-0005	14/10 with Size 2 PTFE Valve	15	142 x 65	1	76.99

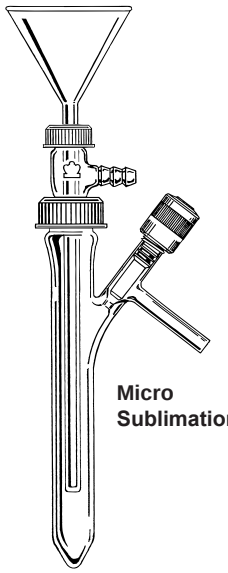
Cap, O-Ring, Septum

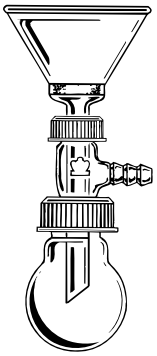
For ⅋ 14/10 connections with threaded o-ring cap seals.

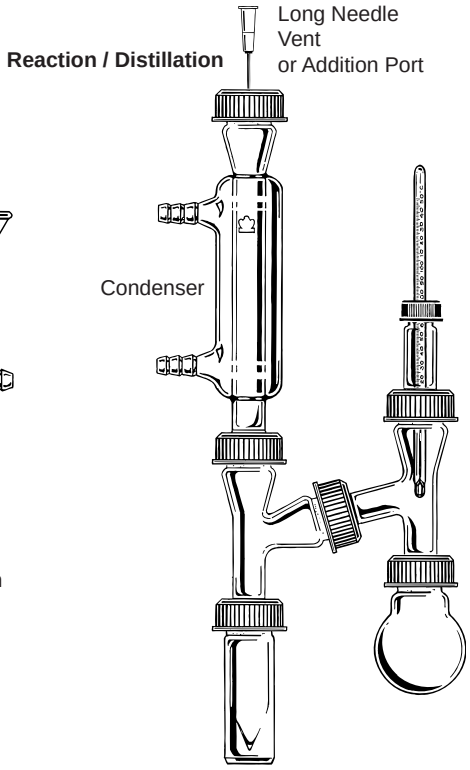
Kontes Article No.	Description	Case Qty.	Case Price
410119-2015	Cap, Glass-Filled Nylon, 20-400	12	16.93
758292-0112	O-Ring, Ethylene Propylene, Size 112	10	38.10
774161-0020	Septum, PTFE / Silicone, Fits Thread Cap Size 20	24	31.61

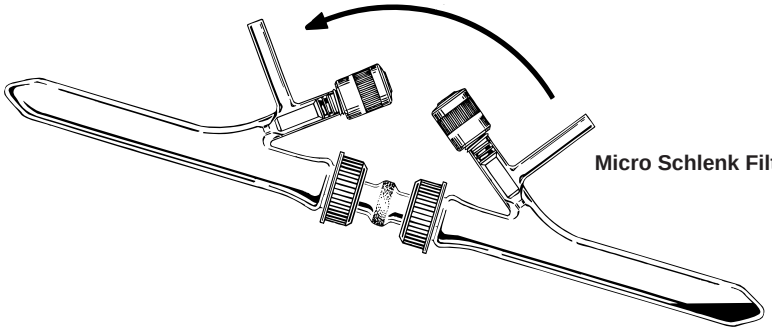
Typical Applications

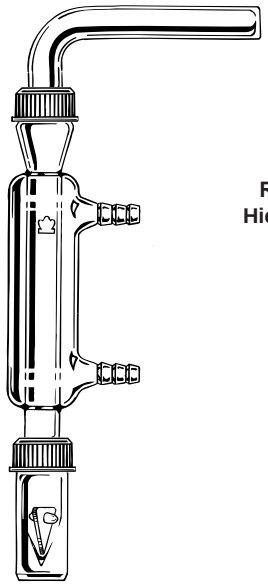




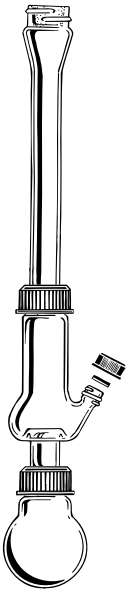




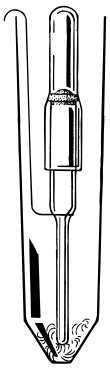




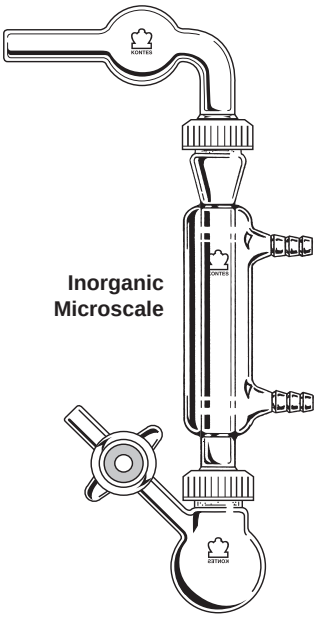
Moisture-Protected Reaction Apparatus
Water-Jacketed Condenser
Drying Adapter



Reflux Apparatus
Hickman Still Head
Air Condenser



Crystallization
Using Centrifugation



Inorganic
Microscale

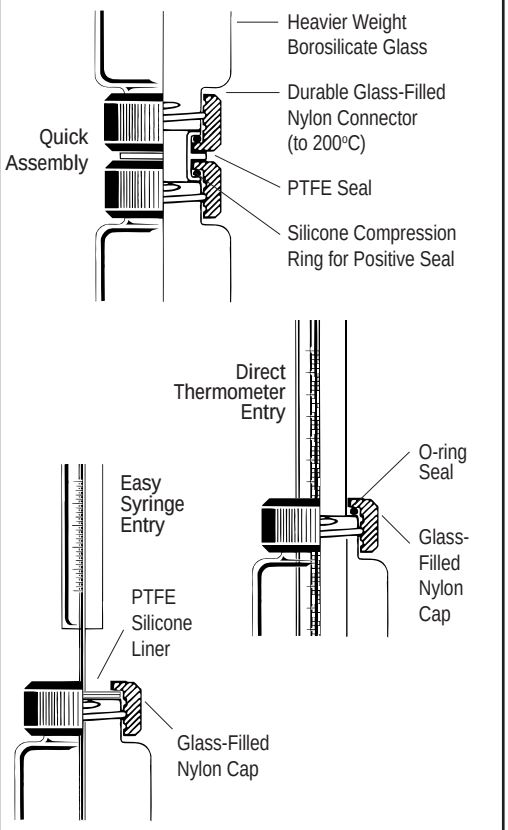


747020-0000

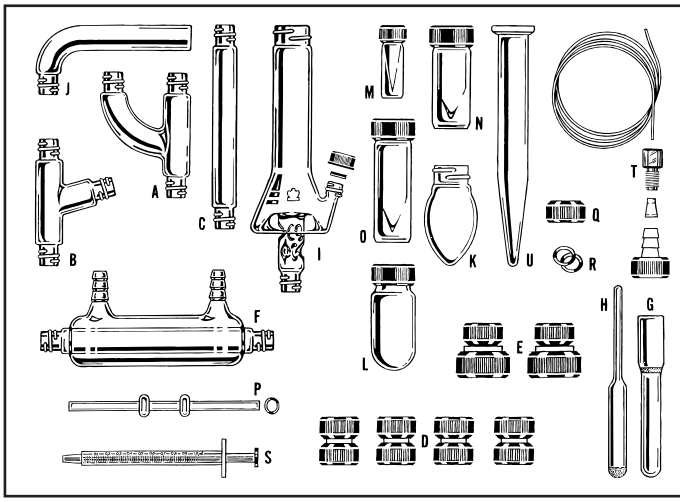
Kits are packed in a rugged polyethylene storage case (2 1/2" H x 13 1/2" W x 10" D) with a die cut foam insert. They fit easily into lab bench drawers.

Also available in EKONO-CASE™, a low cost corrugated cardboard alternative to plastic.

MICROFLEX® Threaded Connection
No Grease, clamps or hooks and springs.



Super Academic Threaded Kit, 747020



Threaded Microscale Kits

These kits feature heat-resistant, blue, nylon connectors that are ideal for use to 200°C.

The 747000 Series MICROFLEX® Kits feature versatile threaded chaste connections. They can be assembled "rightside up" or "upside down", providing great versatility.

The Standard Academic kit contains all the components necessary to perform the experiments described in the following texts: ORGANIC LABORATORY TECHNIQUES A MICROSCALE APPROACH, Pavia, Lampman, Kriz, Engel, Saunders College Publishing: and MICROSCALE ORGANIC LABORATORY, Mayo, Pike, Butcher, John Wiley and Sons.

High temperature resistant blue nylon connectors. Ideal for use to 200°C.

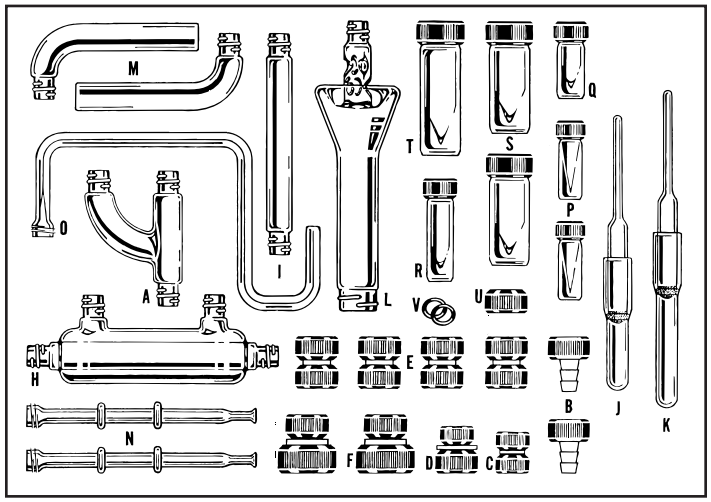
Organic Chemistry Kit, Microscale, Threaded, Super Academic, MICROFLEX®

Kontes Article No.	Description	Case Qty.	Case Price
747020-0000	Super Threaded Microscale Kit	1	326.26
747020-0005	Corrugated EKONO-CASE Super Threaded Microscale Kit	1	318.41

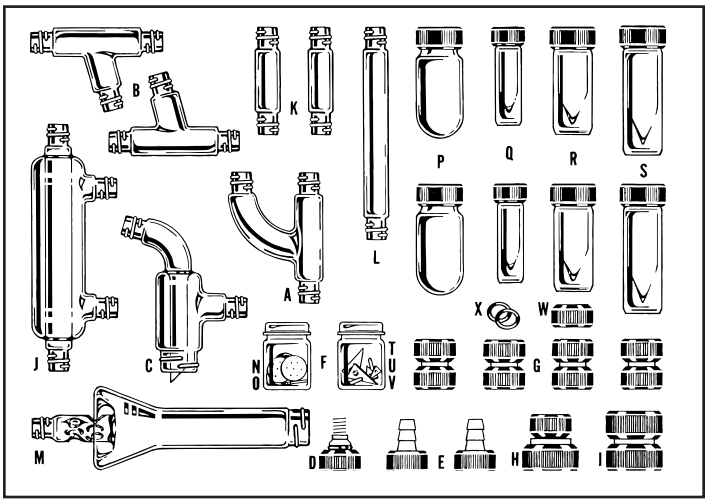
Kit Components

Kontes Article No.	Item	Description	Kit Qty.	Case Qty.	Case Price
747100-0000	A	Claisen Adapter, 13-425	1	1	15.27
747120-0000	B	Connecting Adapter, 13-425	1	1	15.27
747300-0100	C	Air Condenser, 13-425, 100 mm	1	1	13.18
747205-1313	D	Connector, 13-425 to 13-425	4	1	12.27
747205-1320	E	Connector, 13-425 to 20-400	2	1	13.18
747255-0000	F	Water Jacketed Condenser, 13-425	1	1	46.32
747332-0002	G	Craig Recrystallization Tube, 2 mL	1	1	8.88
747331-0001	H	Craig Recrystallization Plug	1	1	7.96
747355-0000	I	Hickman Distillation Head	1	1	51.29
747370-0000	J	Drying Tube	1	1	14.62
747540-0520	K	Pear Shaped Flask, 5 mL	1	1	9.67
747500-0010	L	Cylindrical Flask, 10 mL	1	1	10.57
60710-110	M	Micro Vial, 0.1 mL	1	12	98.22
60700-3	N	Micro Vial, 3 mL	1	12	107.18
60700-5	O	Micro Vial, 5 mL	1	12	117.33
746130-0000	P	GC Collection Tube with O-Ring	1	1	16.56
758252-0006		GC O-Ring, FKM, Size 006	-	10	13.63
410119-1307	Q	Compression Cap, 13-425	1	12	16.01
758252-0107	R	Cap O-Ring, FKM, size 107	2	10	17.99
748019-0001	S	Syringe, Polyethylene	1	12	5.63
746140-1013	T	Gas Delivery Tube	1	1	24.01
411800-1015	U	Centrifuge Tube	1	10	21.92
746001-0002		Foam Insert Set	1	1	10.97
746001-0001		Storage Case, Black PE	1	1	19.45
Accessories					
309140-0200		Thermometer, 0-200°C	1	1	17.54
309140-0300		Thermometer, 0-300°C	1	1	17.37

Standard Academic Threaded Kit, 747010†



Research Threaded Kit, 747000



Organic Chemistry, Microscale, Threaded, Standard Academic, MICROFLEX®

Kontes Article No.	Description	Case Qty.	Case Price
747010-0000	Standard Threaded Microscale Kit	1	408.46
747010-0005	Corrugated EKONO-CASE Standard Threaded Microscale Kit	1	398.03

Kit Components

Kontes Article No.	Item	Description	Kit Qty.	Case Qty.	Case Price
747100-0000	A	Claisen Adapter, 13-425	1	1	15.27
747185-0013	B	Connector, 13-425 to Hose Conn.	2	1	11.35
747205-0808	C	Connector, 8-425 to 8-425	1	1	11.47
747205-0813	D	Connector, 8-425 to 13-425	1	1	12.27
747205-1313	E	Connector, 13-425 to 13-425	4	1	12.27
747205-1320	F	Connector, 13-425 to 20-400	2	1	13.18
747250-0000	H	Water Jacketed Condenser, 13-425	1	1	43.45
747300-0100	I	Air Condenser/Chromatography Column,100 mm, 13-425	1	1	13.18
747330-0002	J	Craig Recrystallization App., 1 mL	1	1	18.29
747330-0003	K	Craig Recrystallization App., 2 mL	1	1	19.16
747350-0000	L	Hickman Distillation Head	1	1	46.32
747370-0000	M	Drying Tube, 13-425	2	1	14.62
747600-0000	N	GC Collection Tube, 8-425	2	1	16.56
747620-0000	O	Capillary Gas Delivery Tube, 8-425	1	1	29.61
60710-110	P	Micro Vial, 0.1 mL, 8-425	2	12	98.22
60710-310	Q	Micro Vial, 0.3 mL, 13-425	1	12	91.64
60700-1	R	Micro Vial, 1 mL, 13-425	1	12	100.60
60700-3	S	Micro Vial, 3 mL, 20-400	2	12	107.18
60700-5	T	Micro Vial, 5 mL, 20-400	1	12	117.33
410119-1307	U	Compression Cap, 13-425	1	12	16.01
758252-0107	V	Cap O-Ring, FKM, Size 107	2	10	17.99
747011-0002		Foam Insert Set	1	1	7.96
746001-0001		Storage Case	1	1	19.45

†Standard Kit is necessary to perform all the experiments listed in the texts.

Organic Chemistry, Microscale, Threaded, Research, MICROFLEX®

Kontes Article No.	Description	Case Qty.	Case Price
747000-0000	Standard Threaded Microscale Kit	1	417.57
747000-0005	Corrugated EKONO-CASE Standard Threaded Microscale Kit	1	405.84

Kit Components

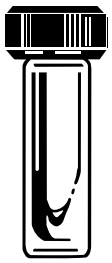
Kontes Article No.	Item	Description	Kit Qty.	Case Qty.	Case Price
747100-0000	A	Claisen Adapter, 13-425	1	1	15.27
747120-0000	B	Connecting Adapter, 13-425	2	1	15.27
747140-0000	C	Vacuum Adapter, 13-425, 20-400	1	1	26.35
747160-0000	D	Connector, 13-425 to 1/4"-28	1	1	11.35
747185-0013	E	Connector, 13-425 to Hose Conn.	2	1	11.35
747190-0010	F	Micro Beaker, 10 mL	2	6	26.21
747205-1313	G	Connector, 13-425 to 13-425	4	1	12.27
747205-1320	H	Connector, 13-425 to 20-400	1	1	13.18
747205-2020	I	Connector, 20-400 to 20-400	1	1	12.27
747250-0000	J	Water Jacketed Condenser, 13-425	1	1	43.45
747300-0050	K	Drying Tube/Chromatography Column, 50 mm, 13-425	2	1	9.93
747300-0100	L	Air Condenser/Chromatography Column, 100 mm, 13-425	1	1	13.18
747350-0000	M	Hickman Distillation Head	1	1	46.32
747400-2313	N	PTFE Filter, 30-60 microns, 13 mm	6	6	13.06
747405-0013	O	PTFE Filter Support, 13 mm	6	6	13.06
747500-0010	P	Cylindrical Flask, 10mL, 20-400	2	1	10.57
60700-1	Q	Micro Vial, 1 mL, 13-425	2	12	100.60
60700-3	R	Micro Vial, 3 mL, 20-400	2	12	107.18
60700-5	S	Micro Vial, 5 mL, 20-400	2	12	117.33
749060-0000	T	PTFE Spin Vane, 13	2	6	53.85
749060-0003	U	PTFE Spin Vane, 20	2	6	63.80
791140-0020	V	Micro Spinbar, 2 x 7 mm	2	6	27.63
410119-1307	W	Compression Cap, 13-425	1	12	16.01
758252-0107	X	Cap O-Ring, FKM, Size 107	2	10	17.99
747001-0002		Foam Insert Set	1	1	10.04
746001-0001		Storage Case	1	1	19.45

Accessories

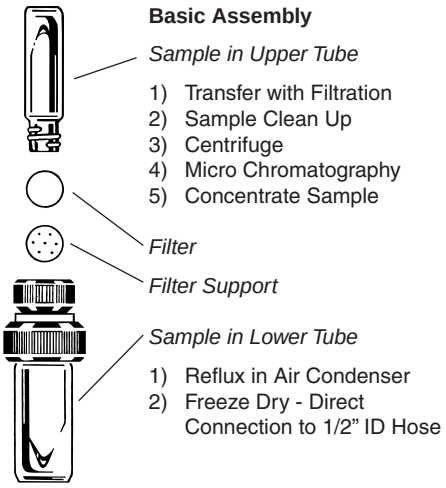
747400-2320	PTFE FIlter, 30-60 microns, 20 mm	6	13.06
747405-0020	PTFE Filter Support, 20 mm	6	13.06

Custom variations and special large quantity prices are available upon request. Call customer service at 888-546-2531 for more information.

Typical Mayo / Microscale Set-ups – Quick . . . Easy-to-Assemble.



Micro Vials
The shape that makes handling milligram quantities easy.



Basic Assembly

Sample in Upper Tube

1) Transfer with Filtration
2) Sample Clean Up
3) Centrifuge
4) Micro Chromatography
5) Concentrate Sample

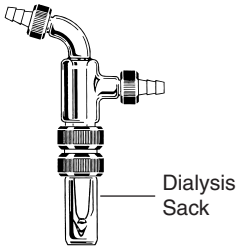
Filter

Filter Support

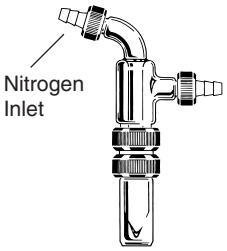
Sample in Lower Tube

1) Reflux in Air Condenser
2) Freeze Dry - Direct Connection to 1/2" ID Hose

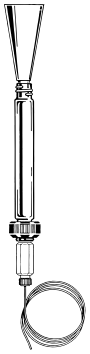
- Derivatization - wide area of application
- Centrifugation - strong, high "G" forces 30,000xG
- Sample Concentration - microliter
- Catalytic Hydrogenation
- Radiosynthesis
- Phase Extraction
- Prepare - React - Extract - Concentrate - Retrieve - and Store



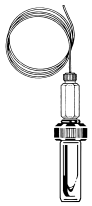
Negative Pressure Dialysis



Sample Concentration with Inlet Atmosphere



Chromatography Column with Reservoir

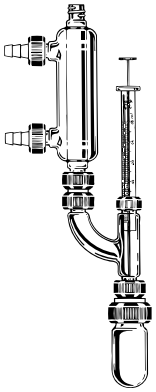


Gaseous Product Generator

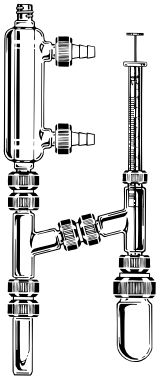
Typical Research/Microscale Applications – Quick . . . Easy-to-Assemble.



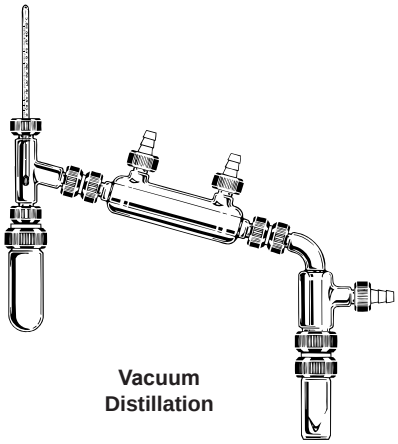
Molecular Distillation



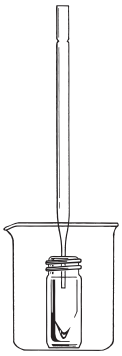
Reflux with Addition



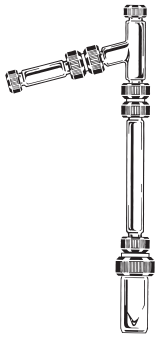
Reaction / Distillation with Liquid Addition



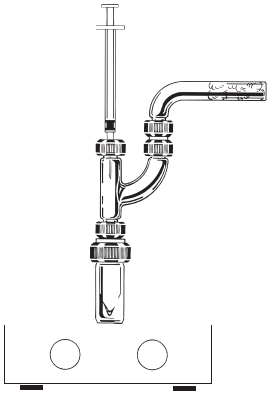
Vacuum Distillation



Chromatography
Pasteur Pipet



Reflux with
Drying Tube



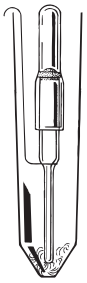
Reaction with Addition
Claisen Adapter Syringe
Drying Tube (moisture protection)



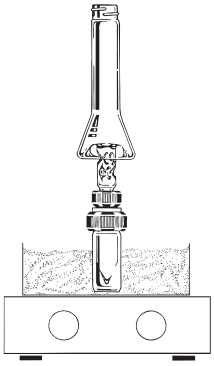
Vacuum Filtration with
Hirsch Funnel



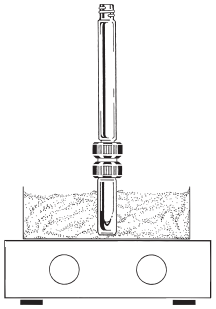
Gas Chromatography
GC Collection Tube
0.1 mL Micro Vial



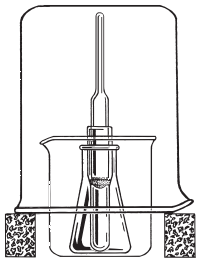
Crystallization
Using Centrifugation



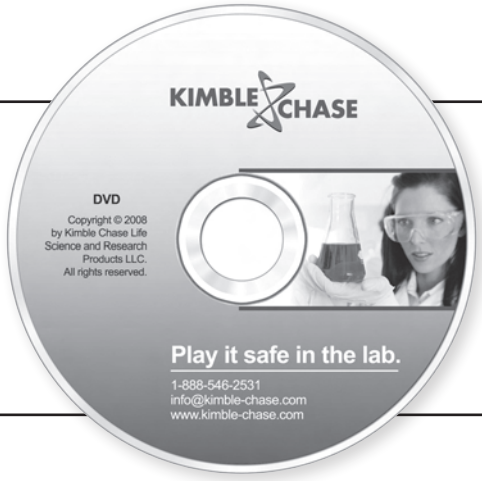
Distillation
Hickman Distillation Head



Reaction
Reflux with
Air Condenser



Crystallization
Craig Tube - Slow
Crystallization

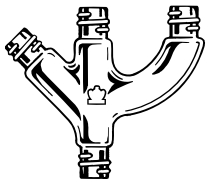


Safety Program - *Play it safe in the lab.*

Our Safety Program discusses the ten basic safety rules of handling glassware as well as the technical properties and physics of glass. Available as a DVD.

Kimble Article No.	Format	Case Qty.	Case Price
99991D-99	DVD	1	23.99

See more safety products in the *SAFETYWARE* section.



747110

Claisen Adapter, Threaded

Converts single neck flasks or vials to three neck vessels for Grignard reactions, etc. Allows easy, vacuum tight connections of syringes for liquid addition, thermometers or gas inlet tubes.

Kontes Article No.	GPI Thread Size	Approx. Overall Height (mm)	Case Qty.	Case Price
747110-0000	13-425	50	1	20.16



747125

Connecting Adapter, Threaded

$ inner ground joint to GPI thread. Allows interfacing of $ outer ground jointed glassware with threaded microscale components.

Kontes Article No.	GPI Thread Size	$ Joint	Approx. Overall Height (mm)	Case Qty.	Case Price
747125-1314	13-425	14/20	50	1	19.71
747125-1319	13-425	19/22	50	1	19.71
747125-1324	13-425	24/40	70	1	19.71
747125-2014	20-400	14/20	50	1	19.71
747125-2019	20-400	19/22	50	1	20.75
747125-2024	20-400	24/40	70	1	20.75

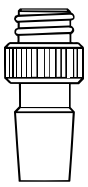


747130

Connecting Adapter, Threaded

$ outer ground joint to GPI thread. Allows interfacing of $ inner ground jointed glassware with threaded microscale components.

Kontes Article No.	GPI Thread Size	$ Joint	Approx. Overall Height (mm)	Case Qty.	Case Price
747130-1314	13-425	14/20	50	1	19.71
747130-1319	13-425	19/22	50	1	19.71
747130-1324	13-425	24/40	70	1	20.75
747130-2014	20-400	14/20	50	1	19.71
747130-2019	20-400	19/22	50	1	19.71
747130-2024	20-400	24/40	70	1	20.75

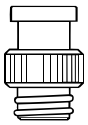


747128

PTFE Connecting Adapter, Threaded

$ inner joint to GPI thread. Provides a shorter travel path than the 747125 glass equivalent.

Kontes Article No.	GPI Thread Size	$ Joint	Approx. Overall Height (mm)	Case Qty.	Case Price
747128-2014	20-400	14/20	50	1	23.09
747128-2019	20-400	19/22	55	1	25.20
747128-2024	20-400	24/40	70	1	36.11



747133

PTFE Connecting Adapter, Threaded

$ outer joint to GPI thread. Provides a shorter travel path than the 747130 glass equivalent.

Kontes Article No.	GPI Thread Size	$ Joint	Approx. Overall Height (mm)	Case Qty.	Case Price
747133-2014	20-400	14/20	35	1	24.66
747133-2019	20-400	19/22	40	1	25.69
747133-2024	20-400	24/40	60	1	33.41

Compression Cap, O-Ring, Connectors

Compression cap and connectors are glass-filled nylon for use to 200°C. Connectors have PTFE seals.

Kontes Number	Description	GPI Thread Size	Case Qty.	Case. Price
410119-1307	Compression Cap	13-425	12	16.01
758252-0107	Cap O-ring, FKM, Size 107	–	10	17.99
410119-2015	Compression Cap	20-400	12	16.93
758252-0111	Cap O-ring, FKM, Size 111	–	10	20.37
747205-1313	Connector	13-425 to 13-425	1	12.27
747205-1320	Connector	13-425 to 20-400	1	13.18
747205-2024	Connector	20-400 to 24-400	1	13.76


410119


747205-1313


747205-1320

Connector, Hose with 1/4”-28

Unique design adapts GPI threaded glass to a serrated PTFE hose connection or 1/4”-28 tubing connections.

Kontes Article No.	GPI Thread Size	Internal Thread Size	Hose Connector Fits Hose I.D.	Case Qty.	Case Price
747185-0013	13-425	1/4”-28	1/4”	1	11.35
747185-0020	20-400	1/4”-28	1/4”	1	11.35


747185

Distillation Head, Hickman, Threaded

Ideally suited for micro distillations, especially for separations of high boiling samples. Flask is an integral component.

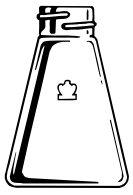
Kontes Article No.	Alembic Capacity (mL)	Flask Vol. (mL)	GPI Thread Size	Approx. Overall Height (mm)	Case Qty.	Case Price
747360-0000	1	5	13-425	80	1	46.97


747360

Erlenmeyer Flask, MICROFLEX®, Threaded

Erlenmeyer flask without graduations. See 410116 for accessory cap and 774161 for septum.

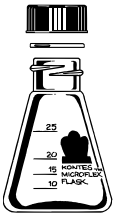
Kontes Article No.	Capacity(ml)	GPI Thread	Approx. Overall Height (mm)	Case Qty.	Case Price
747530-0520	5	20-400	32	1	10.57
747530-1020	10	20-400	45	1	10.57
747530-1520	15	20-400	48	1	12.27
747530-2520	25	20-400	60	1	12.27


747530

Erlenmeyer Flask, MICROFLEX®, Screw Cap

Graduated flask useful for sample collection, derivatization reactions, extractions, sample storage, micro mixing, etc. Supplied complete with an open top phenolic cap and a PTFE-lined silicone septum. See 410116 for replacement cap and 774161 for septum.

Kontes Article No.	Capacity (ml)	Graduations x Subdiv.(ml)	GPI Thread	Case Qty.	Case Price
749400-0025	25	10-25 x 5	20-400	12	127.88



749400



747550

Kjeldahl-Shaped Flask, Threaded

A conventional round bottom shape with a tapered upper portion for easy recovery of reaction products.

Kontes Article No.	Capacity (mL)	GPI Thread Size	Case Qty.	Case Price
747550-1020	10	20-400	1	16.84
747550-2520	25	20-400	1	21.66

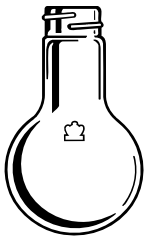


747540

Pear-Shaped Flask, Threaded

Short neck flask for easy retrieval of residues or reaction products.

Kontes Article No.	Capacity (mL)	GPI Thread Size	Approx. Overall Height x Dia. (mm)	Case Qty.	Case Price
747540-0520	5	20-400	50 x 25	1	9.67
747540-1020	10	20-400	55 x 28	1	10.57
747540-1520	15	20-400	55 x 30	1	11.35
747540-2520	25	20-400	80 x 39	1	14.88



747520

Boiling Flask, Round Bottom, Long Neck, Threaded

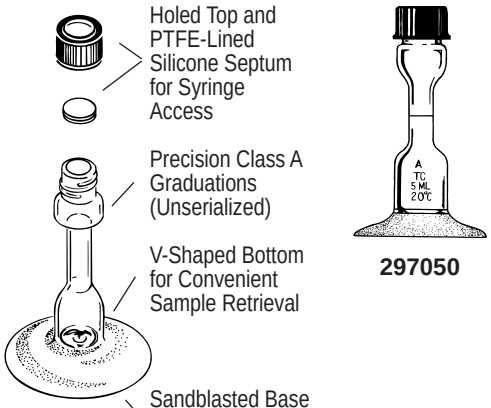
Kontes Article No.	Capacity (mL)	GPI Thread Size	Approx. Overall Height x Dia. (mm)	Case Qty.	Case Price
747520-1020	10	20-400	60 x 31	1	10.57
747520-2520	25	20-400	65 x 42	1	12.65



747510

Boiling Flask, Round Bottom, Short Neck, Threaded

Kontes Article No.	Capacity (mL)	GPI Thread Size	Approx. Overall Height x Dia. (mm)	Case Qty.	Case Price
747510-0520	5	20-400	40 x 27	1	10.57
747510-1020	10	20-400	45 x 32	1	10.57
747510-1520	15	20-400	50 x 35	1	10.57
747510-2520	25	20-400	55 x 41	1	13.10

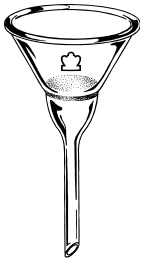


297050

Volumetric Flask, Micro, Class A

Class A threaded flask has an open top phenolic cap and a PTFE-lined silicone septum for syringe access. Calibrated to contain. V-shaped bottom provides convenient sample retrieval.

Kontes Article No.	Capacity (mL)	GPI Thread Size	Approx. Overall Height (mm)	Case Qty.	Case Price
297050-0001	1	13-425	73	1	23.96
297050-0002	2	13-425	73	1	25.61
297050-0003	3	13-425	73	1	26.52
297050-0005	5	13-425	73	1	28.53
297050-0010	10	13-425	73	1	30.47



955250

Filter Funnel, Fritted Hirsch

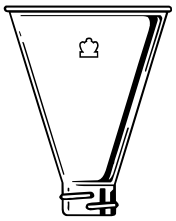
Conical funnel shape directs filtrate through a reduced area frit to concentrate crystal residue for rewashing. Available in three porosities: Fine (F), Medium (M) and Coarse (C).

Kontes Article No.	Top Dia. (mm)	Disc Dia. (mm)	Porosity	Stem Length x O.D. (mm)	Approx. Overall Height (mm)	Case Qty.	Case Price
955250-3523	40	10	C	145 x 6	180	1	23.49
955250-5026	50	20	F	70 x 8	115	1	51.64
955250-7526	75	30	F	75 x 8	145	1	71.61
955250-5044	50	20	M	70 x 8	115	1	50.84
955250-7544	75	30	M	75 x 8	145	1	71.61
955250-5023	50	20	C	70 x 8	115	1	48.87
955250-7523	75	30	C	75 x 8	145	1	71.61

Powder Funnel

Useful for the addition of reactants to a variety of flasks.

Kontes Article No.	GPI Thread Size	Approx. Overall Height x Width (mm)	Case Qty.	Case Price
747575-0020	20-400	60 x 53	1	29.23

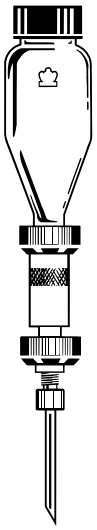


747575

Separatory Funnel

Designed with a unique vertical style valve for microscale separations. Funnel is glass with a PTFE-lined, open top screw cap. Valve utilizes a size 008 FFKM o-ring, and has a 1/4"-28 threaded drip tip. Lower drip tip can be detached and the entire unit centrifuged within a standard 50 mL shield.

Kontes Article No.	Capacity (mL)	Approx. Overall Height (mm)	Case Qty.	Case Price
747580-0015	15	155	1	138.34
Component Parts				
747581-0015	Funnel Only, Upper 20-400, Lower 13-425, 15 mL		1	23.63
747582-0013	Valve, 13-425		1	89.52
747583-0000	Drip Tip		1	5.49



747580

Weighing / Transfer Funnel

Designed for use with micro volumetric flasks. Ideal for the easy transfer of liquids or powders. Flat bottom allows weighing.

Kontes Article No.	GPI Thread Size	Approx. Overall Height x Width (mm)	Case Qty.	Case Price
747585-0013	13-425	13 x 45	1	17.60
747585-0020	20-400	22 x 50	1	20.23

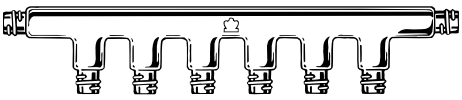


747585

Vacuum Manifold, 6-Place, Microscale, Threaded (GPI 13-425)

Designed for the concentration of multiple samples using an inert atmosphere or vacuum. Also useful for molecular distillation. Unused ports are easily closed off with caps.

Kontes Article No.	GPI Thread Size	Approx. Overall Height x Width (mm)	Case Qty.	Case Price
747650-0006	13-425	40 x 200	1	129.52
Accessories				
747185-0013	Hose Connector, PTFE, 13-425 to 1/4"-28		1	11.35
410121-1325	Cap, 13-425, Pkg./48		48	33.62
747205-1313	Connector, 13-425 to 13-425		1	12.27
747205-1320	Connector, 13-425 to 20-400		1	13.18



747650

Threaded Connecting Tube

Connecting tube with a 1-1.5 mm I.D. capillary.

Kontes Article No.	Thread Size	Approx. Tube O.D. (mm)	Approx. Overall Length (mm)	Case Qty.	Case Price
747630-0000	1/4"-28	7	150	1	97.55



747630

Choose Kontes Brand NMR Tubes



Kontes Brand NMR Tubes

Kontes has provided superior quality products for the nuclear magnetic resonance spectroscopy market since 1968. Our NMR tubes are manufactured from KIMAX® ASTM Type I borosilicate glasses and their performance is assured by state of the art manufacturing and inspection processes for wall thickness, concentricity, and camber.

Types of Tubing

KG-33 is a KIMAX® ASTM Type I, Class A borosilicate glass with a high degree of thermal shock resistance and low coefficient of expansion. This is particularly suitable for use where large temperature variations are applied. KG-33 is ideal for use in various sealing techniques.

N-51A is a KIMAX® ASTM Type I, Class B borosilicate glass which also has a comparatively low coefficient of expansion, but is not suitable for sealing techniques.

NMR Tube Specifications

Wall thickness is closely monitored to assure that our customers consistently get reproducible results. If the I.D. is too large, vortex plugs and coaxial inserts can slip; if the I. D. is too small the plug could break the tube. If the O.D. is too small, the tube will wobble causing modulation sidebands; if too large the inside surface of the probe insert may be contacted causing damage.

Concentricity is the measure of wall uniformity and is determined with gauges. Recorded as Total Indicator Reading (T.I.R. or the absolute variation in wall thickness) as measured at the ends of a tube during rotation, lower readings yield better tubes. Nonconformity to concentricity tolerances causes portions of the sample to be exposed to differences in the magnetic field leading to undesirable modulation sidebands.

Camber is the measure of straightness of a tube and is determined with gauges by measuring the deflection at the middle of a rotating tube held at the ends. Recorded as Total Indicator Reading (T.I.R. or the absolute value of the deflection range), tubes with deviations <0.002” (0.051mm) in camber can be expected to spin reliably. Higher frequency NMR spectrometers require stricter tolerances for the camber of tubes.

We guarantee our tubes to meet stated dimensional specifications and to produce accurate results according to the field strength of the NMR spectrometer.

“ Kontes Brand NMR Tubes are designed for repeated use in your high resolution NMR spectroscopy. ”

Highest Quality 5mm Tubes, KG-33 Borosilicate Glass

Each and every precision 5mm NMR tube is 100% gauged to meet the most exacting standards. These tubes are ideal for sealing directly to vacuum manifolds, joints or valves. Caps attached.

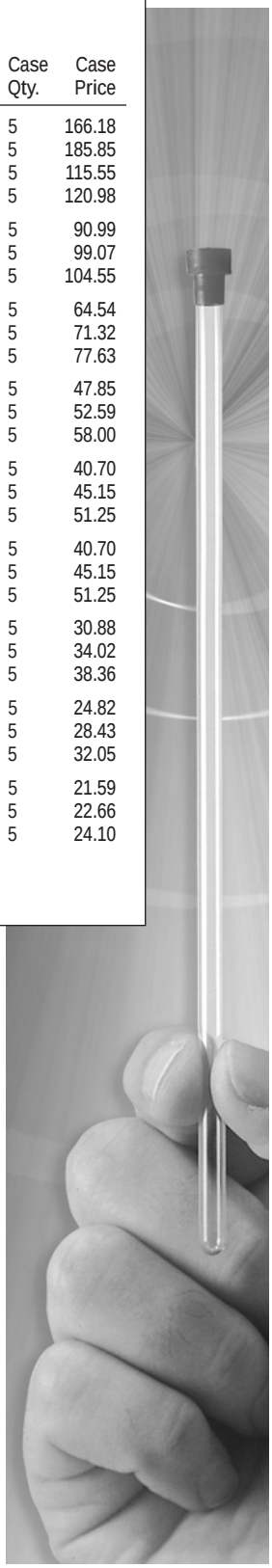
5mm TUBES

Kontes Article No.	Wilmad Equivalent	Approx. MHz	Length, Inches	— Wall Thickness — Inches	mm	— Concentricity — T.I.R. Inches	T.I.R. Microns	— Camber — T.I.R. Inches	T.I.R. Microns	Case Qty.	Case Price
897250-3000	542-PP-7	900	7	0.01475	0.38	0.0002	5	0.00015	3.8	5	166.18
897250-3008	542-PP-8		8	0.01475	0.38	0.0002	5	0.00015	3.8	5	185.85
897245-3000	541-PP-7	800	7	0.01475	0.38	0.0002	5	0.00015	3.8	5	115.55
897245-3008	541-PP-8		8	0.01475	0.38	0.0002	5	0.00015	3.8	5	120.98
897241-0000	535-PP-7	600-700	7	0.01475	0.38	0.0005	13	0.00025	6	5	90.99
897241-0008	535-PP-8		8	0.01475	0.38	0.0005	13	0.00035	9	5	99.07
897241-0009	535-PP-9		9	0.01475	0.38	0.0005	13	0.00045	11	5	104.55
897240-0000	528-PP-7	500	7	0.01475	0.38	0.0005	13	0.00025	6	5	64.54
897240-0008	528-PP-8		8	0.01475	0.38	0.0005	13	0.00035	9	5	71.32
897240-0009	528-PP-9		9	0.01475	0.38	0.0005	13	0.00045	11	5	77.63
897235-0000	527-PP-7	400	7	0.01475	0.38	0.001	25	0.0005	13	5	47.85
897235-0008	527-PP-8		8	0.01475	0.38	0.001	25	0.0006	15	5	52.59
897235-0009	527-PP-9		9	0.01475	0.38	0.001	25	0.0007	18	5	58.00
897230-0000	526-PP-7	300	7	0.01475	0.38	0.0015	38	0.001	25	5	40.70
897230-0008	526-PP-8		8	0.01475	0.38	0.0015	38	0.0011	28	5	45.15
897230-0009	526-PP-9		9	0.01475	0.38	0.0015	38	0.0012	30	5	51.25
897225-0000	507-PP-7	200	7	0.01475	0.38	0.002	51	0.0005	13	5	40.70
897225-0008	507-PP-8		8	0.01475	0.38	0.002	51	0.0006	15	5	45.15
897225-0009	507-PP-9		9	0.01475	0.38	0.002	51	0.0007	18	5	51.25
897220-0000	—	150	7	0.01475	0.38	0.002	51	0.001	25	5	30.88
897220-0008	—		8	0.01475	0.38	0.002	51	0.0011	28	5	34.02
897220-0009	—		9	0.01475	0.38	0.002	51	0.0012	30	5	38.36
897205-0000	506-PP-7	100	7	0.01475	0.38	0.0025	64	0.002	51	5	24.82
897205-0008	506-PP-8		8	0.01475	0.38	0.0025	64	0.002	51	5	28.43
897205-0009	506-PP-9		9	0.01475	0.38	0.0025	64	0.002	51	5	32.05
897200-0000	505-PP-7	100	7	0.01475	0.38	0.003	76	0.002	51	5	21.59
897200-0008	505-PP-8		8	0.01475	0.38	0.003	76	0.002	51	5	22.66
897200-0009	505-PP-9		9	0.01475	0.38	0.003	76	0.002	51	5	24.10

O.D., inches — 0.1955 (+0.0000 / -0.0005) O.D., mm — 4.97 (+0.000 / -0.013)
I.D. , inches — 0.1655 (+0.0005 / -0.0000) I.D., mm — 4.20 (+0.013 / -0.0000)

Our precise, consistent tolerances give you the kind of accuracy you need.

Our prices provide outstanding value.



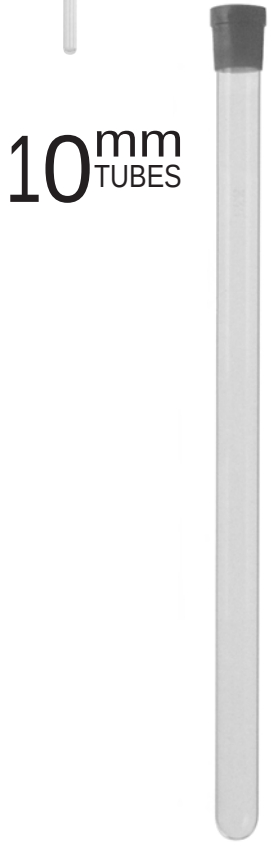
Highest Quality 3mm and 10mm NMR Tubes



Highest Quality 3mm Tubes, KG-33 Borosilicate Glass, Caps Attached

Kontes Article No.	Wilmad Equivalent	Approx. Mhz	Length Inches	Wall Thickness (in.)	Concentricity T.I.R.*	Camber T.I.R.*	Case Qty.	Case Price
897840-0000	335-PP-7	600-800	7	0.01118	0.0005	0.00025	5	80.23
897840-0008	335-PP-8		8	0.01118	0.0005	0.00035	5	89.23
897835-0000	328-PP-7	500	7	0.01118	0.0010	0.0005	5	69.31
897835-0008	328-PP-8		8	0.01118	0.0010	0.0006	5	76.74
897830-0000	327-PP-7	400	7	0.01118	0.0015	0.0010	5	62.36
897830-0008	327-PP-8		8	0.01118	0.0015	0.0011	5	69.31
897825-0000	-	300	7	0.01118	0.0020	0.0005	5	62.36
897825-0008	-		8	0.01118	0.0020	0.0006	5	69.31
897820-0000	307-PP-7	300	7	0.01118	0.0020	0.0010	5	58.02
897820-0008	307-PP-8		8	0.01118	0.0020	0.0011	5	62.36
897805-0000	-	100	7	0.01118	0.0025	0.0020	5	58.02
897805-0008	-		8	0.01118	0.0025	0.0020	5	58.47
897800-0000	305-PS-7	80	7	0.01118	0.0030	0.002	5	56.55
897800-0008	305-PS-8		8	0.01118	0.0030	0.002	5	57.77

O.D. inches— 0.1186" (+0.0000/-0.0005) **I.D. inches**— 0.0945" (+0.0005/-0.0000)
*T.I.R. = Total Indicator Reading in inches



Highest Quality 10mm Tubes, KG-33 Borosilicate Glass, Caps Attached

Kontes Article No.	Wilmad Equivalent	Approx. Mhz	Length Inches	Wall Thickness (in.)	Concentricity T.I.R.*	Camber T.I.R.*	Case Qty.	Case Price
897335-0000	513-7PP-7	360	7	0.0182	0.0015	0.0005	1	31.37
897335-0008	-	360	8	0.0182	0.0015	0.0005	1	34.04
897330-0000	513-5PP-7	150	7	0.0182	0.0020	0.0010	1	26.67
897330-0008	-	150	8	0.0182	0.0020	0.0010	1	29.96
897325-0000	513-3PP-7	80	7	0.0182	0.0030	0.0015	1	23.06
897325-0008	-	80	8	0.0182	0.0030	0.0015	1	25.87
897320-0000	513-1PP-7	60	7	0.0182	0.0090	0.0020	1	15.98
897320-0008	-	60	8	0.0182	0.0090	0.0020	1	20.43

O.D. INCHES - 0.3937 (+0.0000/-0.0005) I.D. INCHES - 0.3569 (+0.0005/-0.0000)
**T.I.R. = TOTAL INDICATOR READING IN INCHES.



5mm TUBES

THRIFT & DISPOSABLE GRADE

Thrift 5mm Tubes, N-51A Borosilicate Glass, Caps Attached

Kontes thrift tubes are manufactured from **KIMAX® N-51A borosilicate glass** and their performance is assured by state of the art manufacturing and inspection processes for camber and concentricity. Caps attached.

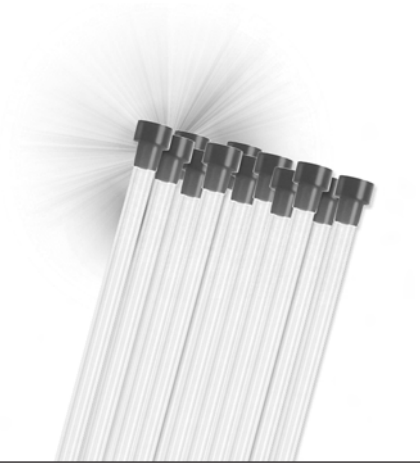
Kontes Article No.	Wilmad Equivalent	Approx. MHz	Length, Inches	— Wall Thickness — Inches	mm	— Concentricity — T.I.R. Inches	T.I.R. Microns	— Camber — T.I.R. Inches	T.I.R. Microns	Case Qty.	Case Price
897150-0007	1235-7	500	7	0.01475	0.38	0.0005	13	0.00025	6	5	29.62
897150-0008	1235-8	500	8	0.01475	0.38	0.0005	13	0.00035	9	5	35.85
897140-0007	1228-7	400	7	0.01475	0.38	0.0005	13	0.00025	6	5	21.02
897140-0008	1228-8	400	8	0.01475	0.38	0.0005	13	0.00035	9	5	26.63
897130-0007	1226-7	300	7	0.01475	0.38	0.0015	38	0.001	25	5	18.39
897130-0008	1226-8	300	8	0.01475	0.38	0.0015	38	0.0011	28	5	23.07
897120-0007	1208-7	200	7	0.01475	0.38	0.002	51	0.0005	13	5	14.02
897120-0008	1208-8	200	8	0.01475	0.38	0.002	51	0.0006	15	5	16.84
897110-0007	1206-7	>200	7	0.01475	0.38	0.002	51	0.001	25	5	12.79
897110-0008	1206-8	>200	8	0.01475	0.38	0.002	51	0.0011	28	5	14.97



Disposable Grade 5mm Tubes, N-51A Borosilicate Glass

Disposable grade NMR tubes. Each tube is supplied without sandblasted marking spot in a bundled multi-pack. Caps included but not attached.

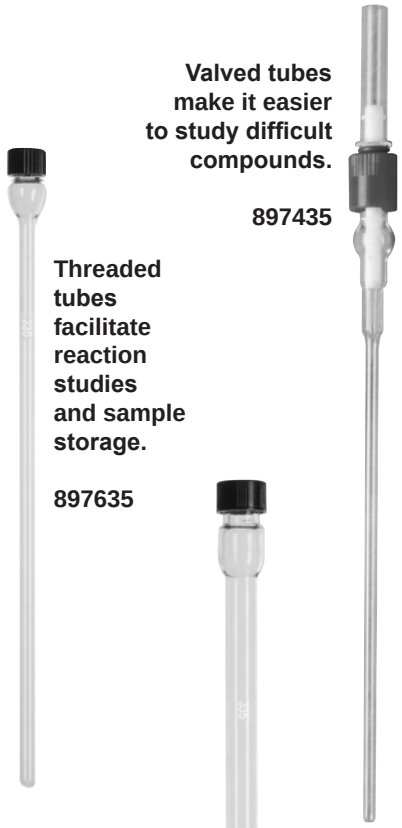
Kontes Article No.	Wilmad Equivalent	Approx. MHz	Length, Inches	Wall Thickness (in.)	Case Qty.	Case Price
897193-0000	512-7	100	7	0.015	25	67.09
897193-0008	512-8	100	8	0.015	25	72.93
897193-0050	512-7	100	7	0.015	50	64.21
897193-7100	512-7	100	7	0.015	100	119.09
897193-8050	512-8	100	8	0.015	50	68.27
897193-8100	512-8	100	8	0.015	100	125.32



Multi-pack tubes are available in any quantity that works for you.

*Call **888-546-2531** for more information.*

Specialty NMR Tubes



Valved tubes make it easier to study difficult compounds.

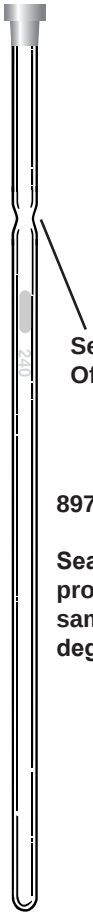
897435

Threaded tubes facilitate reaction studies and sample storage.

897635



897735



Seal Off

897750

Seal-off tubes protect against sample degradation.

Valved 5mm Tubes

KONTES Brand valved NMR tubes are designed to improve sample handling during the investigation of volatile, air-sensitive or toxic compounds. Condensation of sample occurs directly into the NMR tube through the use of vacuum techniques. A special KONTES HI-VAC® valve maximizes sample recovery and permits resealing as opposed to the permanent "seal-off" method.

The HI-VAC valve features a borosilicate glass body and PTFE plug so that the sample is in contact with inert materials. The valve is greaseless thereby eliminating the risk of sample contamination. The rotationally symmetrical design, with two lateral ports located near the valve seat, permits use at higher temperatures. A glass tube with a FKM o-ring seal is used to connect the valved NMR tube to a vacuum system.

All sizes are precision grade and suitable for use in instruments with field strengths greater than 360 MHz.

Kontes Article No.	Wilmad Equivalent	Tube Diam. (mm)	Length Inches	Wall Thickness (in.)	Concentricity T.I.R.*	Camber T.I.R.*	Case Qty.	Case Price
897435-0000	528-JY-7	5	7	0.01475	0.0010	0.0005	1	103.95
897435-0008	528-JY-8	5	8	0.01475	0.0010	0.0006	1	106.61

Threaded 5 and 10mm Tubes with Caps and Septa

Ideal for use with air-sensitive samples and reaction studies where compounds may be added via syringe through the septum cap. For use in instruments with field strengths greater than 360 MHz. Borosilicate glass.

Kontes Article No.	Wilmad Equivalent	Description	Tube O.D.(mm)	Approx. Overall Length Inches	Case Qty.	Case Price
897635-0800	528-TR-7	NMR Tube, 8-425 Thread	5	7.5	1	26.95
897735-1300	513-TRa-7	NMR Tube, 13-425 Thread	10	8	1	42.50

Seal Off NMR Tubes, 5 mm

KONTES Seal-Off NMR tubes provide the best security against sample degradation during the investigation of volatile, air-sensitive or toxic compounds.

Manufactured from ASTM, Type 1, Class A, borosilicate glass. Overall length is 9". Construction opening 0.5 to 2.0 mm and is located 1.8" from the cap end of the tube leaving a 7.2" long tube after seal-off.

Each tube is supplied with a polyethylene cap and features a sand blasted marking spot for easy identification.

Kontes Article No.	Approx. MHz	Length, Inches	Wall Thickness (in.)	Wall Variation T.I.R.	Camber	Case Qty.	Case Price
897750-0245	>800	7.2	0.01475	0.0002	0.00015	5	191.67
897750-0240	>400	7.2	0.01475	0.0005	0.00025	5	122.22
897750-0235	>360	7.2	0.01475	0.0010	0.0005	5	94.43

*T.I.R. = TOTAL INDICATOR READING IN INCHES.

NMR Sealing Manifold

Now there is an easy way to evacuate and tip-off NMR tubes without additional sealing to other glass apparatus. NMR single and double port sealing manifolds have KONTES HI-VAC® valves for individually controlling each port. The double port manifold permits sealing one tube while the other remains under vacuum.

The NMR manifolds feature a BEVEL-SEAL™ threaded connection and a specially designed cap with an aluminum shield for heat deflection. Insert the NMR tube through the open top cap, place the o-ring over the open end of the tube, insert the tube into the BEVEL-SEAL thread, and tighten the cap onto the thread to make a vacuum seal.

The longer 5mm NMR tubes, 8 and 9 inch, are recommended for use with manifolds. A #2 hose connection is used for attaching the vacuum line (vacuum tubing is recommended). All o-rings supplied are FKM. Valve plugs are 826501-0008.



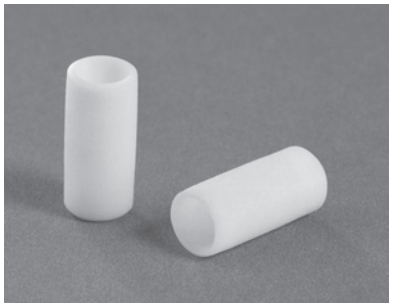
Sealing manifolds provide easy, fast and economical ways to evacuate and seal NMR tubes.

897047-0001

Kontes Article No.	Description	O-Ring Size Shaft - Tip	Case Qty.	Case Price
897047-0001	NMR Manifold Complete	110 - 011	1	103.50
Component Parts				
897048-0001	NMR Manifold Only, Single	110 - 011	1	79.06
897049-0005	Cap, Shielded No. 5 Thread, Size 106 O-Ring		1	29.90

Sample Tube Pressure Caps, PTFE, for 3 and 5 mm Tubes

NMR Tube caps for use with any KONTES 5 mm standard or Medallion series NMR tube. These PTFE caps are precision machined and offer the user a means of universal solvent compatibility. The caps are sold in packages of 25.

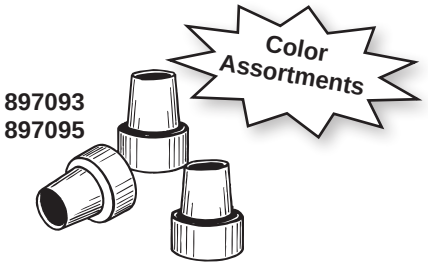


897096

Kontes Article No.	Fits Tube Size (mm)	Color	Case Qty.	Case Price
897096-0003	3	White	25	75.48
897096-0005	5	White	25	104.95

Sample Tube Pressure Caps, Polyethylene, Assorted Colors, for 3, 5 and 10 mm Tubes

A tight-fitting, polyethylene cap which stays in place even with a build-up of internal vaporization pressures.



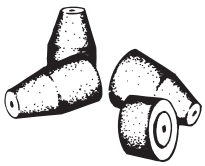
897093
897095

Kontes Article No.	Wilmad Equivalent	Fits Tube Size (mm)	Color	Case Qty.	Case Price
897093-0001	-	3	Red	100	8.05
897095-0001	521	5	Red	100	8.77
897095-0021	521	5	Black	100	8.77
897095-0061	521	5	White	100	8.77
897095-0071	521	5	Green	100	8.77
897095-0081	521	5	Yellow	100	8.77
897095-1001	521-C	10	Red	100	13.80
897095-1021	-	10	Black	100	13.80
897095-1071	521-C	10	Green	100	13.80
897095-1081	521-C	10	Yellow	100	13.80

Kontes Article No.	Wilmad Equivalent	Fits Tube Size (mm)	Color	Case Qty.	Case Price
897095-0011	-	5	assorted (20 each of red, black, white, green and yellow)	100	8.77
897095-1011	-	10	assorted (25 each of red, black, green and yellow)	100	13.80
897095-0012	-	5	assorted (100 each of red, black, white, green, blue and yellow)	600	33.60

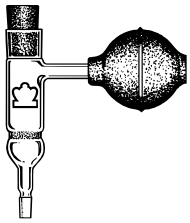
Sample Tube Septum, for 5 mm Tubes

Useful as a closure or for sample outgassing. Soft, natural rubber allows easy penetration with a syringe needle.

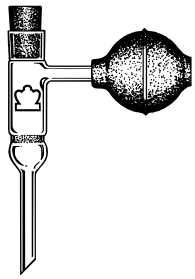


897097

Kontes Article No.	Wilmad Equivalent	Fits Tube Size (mm)	Case Qty.	Case Price
897097-0001	521-S	5	100	23.81



897050-0022



897050-0021

Sample Filter

Pressure-type filter for removal of particulate matter in samples prior to analysis. Upper part is fitted with a #00 stopper. Sample is pipetted into the filter. A rubber bulb, with a valve, provides pressure to force the sample through the fine porosity filter. Bottom has a plain drip tip.

Kontes Article No.	Style	Wilmad Equivalent	Tip Configuration	Case Qty.	Case Price
897050-0021	21	807	Plain Drip Tip	1	43.72
897050-0022	22	808	Inner Luer Tip	1	57.07

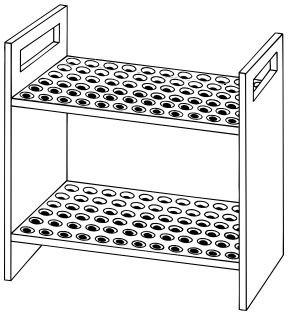


420160
(Supplied Unassembled)

Funnel, Polypropylene

Polypropylene construction with a lower fitting sized to accommodate 5 mm NMR tubes. Disposable feature eliminates the possibility of cross contamination. Filter is a polyethylene disc or glass wool. Complete set consists of a reservoir, a column and a lower fitting.

Kontes Article No.	Description		Case Qty.	Case Price
420160-0000	Funnel Set (Unassembled)		100	108.12
Replacement Parts				
420164-1000	Reservoir Only		50	26.52
420168-1000	Lower Fitting Only		50	20.03
Accessories				
420162-0000	Polyethylene Disc	30-50 Microns	100	31.43
420162-0020	Polyethylene Disc	20 Microns	100	31.43



897080



897085

Pipet, Extended Tip

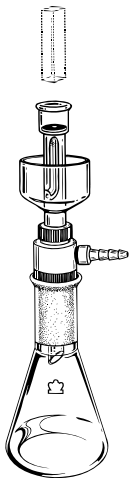
Extended tip NMR pipets for retrieving and adding sample in the NMR tube. Available in 7 and 9 inch tips for 7 and 9 inch NMR tubes, respectively.

Kontes Article No.	Wilmad Equivalent	Description	Case Qty.	Case Price
897085-0007	803	7" tip	100	63.10
897085-0009	803A	9" tip	100	64.84

Sample Tube Rack, Polypropylene

Polypropylene rack with carrying handles features an upper deck with holes and a lower deck support for tube ends. Dimensions: 8 3/8"L x 41/2"W x 83/4"H.

Kontes Article No.	Wilmad Equivalent	Accommodates	Case Qty.	Case Price
897080-0005	820-A	72 - 3 or 5 mm tubes	1	33.20



459960

Utility Washer for Cuvette Cells and NMR Tubes

Recommended for 10 mm NMR tubes. For rapid, safe washing and drying of cuvettes, cells, tubes and small scale volumetric items up to approximately 22 mm O.D. Operates efficiently on a conventional sink aspirator. Flushing is activated by lightly pressing the inverted cell onto a neoprene gasket. Complete unit is supplied with one gasket. Hose connection is #2.

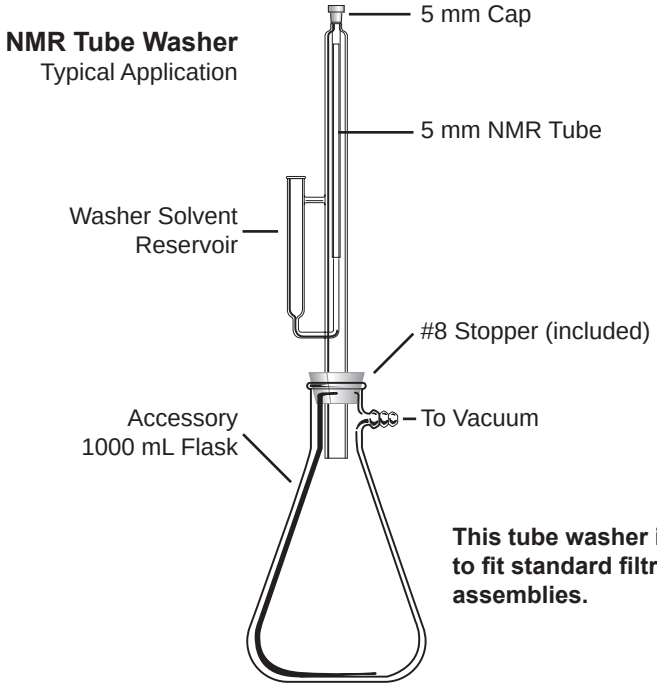
Kontes Article No.	Adapter Ⓢ Joint	Flask Ⓢ Joint	Flask Cap.(mL)	Approx. Overall Height (mm)	Case Qty.	Case Price
459960-0000	24/25	24/40	250	255	1	190.50

Article No.	Description	Case Qty.	Case Price
459961-0000	Cuvette Washer Only	1	89.99
459951-0000	Neoprene Gasket, Pkg./12	12	33.49
179850-2224	Vacuum Adapter, Size 22, Ⓢ 24/25	1	74.06
617000-0424	Erlenmeyer Flask, Ⓢ 24/40, 250 mL	1	24.15

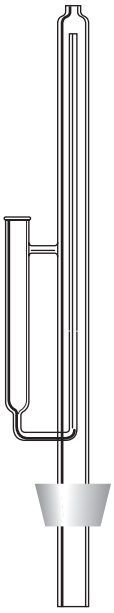
Washer for 5 mm NMR Tubes

Designed to fit standard filtration assemblies available in most labs. The cap is positioned on the 5 mm NMR tube bottom and inserted into the washer. Aspirator suction provides the motivating force to direct solvent stream into the 5 mm NMR tube. An air stream aids the drying process after solvent reservoir empties. Supplied with one #8 silicone stopper.

Kontes Article No.	Description	Case Qty.	Case Price
897030-0005	5 mm NMR Tube Washer	1	79.06
Replacement Parts			
953763-0000	#8 Silicone Stopper, Pkg./ 5	5	82.09
Accessories			
953760-0000	1000 mL Filter Flask	1	50.73



This tube washer is designed to fit standard filtration assemblies.



897030

Tube Washer, 5-Place for 3 mm and 5 mm Tubes, Accommodates 7” and 8” Tubes

This design uses flexible PTFE tubing to direct a power wash stream of wash solvent to clean the inside of NMR tubes. A vacuum source (user supplied) is required. An o-ring is slipped over each tube to form a vacuum tight seal and is removed after washing. The complete unit is provided with a one liter reservoir bottle and all wetted parts are PTFE or borosilicate glass. When all tubes are positioned for cleaning, the wash valve is configured to either wash or dry; this action may easily be repeated, and cleaned tubes can be quickly removed for use.

Kontes Article No.	Description	Case Qty.	Case Price
897033-0003	3 mm NMR Tube Washer	1	414.83
897033-0005	5 mm NMR Tube Washer	1	414.83



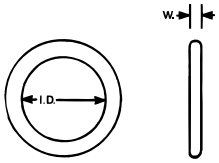
897033

Hose Connector Tubing Size Chart

Hose Connector Size	Fits Flexible Tubing I.D.
1	1/4”
2	3/8”
3	1/2”
4	3/4”

O-Ring Selection

O-rings used for general high vacuum service can be conditioned by agitated immersion in clean ethyl alcohol for several minutes with tumbled air drying. A solution of DC-705 silicone diffusion fluid (20% by volume in ethyl alcohol) is used for conditioning. Freshly cleaned o-rings are submerged, agitated, removed and tumbled dry. Oven drying at 115° C for 30 minutes will remove absorbed alcohol.



Buna-N

A copolymer of acrylonitrile and butadiene. Suitable for use with aromatic hydrocarbons, dilute acids and bases. Generally unsuitable for unsaturated halogen compounds, halogenated hyrocarbons (carbon tetrachloride, trichloroethylene) ketones (acetone), nitro compounds or strong acids. Temperature limits -50 to 120°C. Density: 1.23

Kontes Article No.	Size	ID (mm)	Width (mm)	Case Qty.	Case Price
758200-5374	5-374	234.32	5.33	1	10.84
758202-0032	032	47.35	1.77	5	11.63
758202-0114	114	15.46	2.62	10	11.63
758202-0212	212	21.94	3.53	5	9.66

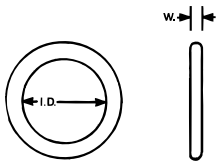
Ethylene Propylene, (Purple/Black)

A copolymer of ethylene and propylene, the E.P. o-rings have good weather, ozone and chemical resistance. They are recommended for use with dilute acids and alkalies, detergents, ketones, phosphate ester base fluids, alcohols, glycols, high pressure steam and silicone oils. They are not recommended for use with hydrocarbon solvents and oils, chlorinated hydrocarbons, petroleum oils and bi-ester base lubricants. The normal temperature service range is -50°C to 145°C. Density: 0.86.

Kontes Article No.	Size	I.D. (mm)	Width (mm)	Case Qty.	Case Price
758292-0011	11	7.65	1.78	10	35.18
758292-0012	12	9.25	1.78	10	35.72
758292-0013	13	10.82	1.78	10	37.69
758292-0017	17	17.17	1.78	10	40.23
758292-0109	109	7.59	2.62	10	37.44
758292-0110	110	9.19	2.62	10	37.58
758292-0111	111	10.77	2.62	10	37.82
758292-0112	112	12.37	2.62	10	38.10
758292-0116	116	18.72	2.62	10	40.23
758292-0120	120	25.07	2.62	10	45.64
758292-0122	122	28.37	2.62	10	46.83
758292-0124	124	31.42	2.62	10	47.87
758292-0223	223	40.87	3.53	5	32.39
758292-0226	226	50.39	3.53	5	34.39
758292-0229	229	59.92	3.53	5	34.92
758290-0349	349	113.67	5.55	1	23.81
758292-1025	1025	2.85	1.27	10	17.20

FFKM

The FFKM perfluoroelastomer is the most versatile of all the O-ring compounds. Like all fluorinated products, FFKM should not be exposed to molten or gaseous alkali metals, such as sodium or potassium. Under elevated temperature, service life may be reduced with exposure to some diamines, nitric acid and basic phenols. Unlike PTFE, the FFKM O-ring has properties of elasticity, recovery and no-creep or cold-flow that are neccessary for many sealing applications. Its dependable long term service makes FFKM the choice for avoiding costly seal failures, repairs and shut down time. FFKM is chemically resistant to polar solvents, organic solvents, inorganic and organicacids and bases, fuels, oils, lubricants, inorganic salts, aldehydes, metal halogen compounds, chlorine,caustic soda, aromatics, alcohols, steam, and strong oxidizing agents. The normal temperature service range is -40°C to 315°C and up to 343°C in intermittent service. Density: 2.02.



Kontes Article No.	Size	I.D. (mm)	Width (mm)	Case Qty.	Case Price
758240-0003	3	1.42	1.52	1	40.75
758240-0008	8	4.47	1.78	1	41.53
758240-0010	10	6.07	1.78	1	42.74
758240-0013	13	10.82	1.78	1	45.24
758240-0014	14	12.42	1.78	1	46.17
758240-0015	15	14	1.78	1	47.77
758240-0019	19	20.35	1.78	1	56.75
758240-0022	22	25.12	1.78	1	69.46
758240-0108	108	6.02	2.62	1	55.16
758240-0109	109	7.59	2.62	1	56.09
758240-0110	110	9.19	2.62	1	56.75
758240-0111	111	10.77	2.62	1	58.73
758240-0116	116	18.72	2.62	1	75.07
758240-0124	124	31.42	2.62	1	107.48
758240-0133	133	45.69	2.62	1	177.26
758240-0213	213	23.39	3.53	1	128.30
758240-0214	214	24.99	3.53	1	132.28
758240-0216	216	28.18	3.53	1	145.50
758240-0222	222	37.69	3.53	1	195.76
758240-5105	5-105	3.91	1.27	1	63.62

Silicone

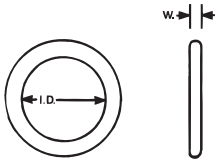
A silicone group of elastomeric materials made from silicone, oxygen, hydrogen and carbon. They have poor tensile strength, a high coefficient of friction and possess excellent resistance to temperature extremes with 232°C being the maximum temperature recommended for continuous use. Recommended for high aniline oils and chlorinated di-phenyls. Not recommended for most petroleum fluids, ketones, water and steam.

Kontes Article No.	Size	ID (mm)	Width (mm)	Case Qty.	Case Price
758210-0323	323	32.69	5.33	1	8.75

TFE / Propylene, (Black)

This O-ring copolymer is composed of tetrafluoroethylene/propylene and has excellent physical and mechanical properties. TFE/propylene o-rings are resistant to alcohols, acids, bases, oxidizing agents, oils, lubricants, and many solvents. They are not recommended for use with aromatics, non-polar solvents, ethers, ketones, freon, acetic acid and some chlorinated solvents. The temperature service range is -45°C to 204°C with some short term use to 316°C. Density: 1.68.

Kontes Article No.	Size	I.D. (mm)	Width (mm)	Case Qty.	Case Price
758260-0008	8	4.47	1.78	1	11.51
758260-0010	10	6.07	1.78	1	12.17
758260-0027	27	33.05	1.78	1	16.79
758260-0116	116	18.72	2.62	1	14.30
758260-0118	118	21.89	2.62	1	14.68
758260-0216	216	28.18	3.53	1	17.72
758260-0222	222	37.69	3.53	1	19.42



FKM, (Brown or Black)

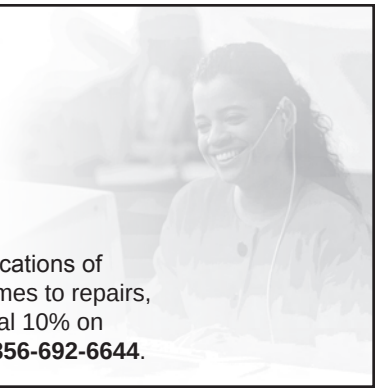
This fluoroelastomeric rubber is a copolymer of hexafluoropropylene and 1,1-difluoroethylene. FKM has excellent resistance to oils, fuels, lubricants, mineral acids, halogenated aromatic and aliphatic hydrocarbons such as carbon tetrachloride, toulene, benzene and xylene, non-polar compounds, oxidizingagents, and metalloid halides. FKM is not recommended for basic and oxygenated solvents such as ketones, ethers, esters, and ammonia or hot anhydrous hydrofluoric, acetic, and chlorosulfuric acids. The normal temperature service range is from -23°C to 204°C. FKM exhibits good mechanical, electrical, and weather resistant properties, as well as low gas permeability for use under extreme vacuum conditions. Density: 1.85.

Kontes Article No.	Size	I.D. (mm)	Width (mm)	Case Qty.	Case Price
758252-0004	4	1.78	1.78	10	13.23
758252-0006	6	2.9	1.78	10	13.63
758252-0008	8	4.47	1.78	10	14.30
758252-0009	9	5.28	1.78	10	14.96
758252-0010	10	6.07	1.78	10	15.21
758252-0011	11	7.65	1.78	10	15.61
758252-0012	12	9.25	1.78	10	16.14
758252-0013	13	10.82	1.78	10	16.94
758252-0014	14	12.42	1.78	10	17.19
758252-0015	15	14	1.78	10	18.27
758252-0014	18	18.77	1.78	10	17.19
758252-0020	20	21.95	1.78	10	23.82
758252-0034	34	53.7	1.78	5	33.72
758252-0105	105	3.63	2.62	10	17.07
758252-0107	107	5.23	2.62	10	17.99
758252-0108	108	6.02	2.62	10	18.55
758252-0109	109	7.59	2.62	10	19.04
758252-0110	110	9.19	2.62	10	19.04
758252-0111	111	10.77	2.62	10	20.37
758252-0112	112	12.37	2.62	10	21.42
758252-0114	114	15.46	2.62	10	24.48
758252-0116	116	18.72	2.62	10	25.39
758252-0118	118	21.89	2.62	10	25.12
758252-0120	120	25.07	2.62	10	34.39
758252-0140	140	56.82	2.62	10	65.74
758252-0207	207	13.87	3.53	5	16.42
758252-0208	208	15.60	3.53	5	16.66
758252-0212	212	22.23	3.53	5	19.71
758252-0214	214	24.99	3.53	5	22.22
758252-0223	223	40.87	3.53	5	36.77
758252-0226	226	50.39	3.53	5	46.96
758252-0229	229	59.92	3.53	5	47.87
758250-0349	349	113.67	5.55	1	28.96
758252-1025	5-102	2.45	0.97	10	17.19
758252-5105	5-105	3.91	1.27	10	14.42



- **Custom Fabrications**
- **Quality Repairs**
- **Modifications of All Kinds**
- **No Order Too Small**
- **Quick Turnaround**

KONTES
custom glass shop
*call toll-free **800-682-6644***
customglass@kimble-chase.com



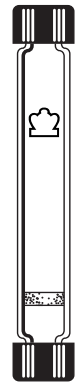
Contact the **Kontes Custom Glass Shop** at KIMBLE CHASE for modifications of standard products or fabrication of your unique designs. And when it comes to repairs, we can save you up to 75% of the cost of a new item. Save an additional 10% on repairs of Kontes or Kimble Brand products. Fax your requirements to **856-692-6644**.

Vessel

These solid phase peptide synthesis vessels feature 3 x 10 mm, coarse, sealed-in, glass frits for maximum performance and support of glass bead matrices. Frit for all sizes is sealed in approximately 15 mm from lower thread. All vessels are supplied with black phenolic PTFE/Rubber lined caps.

Coarse Porosity

Kontes Article No.	Approx. O.D. x Height (mm)	Upper Thread	Lower Thread	Case Qty.	Case Price
955170-0075	15 x 75	13-425	13-425	1	19.13
955170-0100	15 x 100	13-425	13-425	1	20.78
955170-0110	28 x 110	28-400	13-425	1	26.10
Replacement Caps					
410121-1325	Black Phenolic Cap, 13-425, pkg/48			48	33.62
410121-2800	Black Phenolic Cap, 28-400, pkg/12			12	19.98



955170

Vessel, with PTFE Plug

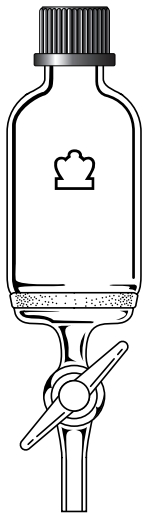
These solid phase peptide synthesis vessels have a sealed-in fritted glass resin support disc, GL thread and PTFE-lined PBT screw cap. The lower stopcock has a 2 mm bore plug.

Medium Porosity

Kontes Article No.	Cap. (mL)	Approx. Overall Height (mm)	GL Cap Size	Case Qty.	Case Price
955140-0025	25	165	25	1	136.09

Coarse Porosity

Kontes Article No.	Cap. (mL)	Approx. Overall Height (mm)	GL Cap Size	Case Qty.	Case Price
955141-0025	25	165	25	1	136.82



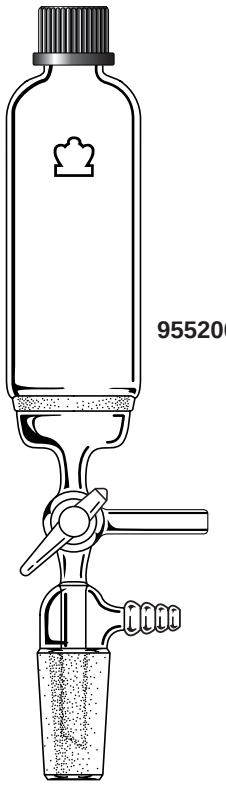
955140
955141

Vessel, with Lower Joint and T-Bore PTFE Plug

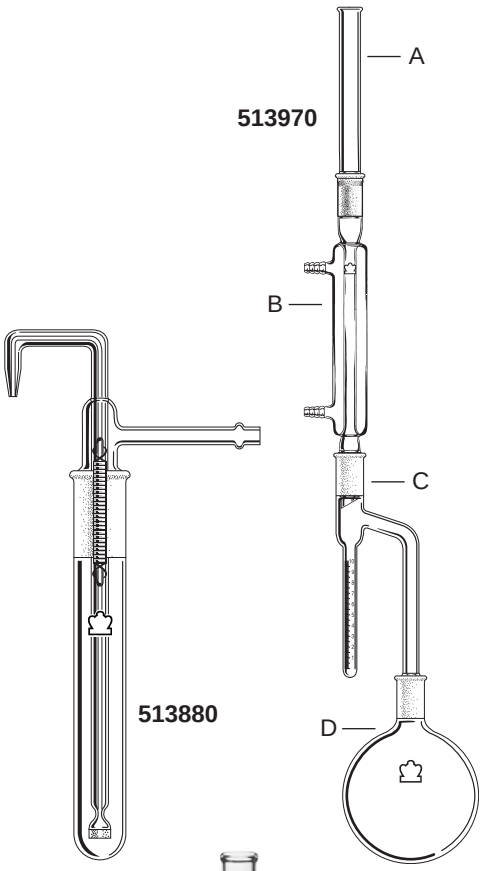
Solid phase peptide synthesis vessels feature 2 mm PTFE stopcocks and fritted glass supports for resin beads during operation. The ⅋ 24/40 inner drip joint can be assembled with other standard glassware. The vessel has a #1 hose connection for vacuum and the stopcock has an 8 mm O.D. sidearm is for inert gas introduction. Vessels are supplied with PTFE-faced silicone lined black phenolic caps.

Medium Porosity

Kontes Article No.	Cap. (mL)	Approx. Overall Height (mm)	Approx. Vessel OD x Height (mm)	GL Cap Size	Case Qty.	Case Price
955200-0025	25	230	25 x 50	25	1	198.74



955200



513970

513880

Apparatus, Distillation, Water in Crude Oil

Apparatus used for the determination of water in crude oil by distillation. Apparatus includes a 1000 mL round bottom flask with ℔ 24/40 joint, a distillation receiver with 0.05 graduations, a drying trap and a 400 mL Liebig condenser. Ref: ASTM D-4006. Heating mantles may be purchased separately.

Kontes Article No.	Description	Case Qty.	Case Price
513970-0000	Complete	1	237.81
Component Parts			
46003-2440	(A) Inlet Tube Adapter	1	XX.xx
447000-2440	(B) Liebig Condenser	1	103.75
751351-0005	(C) Distillation Receiver, 5 mL with 0.05 mL Graduations, ℔ 24/40	1	125.50
601000-0724	(D) Flask, Round Bottom 1000 mL	1	32.50

Apparatus, Filter Stick, with Hooks and Springs

Apparatus used in the determination of oil content and solvent extractables in petroleum waxes. The assembly consists of a sintered glass filter stick with air pressure inlet tube and delivery nozzle and a cooling tube with ℔ 24/40 joints. Supplied with one pair of springs. Ref: ASTM D721

Kontes Article No.	Description	Case Qty.	Case Price
513880-0000	Complete	1	65.31
Component Parts			
513881-0000	Filter Stick Only	1	47.55
513882-0000	Cooling Tube Only	1	20.36
662750-0001	Springs, Pkg/20 (1 pair supplied)	20	58.24

Bottle, Unsaturation, Gasoline

KIMAX bottle used in the determination of unsaturated hydrocarbons in gasoline. Body of the bottle (approximately 45 mL capacity) is a “reaction vessel” whereby an accurately measured sample is pipetted into the bottle; excess reagent is added and after the reaction is complete, more reagent is added to raise the “fat column” into the calibrated neck of the bottle where results are read directly as a percentage of fat in the sample.

Kimble Article No.	Neck Capacity (%)	Subdivision (%)	±Tol. (%)	Approx. Base O.D. (mm)	Approx. Height (mm)	Shelf-Pack Qty.	Case Qty.	Case Price
15066-10	100 (10 mL)	2	1	37	164	6	12	312.60

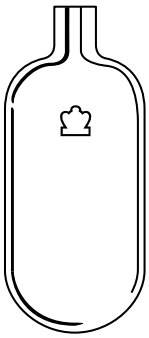


15066

Bulb, Ramsbottom Coking

Used in the determination of carbon residue in petroleum products. Bulb measures approximately 25 mm OD by 57 mm OAH. Ref: ASTM D 524

Kontes Article No.	Approx. O.D. x Overall Height (mm)	Case Qty.	Case Price
896650-0000	25 x 57	6	149.78



896650

Buret, Tutwiler Gas

This buret is designed for use with high sulfur content gas streams. All tubing connections are of large I.D. to reduce “clogging”: which occurs when sulfur precipitates out and deposits on the inside of connectors. Supplied with glass stopcock and stopper.

Kimble Article No.	Capacity (mL)	Tolerance Reservoir (mL)	Tolerance Buret (mL)	Approx. Length (mm)	Stopcock Size Top	Stopcock Size Bottom	Case Qty.	Case Price
30034A-100	100	0.15	0.2	480	2	4	1	803.46

Cell, Oxidation

Used in the measurement of inherent stability of middle distillate petroleum fuel under accelerated oxidizing conditions. The cell consists of a test tube, condenser and oxygen delivery tube. Ref: ASTM D943 and D2274.

Kontes Article No.	Approximate O.D. x Overall Height (mm)	Case Qty.	Case Price
896600-0000	45 x 600	1	190.50

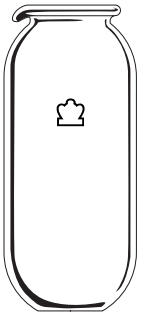
Container, Sample, with Cover

For use in the determination of the stability of gasoline under accelerated oxidation conditions. The cover is intended to prevent material that is refluxing back into the bomb stem from contaminating the sample. Ref: ASTM D525.

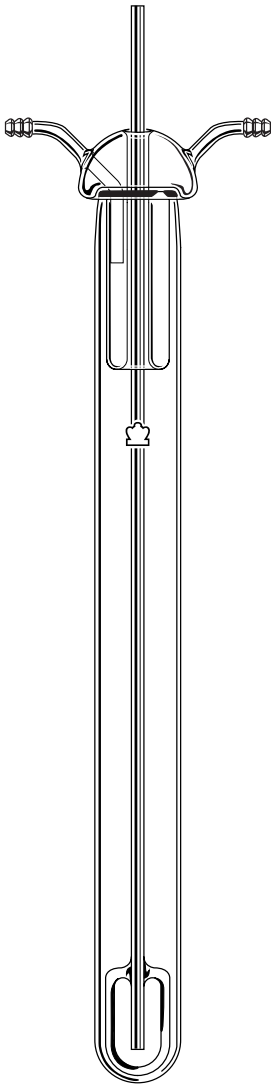
Kontes Article No.	Approx. Overall Width x Height (mm)	Case Qty.	Case Price
896670-0000	50 x 110	1	44.93



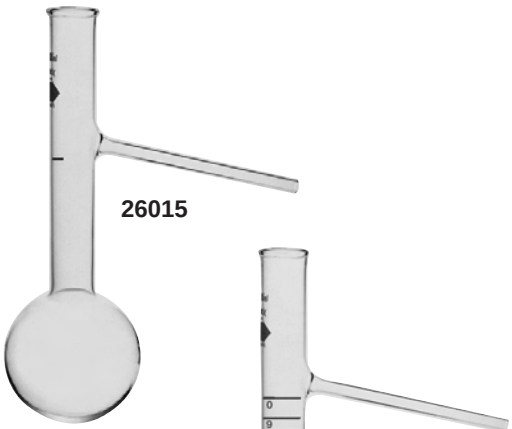
30034A



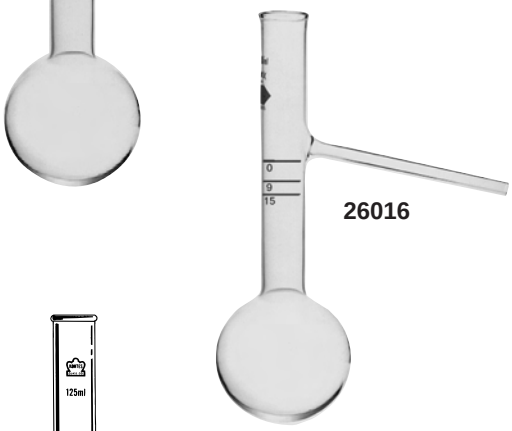
896670



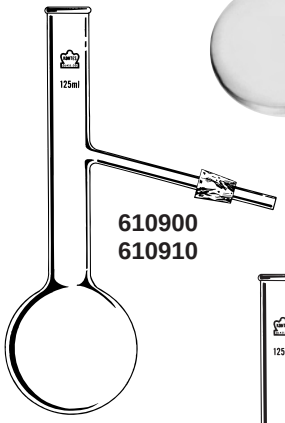
896600



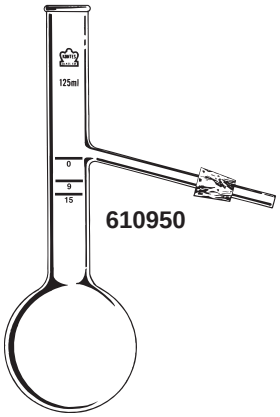
26015



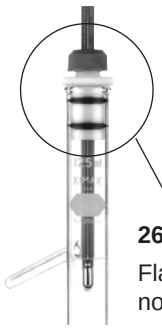
26016



610900
610910



610950



26015C

Flask and thermometer not included.

Distilling Flask, Engler

KIMAX distilling flask. Sidearm tube is sealed at an angle of 75° from the neck and is 137 ± 3 mm from the bottom of the flask. It is designed from ASTM Specification E133 and intended for use in ASTM D86, D233, D801, and D802.

Kimble Article No.	Capacity (mL)	Rubber Stopper Size	Approx. Height (mm)	Arm O.D. (mm)	Shelf-Pack Qty.	Case Qty.	Case Price
26015-125	125	2	214	7	12	24	433.20

Distilling Flask, Engler, Three Reference Lines

KIMAX distilling flask, same as 26015-125, except with three reference lines. For use with Haage automatic distillation apparatus or others that call for three thermometer depth insertions. Ref: ASTM D86.

Kimble Article No.	Capacity (mL)	Rubber Stopper Size	Approx. Height (mm)	Arm O.D. (mm)	Shelf-Pack Qty.	Case Qty.	Case Price
26016-125	125	2	214	7	12	24	478.80

Distilling Flask, Barrett and Engler, ASTM E133

Barrett and Engler distilling flasks made to ASTM E 133 specifications. These flasks feature smooth, consistent, heavy walls for uniform heating and minimal breakage. Supplied with one cork for the sidearm.

Kontes Article No.	Capacity (mL)	Rubber Stopper Size	Approx. Height (mm)	Type	Case Qty.	Case Price
610910-0125	125	2	215	Engler	12	324.53
610900-0200	200	3	180	Barrett	24	667.44

Distilling Flask, Engler, with Reference Lines

Heavy wall flask identical to 610910-0125 but with reference lines for use with automatic distillation apparatus indicating thermometer insertion points. Ref: ASTM D86

Kontes Article No.	Capacity (mL)	Rubber Stopper Size	Approx. Height (mm)	Case Qty.	Case Price
610950-0125	125	2	215	12	314.01

Centering Device, Thermometer, for Distilling Flasks

Designed for 6.5mm O.D. manual thermometer or 1/4" temperature sensor probe as used on standard Automated Distillation Apparatus with Kimble 26015-125 flasks. This PTFE device with FKM o-ring seal assures centering of sensor probe in flask neck. Cap is made of yellow polypropylene.

Kimble Article No.	Case Qty.	Case Price
26015C-125	1	61.17

Tube, Centrifuge, Graduated, API

KIMAX tube with a long taper. Calibrated to contain. Used to determine the bottom sediment and water in petroleum. Made in accordance with the former specifications of the American Petroleum Institute. (API Standard 2542). Scale, legend and marking spot are durable white ceramic enamel. Referred to as the “Finger” tube.

Kimble Article No.	Capacity (%)	Subdivision (%)	±Tolerance (%)	O.D. x Length (mm)	Case Qty.	Case Price
45170-125	100 (12.5 mL)	0-3 in 0.2 3-10 in 0.5 10-50 in 1 and at 100	0 to 1 -± 0.10 Above 1 to 2 - 0.15 Above 2 to 5 - 0.20 Above 5 to 10 - 0.40 Above 10 to 25 - 0.50 Above 25 - 1.00	17 x 118	12	201.60



45170

Tube, Centrifuge, Graduated, Goetz, with, ⅋ 16 Stopper

KIMAX tube used for the determination of small quantities of solids in large volumes of liquids. Calibrated to contain. Stem is graduated in 0.01 mL to 0.2 mL and the body has graduations at 25, 50, and 100 mL. Recommended for the determination of free water and sediment in diesel and other distillate fuels, as a pass-fail indication of product quality (ASTM D2709). Durable black ceramic enamel scale. (Do not centrifuge with stopper in tube) Replacement stopper is 41900R .

Kimble Article No.	Capacity (mL)	±Tolerance (mL)	O.D. x Length Without Stopper (mm)	Shelf-Pack Qty.	Case Qty.	Case Price
45220-100	100	0 to 0.2 - ± 0.01 At 25 - 1.00 Above 25 - 2.00	58 x 160	2	6	506.34

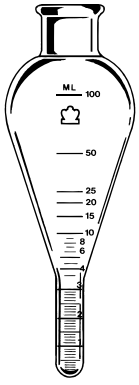


45220

Tube, Centrifuge, Pear-Shaped

Graduated tube is used for the determination of water and sediment in petroleum products per ASTM method D3904. Top is tooled for a size 5 rubber stopper.

Kontes Article No.	Capacity (mL)	Graduations x Subdivisions (mL)	Case Qty.	Case Price
412510-0000	100	0-3 x 0.1, 3-10 x 0.5, and at 15, 20, 25,50, and 100	1	49.65



412510

Tube, Centrifuge, Oil, 1.5 mL Stem

KIMAX tube used in the determination of bottom sediment and water in petroleum products and in the determination of foots in raw linseed oil by the gravimetric method (ASTM D1966). Calibrated to contain. Stem diameter holds 1.5 mL. Scale and legend are durable white ceramic enamel.

Kimble Article No.	Capacity (mL)	Subdivision (mL)	±Tolerance (mL)	O.D. x Length (mm)	Shelf-Pack Qty.	Case Qty.	Case Price
45244-100	100	0-1.5 in 0.1 1.5-5 in 0.5 5-10 in 1 10-25 in 5 and at 50, 100	0 to 1.5 - ±0.03 Above 1.5 to 3 - 0.20 Above 3 to 5 - 0.30 Above 5 to 10 - 0.50 Above 10 to 25 - 1.00 Above 25 - 2.00	58 x 158	6	12	917.40

Graduated in %. 100 mL equals 200%

Kimble Article No.	Capacity (mL)	Subdivision (mL)	±Tolerance (mL)	O.D. x Length (mm)	Case Qty.	Case Price
45244-200	200%	0-3% in 0.10% 3-5 in 0.50 5-10 in 1 10-100 in 10 100-200 in 20	0 to 1.5 - ±0.03 Above 1.5 to 3 - 0.20 Above 3 to 5 - 0.30 Above 5 to 10 - 0.50 Above 10 to 25 - 1.00 Above 25 to 100 - 2.00	58 x 158	6	463.56



45244



45240

Tube, Centrifuge, Oil, 8”

KIMAX tube used in the determination of water and sediment in crude mineral oils, fuel oils and other petroleum products D1796 and MPMS 10.4 standards); in determination of volume of precipitate formed by centrifuging definite quantities of steam cylinder stocks and black oils and other lubricating oils (ASTM D91 and D128); in tests for water-insoluble solids in methylcellulose (ASTM D1347); and in testing for acidity of distillation residues or hydrocarbon liquids of gasoline or petroleum solvents (ASTM D1093). Calibrated to contain. Scale and legend are durable white ceramic enamel. Also referenced in ASTM D4007. Top is tooled to accept a Snap Cap(28150R-6),

Kimble Article No.	Capacity (mL)	Subdivision (mL)	±Tolerance (mL)	O.D. x Length (mm)	Shelf-Pack Qty.	Case Qty.	Case Price
45240-100	100	0-0.5 in 0.05 0.5-2 in 0.1 2-3 in 0.2 3-5 in 0.5 5-10 in 1 10-25 in 5 25-100 in 25	0 to 0.1 -± 0.02 Above 0.1 to 0.3 - 0.03 Above 0.3 to 1 - 0.05 Above 1 to 3 - 0.10 Above 3 to 5 - 0.20 Above 5 to 10 - 0.50 Above 10 - 1.00	37 x 203	6	12	446.16



45241

Tube, Centrifuge, Oil and Weathering (End Point Index), 8”

KIMAX tube used extensively in California. Can be used in the determination of residues in Liquified Petroleum (LP) gases, ASTM Method D2158. Calibrated to contain. Different graduations than 45240. Scale and legend are durable white ceramic enamel. Top is tooled to accept a Snap Cap (28150R-6),

Kimble Article No.	Capacity (mL)	Subdivision (mL)	±Tolerance (mL)	O.D. x Length (mm)	Shelf-Pack Qty.	Case Qty.	Case Price
45241-100	100	0-1 in 0.05 1-3 in 0.1 3-6 in 0.2 6-10 in 0.5 10-100 in 1	0 to 0.1 - ±0.02 Above 0.1 to 0.30 - 0.03 Above 0.3 to 1 - 0.05 Above 1 to 3 - 0.10 Above 3 to 5 - 0.20 Above 5 to 10 - 0.50 Above 10 - 1.00	37 x 203	6	12	551.64

Tube, Centrifuge, Oil, Short Cone, 6”

KIMAX tube designed for field use in testing petroleum. Calibrated to contain. Scale and legend are durable white ceramic enamel. Also referenced in ASTM D4007. Top is tooled to accept a Snap Cap(28150R-6),

Kimble Article No.	Capacity (mL)	Subdivision (mL)	±Tolerance (mL)	O.D. x Length (mm)	Shelf-Pack Qty.	Case Qty.	Case Price
45243-100	100	0-0.5 in 0.05	0 to 0.1 - ±0.02 Above 0.1 to 0.3 - 0.03 Above 0.3 to 0.5 - 0.05	45 x 165	6	12	609.24
		0.5-2 in 0.1	Above 0.5 to 1 - 0.075 Above 1 to 1.5 - 0.10 Above 1.5 to 2 - 0.20				
		2-3 in 0.2	Above 2 to 3 - 0.30				
		3-5 in 0.5	Above 3 to 5 - 0.50				
		5-10 in 1	Above 5 to 10 - 0.75				
		10-25 in 5 and at 50,100	Above 10 to 25 - 1.00 Above 25 - 1.50				



45243-100

Graduated in %. 100 mL equals 200%.

Kimble Article No.	Capacity (mL)	Subdivision (mL)	±Tolerance (mL)	O.D. x Length (mm)	Case Qty.	Case Price
45243-200	200%	0-0.1% in 0.10% 1-4 in .20 4-6 in .40 6-10 in 1 10-20 in 2 20-50 in 10 and at 100,200	0 to 0.1 - ±0.02 Above 0.1 to 0.3 - 0.03 Above 0.3 to 0.5 - 0.05 Above 0.5 to 1 - 0.075 Above 1 to 1.5 - 0.10 Above 1.5 to 2 - 0.20 Above 2 to 3 - 0.30 Above 3 to 5 - 0.50 Above 5 to 10 - 0.75 Above 10 to 25 - 1.00 Above 25 - 1.50	45 x 165	6	266.70



45243-200

Viscometer Tube, Cannon-Fenske, Uncalibrated, Serialized

KIMAX tube designed from ASTM Specification D446. Permanently marked with an individual serial number. For use in obtaining kinematic viscosities of transparent liquids (ASTM Method of Test D445). Viscosity ranges shown below are for an efflux time greater than 200 seconds, except for size 25 where minimum time should be greater than 250 seconds. Lines and legend are printed black. Tubes have **not** been calibrated for constant value and must be before use. Calibration against a standard liquid of known viscosity or against a second viscometer with a known constant must be made.

Kimble Article No.	Size No.	Constant (c) Approx.	Kinematic Centistokes	Case Qty.	Case Price
46460-50	50	0.004	0.8 to 4	1	165.66
46460-100	100	0.015	3 to 15	1	165.66
46460-150	150	0.035	7 to 35	1	165.66
46460-200	200	0.1	20 to 100	1	165.66
46460-300	300	0.25	50 to 250	1	165.66
46460-350	350	0.5	100 to 500	1	165.66
46460-400	400	1.2	240 to 1200	1	165.66



46460



37079



37081

Bacteriological, Reusable, Color-Coded

KIMAX pipet with a scale of permanent brown stain fused into the surface of uniform bore tubing without etching. The 1.1, 2.2, and 11.0 mL sizes are calibrated in accordance with specifications of the American Public Health Association as published in Standard Methods for the Examination of Dairy Products.** All of the sizes mentioned above are calibrated to deliver the correct volume of undiluted milk when the small amount remaining in the tip, after free delivery has ceased, is blown out and added to the free delivery volume. However, for diluted milk, the correct volume is delivered without blowing out. Hence, none of these sizes have been marked to denote that the pipet is “calibrated for blowout”. The 10 mL size does have the markings. The 10 and 11 mL sizes are tooled for a cotton plug at the top end. Color-coded for ease in sorting and selecting the correct size pipet. Sizes 2.2 and 11.0 mL are designed from ASTM Specification E1043, Type IV A requirements. Size 1.1 mL is designed from ASTM Specification E1043, Type IV requirements.

** NOTE: Actual volume of water contained at 20° C at each graduation line is specified as follows: 0.5 (0.54) mL, 1.0 (1.075) mL, 1.1 (1.180) mL, 2.0 (2.150) mL, 2.1 (2.255) mL, 2.2 (2.360) mL, 11 (11.6) mL.

Kimble Article No.	Capacity (mL)	Calibration Lines at (mL)	±Tol. (mL)	Overall Length (mm)	Color of Coding Band	Case Qty.	Case Price
37079-11	1.1	1.1, 1.0, 0.5	0.025	300	2 Green	12	75.60
37079-22	2.2	2.2, 2.1, 2.0, 1.0	0.04	300	None	12	88.08
37079-10	10	10	0.10	300	Red	12	138.48
37079-110	11	11	0.10	345	None	12	117.36

Bacteriological, Reusable

KIMAX pipet with a subdivision scale of permanent brown stain fused into the surface of uniform bore tubing without etching. Tooled for a cotton plug at the top end. Designed from ASTM Specification E1043, Type V requirements.

Kimble Article No.	Capacity (mL)	Calibration Lines at (mL)	±Tol. (mL)	Overall Length (mm)	Color of Coding Band	Case Qty.	Case Price
37081-110	11	Every 1	0.10	345	None	12	105.60

Proper Method of Delivering Contents

- Draw liquid above top graduation using bulb or equivalent device.
- Use forefinger (not thumb) for level control.
- Wipe any drops off outside surface only.
- Zero meniscus at top graduation.
- Drain pipet with distill end touching side of receiving container.
- After emptying pipet, wait two seconds and remove pipet tip sideways and away from vessel wall. Do not remove the tip with an upward or downward motion.
- Only serological type pipets require last drops to be “blown out”. Do not “blow-out” volumetric (transfer) or measuring (mohr) pipets as they are calibrated for after “touch-off” to remain.

Proper Method of Delivering Contents of Measuring Pipets

Measuring Pipets should be held in a vertical position, and after outflow has ceased the tip should be touched to the wet surface of the receiving vessel to complete emptying.

Measuring, Reusable, To Deliver, Class A, Color-Coded, Serialized and Certified

KIMAX pipet has a permanently marked individual serial number. Supplied with a Certificate of Graduation Accuracy. Calibrated to deliver. Intended for chemical laboratory work. Tip openings are smaller than usually desired for clinical laboratory operations. Scale is permanent brown stain fused into uniform bore tubing without etching. Pipet is graduated to a base line which is on the straight tube above the taper. Color-coded for ease in sorting and selecting the correct size pipet. Designed from ASTM Specification E1293, Style 1, Class A requirements.

Kimble Article No.	Capacity (mL)	Subdivision (mL)	±Tol. (mL)	Overall Length (mm)	Color of Coding Band	Shelf Pack Qty.	Case Qty.	Case Price
37025-1110	1	0.10	0.01	350	Red	6	12	208.68
37025-11100	1	0.01	0.01	350	Yellow	6	12	285.72
37025-2	2	0.10	0.01	350	Green	6	12	290.40
37025-5	5	0.10	0.02	350	Blue	6	12	257.16
37025-10	10	0.10	0.03	350	Orange	1	6	344.76
37025-25	25	0.10	0.05	400	White	1	6	302.70



37025

Measuring (Mohr Style), Reusable, To Deliver, Class B, Color-Coded

KIMAX-51 pipet of rugged construction. Calibrated to deliver. Intended for chemical laboratory work. Tip openings are smaller than usually desired for clinical laboratory operations. Scale is permanent brown stain fused into uniform bore tubing without etching. Pipet is graduated to a base line which is on the straight tube above the taper. Color-coded for ease in sorting and selecting the correct size pipet. Designed from ASTM Specification E1293, Style 1, Class B requirements.

Kimble Article No.	Capacity (mL)	Subdivision (mL)	±Tol. (mL)	Overall Length (mm)	Color of Coding Band	Case Qty.	Case Price
37020-110	0.1	0.01	0.005	300	White	12	112.08
37020-1110	1	0.10	0.02	350	Red	12	104.88
37020-11100	1	0.01	0.02	350	Yellow	12	105.00
37020-2	2	0.10	0.02	350	Green	12	113.28
37020-5	5	0.10	0.04	350	Blue	12	113.28
37020-10	10	0.10	0.06	350	Orange	12	131.40
37020-25	25	0.10	0.10	400	White	12	178.92
37020-50	50	0.20	0.16	500	None	8	283.28



37020



Bands on Kimble "Blow-Out" Pipets serve as positive identification of this type of pipet.

Proper Method of Delivering Contents of Serological Pipets
Serological pipets should be held in a vertical position, and after outflow has ceased the tip should be touched to the wet surface of the receiving vessel with the small amount remaining in the tip blown out and added.

Serological (for Cotton-Plugging), Reusable, Color-Coded

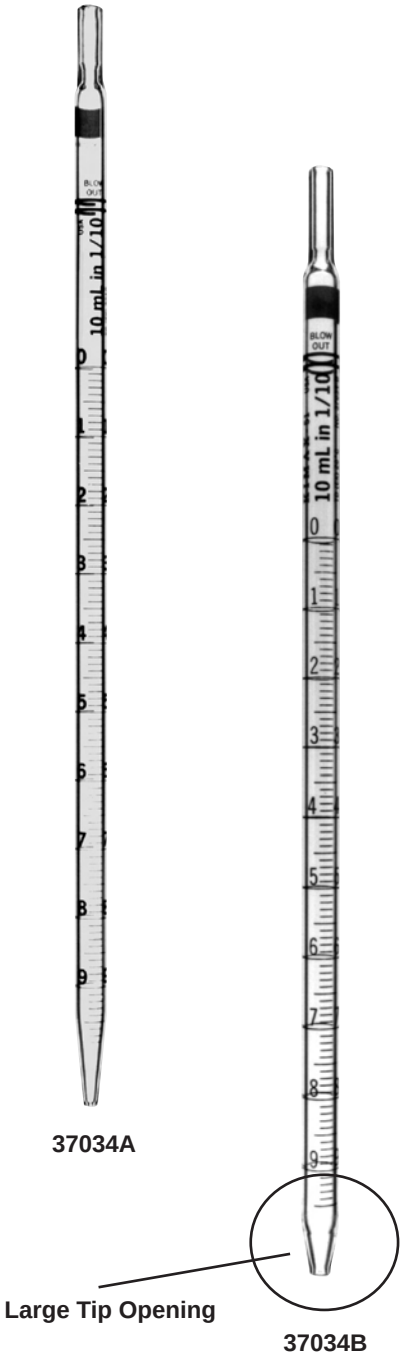
Top end has been tooled to accept cotton plugging on all sizes. The 0.5 mL pipets are shorter than the usual serological pipet. It is therefore simpler to transfer material to a slide because it is easier to control the top of the shorter instrument. When 0.05 mL quantities are wanted, the 0.5 mL pipet with 0.05 mL subdivisions is recommended, since nonessential graduations have been omitted. The capacities of the 0.5 mL pipets are ideal for syphilis testing, including VDRL tests. Most procedures require less than 0.5 mL of serum. Designed from ASTM Specification E1044, Style II requirements.

Kimble Article No.	Capacity (mL)	Subdivision (mL)	±Tol. (mL)	Overall Length (mm)	Color of Coding Band	Case Qty.	Case Price
37034A-210	0.2	0.01	0.008	300	Black	6	61.32
37034A-510	0.5	0.05	0.01	250	2 Black	6	62.22
37034A-1110	1	0.10	0.02	350	Red	12	96.48
37034A-11100	1	0.01	0.02	350	Yellow	12	95.76
37034A-2110	2	0.10	0.02	350	Green	6	55.38
37034A-21100	2	0.01	0.02	350	2 White	6	76.80
37034A-5	5	0.10	0.04	350	Blue	12	103.56
37034A-10	10	0.10	0.06	350	Orange	12	118.20
37034A-25	25	0.10	0.10	400	White	12	195.60

Serological (for Cotton-Plugging), Reusable, Wide Tip Opening, Color-Coded

With a wider tip opening for faster delivery, but less accuracy. Top end has been tooled to accept cotton plugging on all sizes. The 2 mL size has a tip opening slightly smaller than the bore of the graduated portion, while the larger sizes have openings of approximately 3 mm. For use with viscous liquids, slurries and suspensions. Designed from ASTM Specification E1044, Style III requirements.

Kimble Article No.	Capacity (mL)	Sub-division (mL)	Interval Subdivided (mL)	±Tol. (mL)	Overall Length (mm)	Approx. Tip Opening (mm)	Color of Coding Band	Case Qty.	Case Price
37034B-2	2	0.1	0 to 1.9	0.05	350	2.5	Green	12	139.68
37034B-5	5	0.1	0 to 4.8	0.10	350	3	Blue	12	139.68
37034B-10	10	0.1	0 to 9.5	0.10	350	3	Orange	12	143.28
37034B-25	25	0.1	0 to 24	0.20	400	3	White	6	109.50



37034A

37034B

All volumetric pipets are calibrated to deliver. Sizes 1 mL and larger are marked with large numerals on the bulb, indicating capacity. Color-coded (ASTM E1273) for ease in sorting and selecting the correct pipet. With a legend of permanent brown stain.

Proper Method of Delivering Contents of To Deliver Volumetric Pipets

In emptying volumetric and similar pipets they should be held in a vertical position and the outflow should be unrestricted. The tip should be touched to the wet surface of the receiving vessel and kept in contact with it until the emptying is complete. No drainage period is allowed.

Volumetric, Reusable, To Deliver, Class A, Color-Coded, Serialized and Certified

KIMAX pipet has a permanently marked individual serial number and is autoclavable. Supplied with a Certificate of Graduation Accuracy. Carefully selected to meet the requirements for accuracy, appearance, glass quality, calibration line, and inscription of former NBS Circular 602. Designed from ASTM Specification E969, Class A requirements. 75 and 200 mL sizes are designed from ASTM E542.

Kimble Article No.	Capacity (mL)	±Tol. (mL)	Overall Length (mm)	Color of Coding Band	Shelf-Pack Qty.	Case Qty.	Case Price
37010-510	0.5	0.006	310	2 Black	6	12	153.24
37010-1	1	0.006	310	Blue	6	12	153.24
37010-1510	1.5	0.006	335	-	6	12	185.21
37010-2	2	0.006	335	Orange	6	12	196.44
37010-2510	2.5	0.006	350	-	6	12	209.93
37010-3	3	0.01	350	Black	6	12	227.52
37010-4	4	0.01	350	2 Red	6	12	249.24
37010-5	5	0.01	365	White	6	12	256.80
37010-6	6	0.01	375	2 Orange	6	12	257.91
37010-7	7	0.01	400	2 Green	6	12	262.01
37010-8	8	0.01	400	Blue	6	12	265.64
37010-9	9	0.02	400	Black	6	12	266.80
37010-10	10	0.02	400	Red	6	12	267.60
37010-12	12	0.02	460	-	6	12	284.36
37010-15	15	0.03	455	Green	6	12	301.23
37010-20	20	0.03	505	Yellow	2	12	339.60
37010-25	25	0.03	505	Blue	1	12	339.60
37010-30	30	0.03	525	Black	1	6	175.86
37010-40	40	0.03	525	White	1	6	198.48
37010-50	50	0.05	545	Red	1	8	269.12
37010-75	75	0.05	550	Green	1	6	233.37
37010-100	100	0.08	550	Yellow	1	6	244.26
37010-200	200	0.16	560	Blue	1	6	550.56



37010

Volumetric, Reusable, To Deliver, Class A, Color-Coded, Unserialized

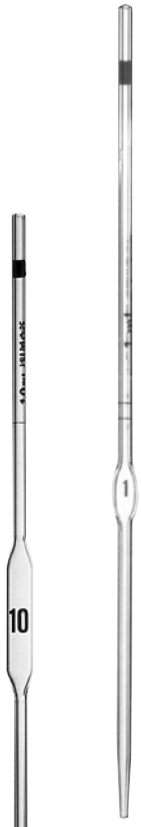
KIMAX pipet of rugged construction. Designed from ASTM Specification E969, Class A requirements. 75 and 200 mL sizes are designed from ASTM E542.

Kimble Article No.	Capacity (mL)	±Tol. (mL)	Overall Length (mm)	Color of Coding Band	Shelf-Pack Qty.	Case Qty.	Case Price
37004-510	0.5	0.006	310	2 Black	6	12	111.84
37004-1	1	0.006	310	Blue	6	12	113.52
37004-1510	1.5	0.006	335	-	6	12	113.52
37004-2	2	0.006	335	Orange	6	12	113.52
37004-2510	2.5	0.006	350	-	6	12	113.52
37004-3	3	0.01	350	Black	6	12	113.52
37004-4	4	0.01	350	2 Red	6	12	113.52
37004-5	5	0.01	365	White	6	12	112.20
37004-6	6	0.01	375	2 Orange	-	6	61.08
37004-7	7	0.01	400	2 Green	-	6	69.00
37004-8	8	0.01	400	Blue	-	6	69.24
37004-9	9	0.02	400	Black	-	6	69.12
37004-10	10	0.02	400	Red	6	12	124.56
37004-12	12	0.02	460	-	6	12	165.70
37004-15	15	0.03	455	Green	6	12	170.64
37004-20	20	0.03	505	Yellow	6	12	184.80
37004-25	25	0.03	505	Blue	6	12	197.64
37004-30	30	0.03	525	Black	-	6	141.96
37004-40	40	0.05	525	White	-	6	141.96
37004-50	50	0.05	545	Red	6	12	259.92
37004-75	75	0.05	515	Green	1	6	205.40
37004-100	100	0.08	550	Yellow	2	12	368.40
37004-200	200	0.16	560	Blue	1	6	385.80



37004

These pipets are made in compliance with ASTM Specification E1273 for color coding.



37007



761000



37100

37000

Volumetric, Reusable, To Contain and To Deliver, Class A, Unserialized

The TC (to contain) feature of this pipet accommodates use with viscous liquids, where the entire contents are washed out. Calibrated “to contain” (bottom line) and “to deliver” (top line) to Class A tolerances.

Kimble Article No.	Capacity (mL)	±Tol. (mL)	Overall Length (mm)	Color of Coding Band	Case Qty.	Case Price
37007-1	1	0.006	310	Blue	6	70.14
37007-2	2	0.006	335	Orange	6	70.14
37007-3	3	0.01	350	Black	6	79.08
37007-4	4	0.01	350	2 Red	6	79.08
37007-5	5	0.01	365	White	6	70.14
37007-6	6	0.01	375	2 Orange	6	81.24
37007-7	7	0.01	400	2 Green	6	81.96
37007-8	8	0.02	400	Blue	6	81.24
37007-9	9	0.02	400	Black	6	81.96
37007-10	10	0.02	400	Red	6	85.74
37007-15	15	0.03	455	Green	6	97.56
37007-20	20	0.03	505	Yellow	6	110.94
37007-25	25	0.03	505	Blue	6	110.94

Volumetric, Reusable, Class B, Color-Coded

KIMAX pipet of rugged construction. The most widely used volumetric pipet in general laboratory work. Designed from ASTM Specification E969, Class B requirements.

Kimble Article No.	Capacity (mL)	±Tol. (mL)	Overall Length (mm)	Color of Coding Band	Shelf-Pack Qty.	Case Qty.	Case Price
37000-1	1	0.012	310	Blue	-	12	98.40
37000-2	2	0.012	335	Orange	-	12	98.40
37000-3	3	0.02	350	Black	-	12	118.80
37000-5	5	0.02	365	White	-	12	105.12
37000-10	10	0.04	400	Red	-	12	126.24
37000-20	20	0.06	505	Yellow	6	12	172.32
37000-25	25	0.06	505	Blue	6	12	182.40
37000-50	50	0.10	545	Red	6	12	242.16
37000-100	100	0.16	550	Yellow	2	12	342.24

Transfer / Volumetric, Class A

Class A transfer pipet with long delivery and suction stem and a permanent legend. Conforms to volumetric tolerances in ASTM E694.

Kontes Article No.	Capacity (mL)	±Tol. (mL)	Overall Length (mm)	Case Qty.	Case Price
761000-0200	200	0.10	560-590	1	74.89

Saybolt Drawoff, Complete

KIMAX pipet used to adjust the volume of oil in the Saybolt Viscosimeter. Also suitable for use in settlement determinations of emulsified asphalts (ASTM Method of Test D244). Supplied with a rubber bulb.

Kimble Article No.	Approx. Capacity (mL)	Case Qty.	Case Price
37100-60	60	1	25.58

Disposable glass pipets are a one use item printed with a chemically resistant organic ink. The ink is resistant to most chemicals with the exception of oxidizing acids, glacial acetic acid and strong solvents such as methylene chloride.

Bacteriological, Disposable, Glass, Milk, Plugged, Sterile, Individually Wrapped

Pipets have a uniform pulled tip and are clean, plugged, sterile and ready for use. Calibrated to meet APHA requirements for making milk dilutions. 1.1 mL size is also used for the milk phosphatase test. Packaged in paper/plastic individual wraps and overpacked in convenient dispensing shelf-packs for laboratory benches. Paper/plastic wrap gives the advantage of see-through plastic yet the easy tear-through feature of paper.

Kimble Article No.	Capacity (mL)	Subdivision (mL)	±Tol (mL)	Package Color Code	Inner Pack Qty.	Case Qty.	Case Price
72106-11	1.1	0.5, 1.0, 1.1	0.025	Purple	200	1000	343.06
72106-22	2.2	1, 2, 2.1, 2.2	0.040	Black	125	500	178.74



72106

Micro, Disposable, Microcaps®

Microcaps® are ingeniously simple . . . in concept and in use. These precision-bore glass capillary tubes are cut to predetermined lengths, so that each capillary tube will hold a known volume of fluid when filled. Drummond Microcaps are so inexpensive that it is almost always practical to dispose of the tube after use.

Filling is simple. Capillary action not externally applied suction draws the fluid into the tube. To dispense the fluid, simply squeeze the bulb. No unusual skills or training is required. Immediate, professional results. Ideal for spotting preadsorbent TLC plates.

Supplied with one bulb assembly and one dispenser vial with 100 micropipets.

Kontes Article No.	Cap. (µL)	Length (mm)	Relative I.D. (in.)	Relative O.D. (in.)	Vol. Tol.(%)	Case Qty.	Case Price
764500-0000	0.5	32	0.0056	0.022	+ 1	100	31.01
764500-0001	1.0	32	0.0078	0.025	+ 1	100	25.66
764500-0002	2.0	32	0.0111	0.030	+ 1	100	25.66
764500-0005	5.0	32	0.0174	0.0355	+ 1	100	25.66
764500-0010	10.0	41	0.0219	0.0314	+ 1	100	25.66
764500-0020	20.0	64	0.0249	0.0355	+ 1	100	25.66
764500-0025	25.0	65	0.0272	0.0382	+ 1	100	25.66
764500-0050	50.0	100	0.0314	0.043	+ 1	100	25.66
764500-0100	100.0	116	0.0410	0.0555	+ 1	100	25.66



764500

TLC Spotting Capillaries, 5 Pack, Microcaps®

The Microcaps “5 Pack” is ideal for use in spotting TLC plates. Each kit has 5 dispenser vials containing 100 micropipets each of 0.5, 1, 2, 5 and 10 µL sizes. Also included are a bulb assembly and spotting holder.

Kontes Article No.	Case Qty.	Case Price
764520-0000	1	95.87



764520

71900



Micro Capillary, Disposable, To Contain

Calibrated to contain. Pipets are 5 inches long with a single black capacity ring and are color-coded for selection of the correct size. Clean and ready to use. Made of soda lime glass in compliance with ASTM Specification E438, Type II glass requirements. Filling is easy. Capillary action draws the fluid into the tube. To dispense, simply cover the hole on the rubber bulb and squeeze. Packaged in easy-open cylinders for convenient dispensing. Each cylinder contains 250 pipets and one pipet device. Designed from ASTM Specification E672 requirements.

Kimble Article No.	Microliter (Lambda)	±Tol (%)	Color Code	Cylinder Qty.	Case Qty.	Case Price
71900-5	5	1.0	White	250	1000	179.29
71900-10	10	0.5	Orange	250	1000	179.29
71900-20	20	0.5	Black	250	1000	181.02
71900-25	25	0.5	2 White	250	1000	181.02
71900-50	50	0.5	Green	250	1000	181.02
71900-100	100	0.5	Blue	250	1000	181.02



883350
63A54 - 63DP1005

Pasteur, Disposable (Borosilicate and Soda Lime)

Pasteur-type pipets for one time use in the transfer of small volumes.

Borosilicate Kontes Article No.	Overall Length (in.)	Tip Length (in.)	Body Length (in.)	O.D. (mm)	Case Qty.	Case Price
883350-0575	5 3/4	2 1/4	3 1/2	7	250	15.36
883350-0009	9	5	4	7	250	16.92
Soda Lime Chase Article No.						
63A54	5 3/4	2 1/4	3 1/2	7	1000	65.10
63B93	9	5	4	7	1000	86.80
Soda Lime, Cotton-Plugged Chase Article No.						
63A54P	5 3/4	2 1/4	3 1/2	7	1000	86.80
63B93P	9	5	4	7	1000	108.50
Soda Lime, Blood Bank Dropper Chase Article No.						
63C50	5 3/4	2 1/4	3 1/2	7	1000	86.80
Soda Lime, Monstr-Pette Chase Article No.						
63DP1005	5 3/4	2 1/4	3 1/2	7	800	95.48



763620

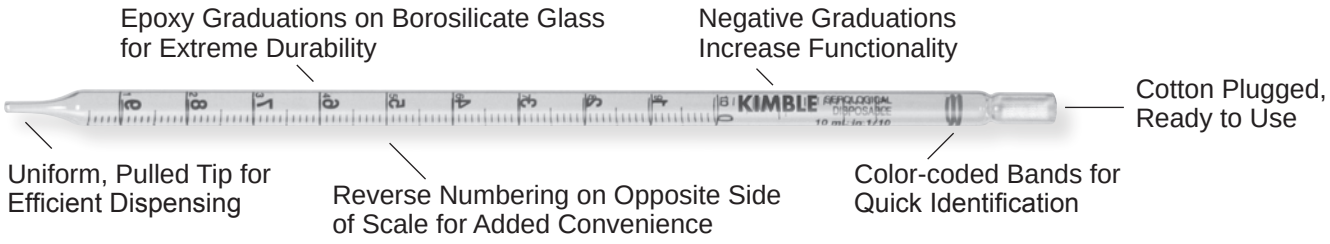
Pipette Pump™, Thumb Controlled

Provides a safe method for pipetting. Unit accepts a variety of glass pipets depending on the volume required. These pumps fill and empty simply by rotating the thumbwheel forward or backward. Particularly useful when using organic solvents. The 2 mL size can be used with 7mm O.D. disposable pasteur pipets. These pumps can be easily disassembled for cleaning if necessary.

Kontes Article No.	Fits Pipets Up To (mL)	Color	Case Qty.	Case Price
763620-0200	2	Blue	1	20.50
763620-1000	10	Green	1	22.61
763620-2500	25	Red	1	31.50

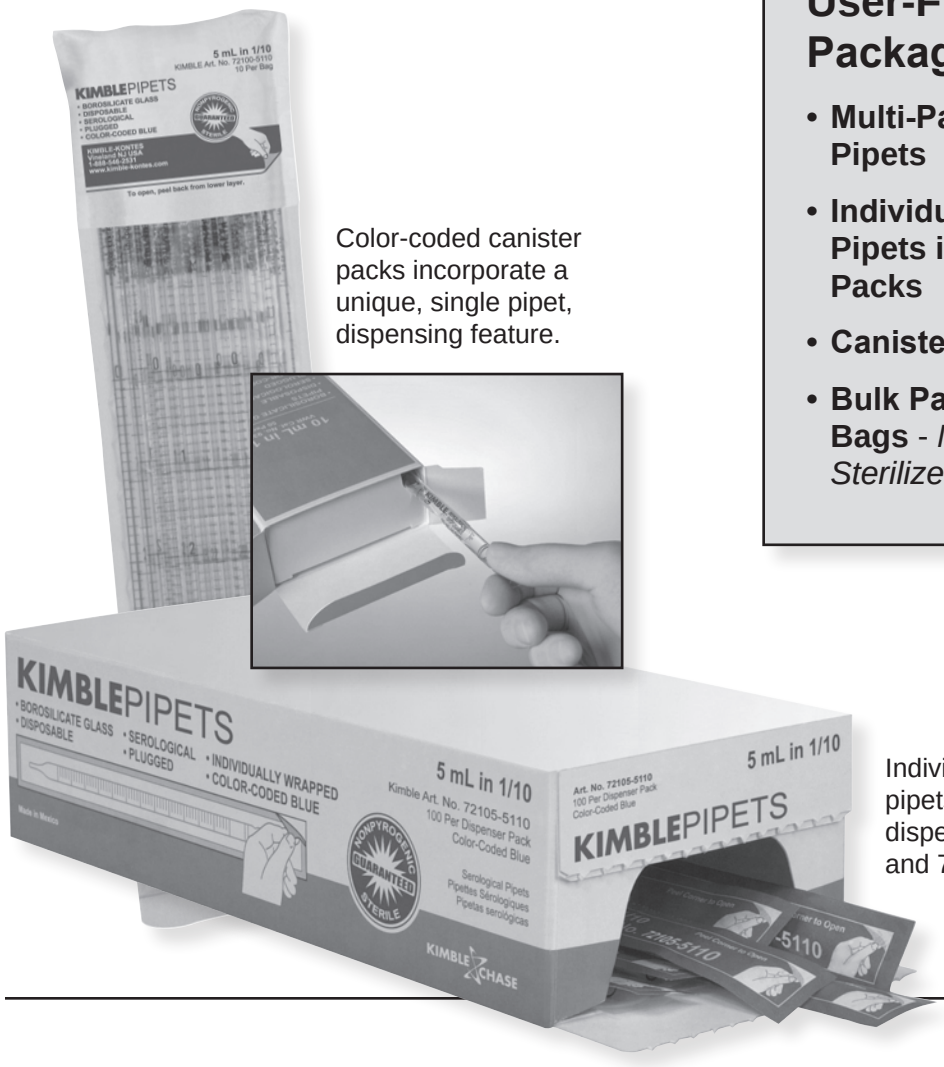
KIMBLE Pipets, An Industry First - Now Nonpyrogenic and Sterile!

- **Borosilicate glass in compliance with ASTM Specification E438, Type I, Class B glass requirements**
- **Pipets are designed in accordance with ASTM Specification E714**
- **Color-coded by size per ASTM E1380**



Bag labels are color-coded and clearly marked with pipet size.

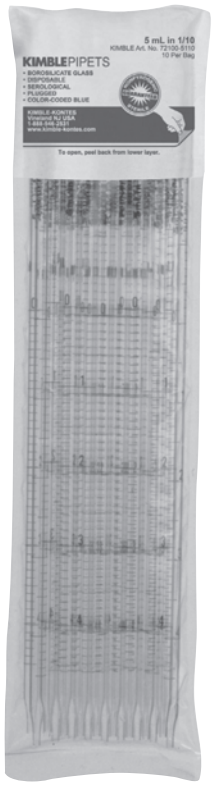
Color-coded canister packs incorporate a unique, single pipet, dispensing feature.



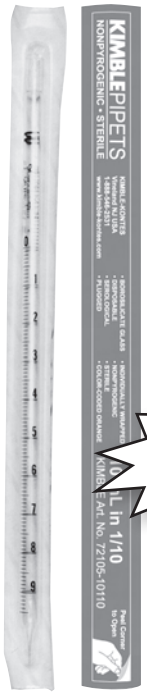
Shipped in NEW, Redesigned, User-Friendly Packaging!

- **Multi-Pack Bagged Pipets**
- **Individually Wrapped Pipets in Dispenser Packs**
- **Canister Pack Pipets**
- **Bulk Pack Pipets in Bags** - *Not Plugged or Sterilized*

Individually wrapped, color-coded pipets are packed in easy-access dispenser cartons. See 72105 and 72115 series' pipets.



72100



Dispenser Packs!

72105



72120

Serological, Disposable, Glass, To Deliver, Plugged, Sterile, Non-Pyrogenic, Multi-Pack, Color-Coded

Pipets have a uniform pulled tip and are clean, plugged, sterile and ready for use. Calibrated to deliver to the tip, with two rings near the top denoting that the small amount remaining in the tip after free delivery has ceased must be blown out and added to the main volume delivered. Provided with "negative" graduations to increase the versatility of the pipet. Made from borosilicate glass in compliance with ASTM Specification E438, Type I, Class B glass requirements. Sizes 1 and 2 mL are packaged 25 pieces per bag, sizes 5 and 10 mL are 10 pieces per bag. Designed from ASTM Specification E714.

Kimble Article No.	Capacity (mL)	Sub-division (mL)	Negative Graduations (mL)	Tol. ± (mL)	Color Code	Pipets Per Bag	Inner Pack Qty.	Case Qty.	Case Price
72100-1110	1	0.1	0.2	0.03	Red	25	250	1000	344.02
72100-11100	1	0.01	0.2	0.03	Yellow	25	250	1000	331.26
72100-21100	2	0.01	0.2	0.06	White	25	250	500	172.08
72100-5110	5	0.1	1	0.15	Blue	10	250	500	251.08
72100-10110	10	0.1	2.5	0.30	Orange	10	250	500	287.62

Serological, Disposable, Glass, To Deliver, Plugged, Sterile, Non-Pyrogenic, Individually Wrapped, Color-Coded

Pipets have a uniform pulled tip and are clean, plugged, sterile and ready for use. Calibrated to deliver to the tip, with two rings near the top denoting that the small amount remaining in the tip after free delivery has ceased must be blown out and added to the main volume delivered. Provided with "negative" graduations to increase the versatility of the pipet. Made from borosilicate glass in compliance with ASTM Specification E438, Type I, Class B glass requirements. Designed from ASTM Specification E714. Packaged in paper/plastic individual wrap and overpacked in convenient dispensing shelf packs for laboratory benches. Color-coded, paper/plastic wrap gives the advantage of speed and accuracy when selecting a pipet size.

Kimble Article No.	Capacity (mL)	Sub-division (mL)	Negative Graduations (mL)	Tol. ± (mL)	Color Code	Inner Pack Qty.	Case Qty.	Case Price
72105-1110	1	0.1	0.2	0.03	Red	200	1000	342.53
72105-11100	1	0.01	0.2	0.03	Yellow	200	1000	370.48
72105-21100	2	0.01	0.2	0.06	White	125	500	216.71
72105-5110	5	0.1	1	0.15	Blue	100	500	297.10
72105-10110	10	0.1	2.5	0.30	Orange	100	500	317.63

Serological, Disposable, Glass, To Deliver, Non-Plugged, Non-Sterile, Bulk Pack, Color-Coded

Pipets are non-plugged and non-sterile, with a uniform pulled tip. Calibrated to deliver to the tip, with two rings near the top denoting that the small amount remaining in the tip after free delivery has ceased must be blown out and added to the main volume delivered. Provided with "negative" graduations to increase the versatility of the pipet. Made from borosilicate glass in compliance with ASTM Specification E438, Type I, Class B glass requirements. Bulk packed in sealed plastic bags and overpacked in shelf packs. Color of scale is blue.

Kimble Article No.	Capacity (mL)	Sub-division (mL)	Negative Graduations (mL)	Tol. ± (mL)	Color Code	Pipets Per Bag	Inner Pack Qty.	Case Qty.	Case Price
72120-1110	1	0.1	0.2	0.03	Red	125	250	1000	273.82
72120-11100	1	0.01	0.2	0.03	Yellow	125	250	1000	297.74
72120-21100	2	0.01	0.2	0.06	White	125	250	500	169.64
72120-5110	5	0.1	1	0.15	Blue	100	100	500	252.18
72120-10110	10	0.1	2.5	0.30	Orange	100	100	500	277.21

These pipets are made in compliance with ASTM Specification E1380 for color coding.

Serological, Disposable, Glass, To Deliver, Plugged, Sterile, Non-Pyrogenic, Canister Pack, Color-Coded

Pipets have a uniform pulled tip and are clean, plugged, sterile and ready for use. Calibrated to deliver to the tip, with two rings near the top denoting that the small amount remaining in the tip after free delivery has ceased must be blown out and added to the main volume delivered. Provided with "negative" graduations to increase the versatility of the pipet. Made from borosilicate glass in compliance with ASTM Specification E438, Type I, Class B glass requirements. Designed from ASTM Specification E714. Packaged in a convenient recloseable canister pack. Each canister contains 50 pieces sealed in a plastic bag.

Kimble Article No.	Capacity (mL)	Sub-division (mL)	Negative Graduations (mL)	±Tol (mL)	Color Code	Inner Pack Qty.	Case Qty.	Case Price
72102-11100	1	0.01	0.2	0.03	Yellow	50	500	205.60
72102-21100	2	0.01	0.2	0.06	White	50	500	268.75
72102-5110	5	0.1	1	0.15	Blue	50	500	312.10
72102-10110	10	0.1	2.5	0.30	Orange	50	500	351.08



72102

Serological, Disposable, Glass, To Deliver, Shorties, Plugged, Sterile, Non-Pyrogenic, Individually Wrapped, Color-Coded

These "Shorty" pipets are ideal for use in tissue culture work and other procedures performed under a fume hood or in other confined areas. The pipets have "reverse" and "negative" graduations to increase the versatility of the pipet. They are calibrated "to deliver" with blow-out after free flow of liquid has ended. "Shorty" pipets are packaged in color-coded, paper/plastic individual wrap for speed and accuracy in selecting the correct size. They are overpacked in convenient, dispensing shelf-packs.

Kimble Article No.	Capacity (mL)	Sub-division (mL)	Negative Graduations (mL)	±Tol (mL)	Color Code	Inner Pack Qty.	Case Qty.	Case Price
72115-11100	1	0.01	0.5	0.04	Yellow	200	400	167.83
72115-5110	5	0.1	2.0	0.2	Blue	100	200	173.14
72115-10210	10	0.2	2.0	0.4	Orange	100	200	196.10
72115-25210	25	0.2	5.0	1.0	Green	100	200	287.35
72115-50510	50	0.5	7.0	1.5	Purple	25	50	145.16



72115

"Shorty" pipets are great for use in confined spaces such as fume hoods.

Serological, Disposable, Glass, To Deliver, Shorties, Plugged, Sterile, Non-Pyrogenic, Multi-Pack, Color-Coded

These "Shorty" pipets are packaged in a multi-pack bag so one or several can be removed without contaminating the entire pack.

Kimble Article No.	Capacity (mL)	Sub-division (mL)	Negative Graduations (mL)	±Tol (mL)	Color Code	Pipets Per Bag	Inner Pack Qty.	Case Qty.	Case Price
72110-11100	1	0.01	0.5	0.04	Yellow	8	25	400	169.37
72110-5110	5	0.1	2.0	0.2	Blue	10	10	200	173.14
72110-10210	10	0.2	2.0	0.4	Orange	10	10	200	197.60
72110-25210	25	0.2	5.0	1.0	Green	20	5	200	286.13
72110-50510	50	0.5	7.0	1.5	Purple	5	5	50	154.23



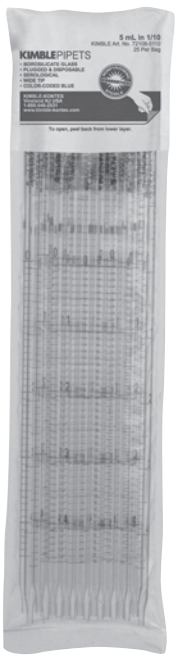
72110

Serological, Disposable, Glass, To Deliver, Wide Tip, Plugged, Sterile, Non-Pyrogenic, Multi-Pack, Color-Coded

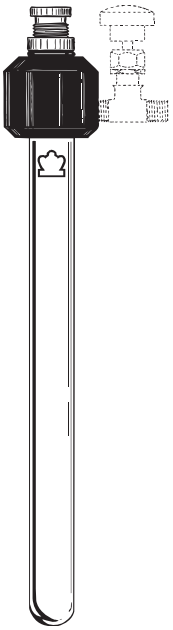
Pipets are sterile, plugged and are excellent for transferring viscous or suspended liquids. Multi-packed in plastic bags to protect against contamination.

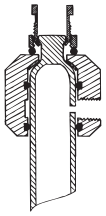
Kimble Article No.	Capacity (mL)	Sub-division (mL)	Negative Graduations (mL)	±Tol (mL)	Color Code	Pipets Per Bag	Inner Pack Qty.	Case Qty.	Case Price
72108-5110	5	0.1	1	0.15	Blue	25	200	400	240.22
72108-10110	10	0.1	2.5	0.30	Orange	20	200	400	265.72

Use wide tip pipets for viscous and suspended liquids.



72108





4-5 mm Hole

767100

Pressure Vessel, Griffin-Worden

Designed in quartz and borosilicate to provide the researcher with a safe, convenient, pressure/reaction vessel. This unit is especially useful in the following areas:

Photochemistry: Irradiation of volatile reactants such as 2-butane which may be readily condensed in either quartz or borosilicate units.

Sealed-Tube Reactions: As a substitute for the Carius-type tube with the advantages that sealing with a torch is not required. Pressure release is conveniently and safely achieved prior to opening by means of a valve.

Aerosol Compatibility: Simplicity and ease of assembly makes this unit far superior to presently available equipment.

Medium Pressure Hydrogenations: As a substitute, with minor modification, for standard hydrogenation bottles.

Vacuum Sublimation: Readily heated at the tip with a flame, heating tape, metal block, or oil bath under vacuum.

Gas Transfer: Permits transfer of small quantities of gases such as ammonia in liquid form from a cylinder to a reaction vessel.

Other applications in the areas of gas sampling, gas chromatography, mass spectroscopy.

The unique, strain-free closure is double o-ringed and seated on a specially formed tubing surface without screw threads, clamps, or other strain producing hardware that may cause glass failure under pressure. The borosilicate vessels were designed and tested for use at 200 psig and the quartz vessels to pressures of 250 psig.* Supplied complete with a tube, tube retainer, size 118 FKM seal o-rings, gasket and an anodized aluminum end cap. End cap is tapped to accept a 1/8" N.P.T. threaded accessory valve.

Kontes Article No.	Tube Material	Approx. Tube Cap. (mL)	Tube O.D. (mm)	Approx. Overall Length (mm)	Case Qty.	Case Price
767100-0021	Borosilicate	60	22	285	1	138.34
767100-0022	Quartz	60	22	285	1	232.28

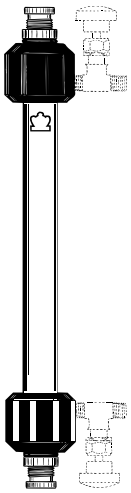
Component Parts

767101-0021	Borosilicate Tube, 60 mL	1	57.17
767101-0022	Quartz Tube, 60 mL	1	151.37
767102-0000	End Cap, Complete With O-Ring and Gasket Set	1	70.15
767103-0000*	O-Ring/Gasket Set	1	12.27
809000-0022	Retainer, Size 22	1	6.10

Accessory

767104-0000	Valve, Brass	1	65.59

* Included in 767102-0000.



767150

*** Pressurized glassware should always be used behind adequate safety shielding.**

Pressure Vessel, Griffin-Worden

Similar to 767100 vessel except double ended. This vessel may be used in all of the areas mentioned above, and is also ideal for gas-phase reactions and as a coupler and transfer device. Supplied complete with a tube, tube retainers, two anodized aluminum end caps, size 118 FKM o-rings, and gaskets. End caps are tapped to accept 1/8" N.P.T. threaded accessory valves.

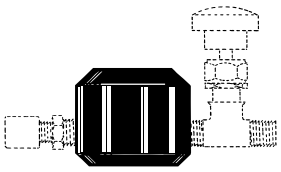
Kontes Article No.	Tube Material	Approx. Tube Cap. (mL)	Tube O.D. (mm)	Approx. Overall Length (mm)	Case Qty.	Case Price
767150-0021	Borosilicate	60	22	305	1	232.28
767150-0022	Quartz	60	22	305	1	331.47

Component Parts

767151-0021	Borosilicate Tube, 60 mL	1	66.55
767151-0022	Quartz Tube, 60 mL	1	161.82
767102-0000	End Cap, Complete With O-Ring and Gasket Set (2 Supplied)	1	70.15
767103-0000*	O-Ring/Gasket Set	1	12.27
809000-0022	Retainer (2 Required)	1	6.10

Pressure Vessel End Cap, Double Inlet

This double inlet cap permits Griffin-Worden Pressure vessels to be used with both a valve and the convenience of an injection port for injection or extraction of a sample. Supplied complete with size 118 FKM sealing o-rings and a gasket.



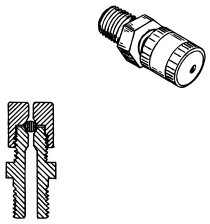
767160

Kontes Article No.	Case Qty.	Case Price
767160-0000	1	75.37

Pressure Vessel Inlet Port, Griffin-Worden

A unique pressure inlet system that incorporates the compressibility of a sphere as its major design feature. This brass unit permits injection or extraction of samples at pressures up to 300 psi.

Five to ten insertions are possible before replacement of the spherical silicone septum is necessary. Injections should be made with a syringe having a PTFE seal on the plunger and a directly sealed needle having a diameter of 0.5 mm or less and a length of approximately 35 mm. Pressure port is provided with a 1/8" N.P.T. to fit either the single inlet 767102 or the 767160 double inlet pressure vessel end cap. All pressure vessel tubes are indexed to permit alignment of the tube opening with an inlet port.



767170

Kontes Article No.		Case Qty.	Case Price
767170-0000		1	50.51
Replacement Septa			
767171-0000	Silicone Septum, Pkg./100	100	281.75
767172-0000	Silicone Septum, Pkg./10	10	32.01

Pressure Vessel, Diazomethane Generator

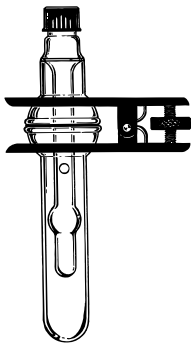
(N-methyl-N'nitro-N-nitrosoguanidine) produces diazomethane when treated with an aqueous alkali. This co-distillation produces small quantities required for analytical purposes.

One millimole (147 mg) of nitrosoguanidine is placed within the inner tube along with a 1/2 mL of water to dissipate generated heat.

Approximately 3 mL of ether is placed in the outer tube and the assembly is completed, using a size 120 ethylene-propylene o-ring (758292-0120) and a size 35 pinch clamp (675000-0035).

The lower part of the generator is placed in an ice bath and about 0.6 mL of 5 N sodium hydroxide is injected very slowly, drop by drop, to avoid excessive foaming and back pressure. This is injected through the silicone rubber septum with a syringe having a 22 gauge needle.

The generated diazomethane collects in the ether and is ready for further use.

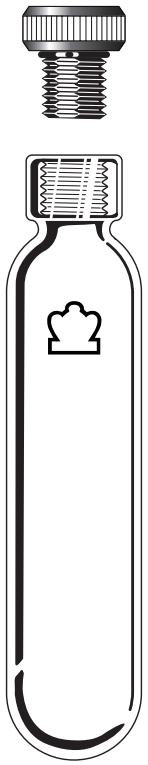


767200

Note:
When working with this material, use a well ventilated hood and safety shield.

Kontes Article No.	Recomended Starting Material Size (mg)	O-Ring Clamp Size	Approx. Overall Height x O.D. (mm)	GPI Thread	Case Qty.	Case Price
767200-0021	50-130	120 x 35	205 x 25	13-425	1	116.79

Ref: Fales, H. M. (1973), Anal Chem. 45 (13), 2302 - 2303.



767210

Pressure Vessels, Heavy Wall

Cylindrical and round bottom vessels have an internal thread for use with a PTFE bushing as a pressure seal. Unique design allows hand tightening and loosing for easy access into the vessel. The o-ring is positioned on the bushing above the thread for a positive seal. The vessels are useful for pressure reactions and applications such as polymerization and analysis of halogens by thermal decomposition in the presence of lime. Complete units supplied with bushing and FKM o-ring. Pressurized glassware should always be used behind adequate safety shielding.

Complete Cylindrical Apparatus

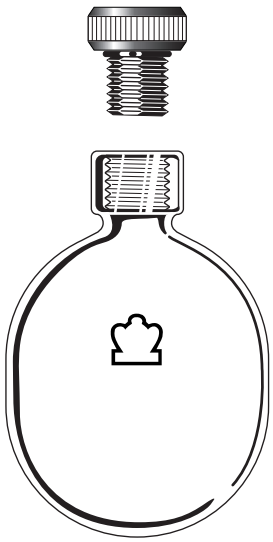
Kontes Article No.	Approx. O.D. x Overall Length (mm)	Cap. (mL)	Bushing Size	Case Qty.	Case Price
767210-0015	25.4 x 114	15	15	1	50.20
767210-0035	25.4 x 190	35	15	1	50.88
767210-0038	25.4 x 215	38	15	1	51.29
767210-0048	38 x 114	48	15	1	67.48
767210-0100	38 x 190	100	15	1	68.43
767210-0120	38 x 215	120	15	1	72.50

Complete Round Bottom Apparatus

Kontes Article No.	Approx. O.D. x Overall Length (mm)	Cap. (mL)	Bushing Size	Case Qty.	Case Price
767250-0075	52 x 102	75	15	1	73.17
767255-0075	52 x 102	75	25	1	95.22
767250-0150	63.5 x 117	150	15	1	76.99
767255-0150	63.5 x 117	150	25	1	76.99
767250-0350	82.5 x 142	350	15	1	87.89
767255-0350	82.5 x 142	350	25	1	110.05

Glass Cylindrical Pressure Vessels Only

Kontes Article No.	Approx. O.D. x Overall Length (mm)	Cap. (mL)	Bushing Size	Case Qty.	Case Price
767300-0015	25.4 x 102	15	15	1	23.00
767300-0035	25.4 x 178	35	15	1	23.68
767300-0038	25.4 x 203	38	15	1	23.95
767300-0048	38 x 102	48	15	1	40.54
767300-0100	38 x 178	100	15	1	41.49
767300-0120	38 x 203	120	15	1	45.71



767250
767255

Glass Round Bottom Pressure Vessels Only

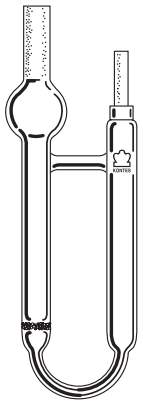
Kontes Article No.	Approx. O.D. x Overall Length (mm)	Cap. (mL)	Bushing Size	Case Qty.	Case Price
767350-0075	52 x 102	75	15	1	46.38
767355-0075	52 x 102	75	25	1	76.19
767350-0150	63.5 x 117	150	15	1	50.20
767355-0150	63.5 x 117	150	25	1	50.20
767350-0350	82.5 x 142	350	15	1	61.49
767355-0350	82.5 x 142	350	25	1	91.96

SAFETY NOTE: Pressure vessels are tested at 150 psig which is approximately two and one-half times recommended working pressure. We do not guarantee for breakage under pressure due to the nature of glass and conditions beyond our control. We always recommend that pressurized glassware be used behind adequate safety shielding.

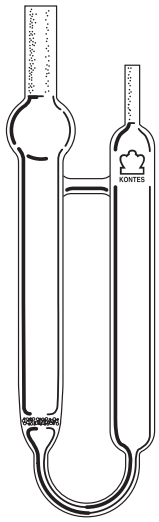
Sparger, U-Shaped

These U-shaped spargers are specially designed for use with Tekmar® 2000 and 3000 Purge and Trap Concentrators and with the 2016 and 2032 Autosamplers. Fritted spargers are recommended for potable water and wastewater samples. Fritless spargers are recommended for water, soils, polymers, pharmaceuticals and foods.

Kontes Article No.	Description	Case Qty.	Case Price
591100-0005	Sparger, Fritless, 5 mL (2000/3000) with 1/2" mount	1	77.81
591100-0025	Sparger, Fritless, 25 mL (2000/3000) with 1/2" mount	1	84.93
591101-0025	Sparger, Fritless, 25 mL (2000/3000) with 3/4" mount	1	84.93
591100-2605	Sparger, Fritted, 5 mL (2000/3000) with 1/2" mount	1	84.93
591101-2605	Sparger, Fritted, 5 mL (2000/3000) with 3/4" mount	1	84.93
591100-2625	Sparger, Fritted, 25 mL (2000/3000) with 1/2" mount	1	91.67
591101-2625	Sparger, Fritted, 25 mL (2000/3000) with 3/4" mount	1	91.67



591100-2605



591100-2625

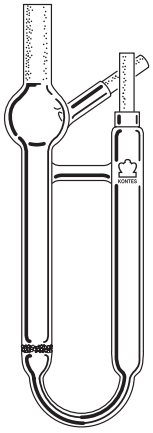
Sparger, U-Shaped, with EPA Method 603

These U-shaped spargers are designed for use on the Tekmar 2000 and 3000 Purge and Trap Concentrators when doing EPA Method 603 and using either an AQUATek 50 or ALS 2050 Vial Autosampler. The introduction stem is located on the foam trap, allowing a sample heater to be placed around the glassware as required by the EPA method.

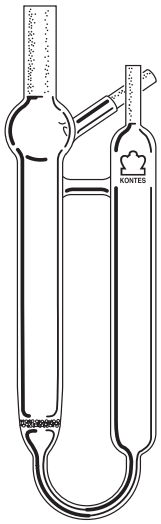
These spargers can also be used when a complete rinse of the sparger is desired, such as applications for soft drinks and juices.

Kontes Article No.	Description	Case Qty.	Case Price
591120-2605	Sparger, Fritted, 5 mL	1	112.28
591120-2625	Sparger, Fritted, 25 mL	1	119.03

Reference: EPA Method 603: "Determination of Acrolein and Acrylonitrile in Municipal and Industrial Discharges Using Purge and Trap Gas Chromatography."



591120-2605

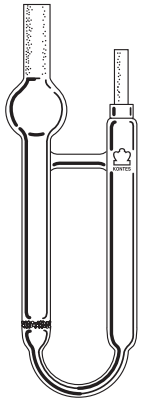


591120-2625

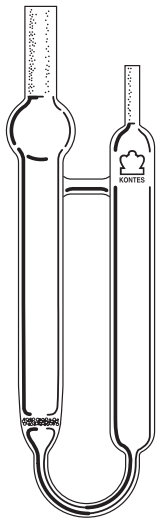
Sparger, U-Shaped

These U-shaped spargers are designed for use with O-I Analytical Purge and Trap Sample Concentrators. Fritted spargers are recommended for potable water and wastewater samples.

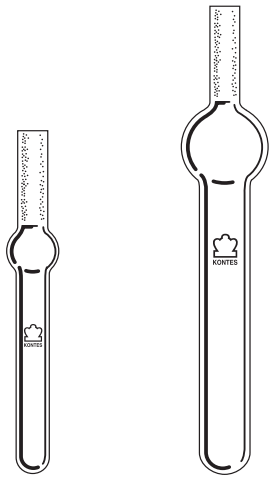
Kontes Article No.	Description	O-I Number	Case Qty.	Case Price
591132-2605	Sparger, Fritted, 5 mL, 18 mm O.D. Neck	209015	1	84.93
591132-2625	Sparger, Fritted, 25 mL, 18 mm O.D. Neck	209031	1	91.67



591132-2605



591132-2625



591150-0005 591150-0025

Sparger, Needle

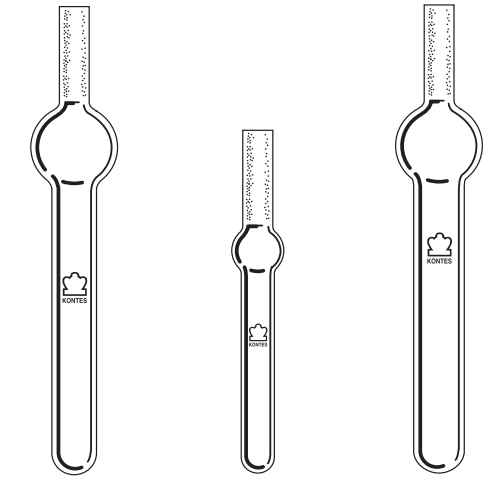
Needle spargers are recommended for purge and trap analysis of slurries, soils, viscous liquids and foaming liquid samples. These spargers are also used for headspace sweep analysis of volatile compounds in oils. Designed for use with Tekmar 2000 and 3000 Purge and Trap Concentrators and 2016 and 2032 Autosamplers.

Kontes Article No.	Description	Case Qty.	Case Price
591150-0005	Sparger, Needle, 5 mL, with 1/2" mount	1	16.50
591150-0025	Sparger, Needle, 25 mL, with 1/2" mount	1	20.61

Sparger, Needle

Needle spargers are recommended for purge and trap analysis of slurries, soils, viscous liquids and foaming liquid samples. These spargers are also used for headspace sweep analysis of volatile compounds in oils. Designed for use with Tekmar 2000 and 3000 Purge and Trap Concentrators and 2016 and 2032 Autosamplers. Analytical Purge and Trap Concentrators.

Kontes Article No.	Description	Case Qty.	Case Price
591151-0025	Sparger, Needle, 25 mL, with 3/4" mount	1	20.61



591151-0025 591155-0005 591155-0025

Sparger, Needle

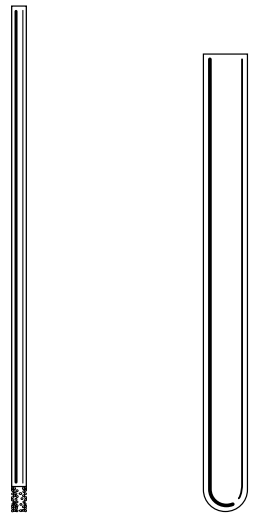
These needle spargers are designed for use with O-I Analytical Purge and Trap Sample Concentrators. Needle spargers are recommended for purge and trap analysis of slurries, soils, viscous liquids and foaming liquid samples.

Kontes Article No.	Description	O-I Number	Case Qty.	Case Price
591155-0005	Sparger, Needle, 5 mL, 12 mm O.D. Neck	187484	1	16.50
591155-0025	Sparger, Needle, 25 mL, 12 mm O.D. Neck	188508	1	20.61
591156-0005	Sparger, Needle, 5 mL, 18 mm O.D. Neck	225623	1	16.50
591156-0025	Sparger, Needle, 25 mL, 18 mm O.D. Neck	225631	1	20.61

Soil Analysis Tube

The 19 mm OD test tubes are designed for use with Tekmar 2016/2032 Autosamplers and 4100/4200 Automatic Samplers that are equipped with 3/4" diameter mounts. The larger opening of these disposable tubes permits easier sample loading and facilitates the weighing of solid and soil samples. The needle purge tubes are recommended for soil and water slurries and for viscous liquids. The fritted purge tubes allow water samples to be purged according to EPA protocols.

Kontes Article No.	Description	Case Qty.	Case Price
591175-0715	Test Tube, 19 x 150 mm	24	45.50
591170-2606	Purge Tube, 6 mm diameter, Fritted (2016/2032)	1	47.89

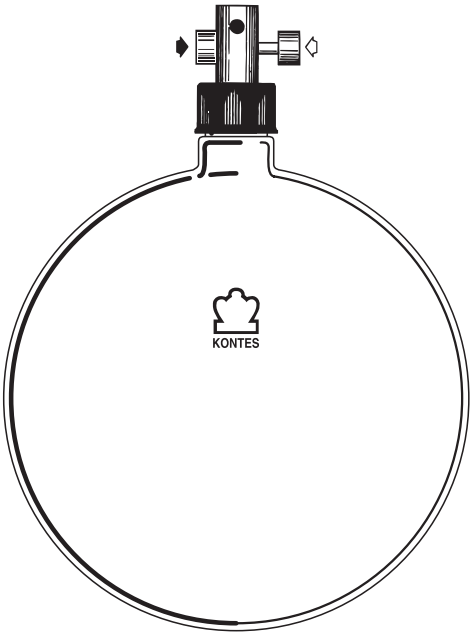


591170 591175

Static Dilution Bottle, Purge and Trap

The Static Dilution Bottle is a simple, inexpensive means to prepare, store and use standards of volatile organic compounds. Standards are prepared by injecting a small quantity of the pure compounds into the bottle and fully evaporating them with heating. Sample aliquots are withdrawn using a gas-tight syringe. Standards prepared by this method are stable for up to one week.

Kontes Article No.	Description	Case Qty.	Case Price
591190-2000	Static Dilution Bottle with Mininert™ Valve	1	102.69
Replacement Parts			
591191-2000	Static Dilution Bottle Only, 2 liter	1	66.09
749110-0024	Mininert Valve, with 24-410 Thread	1	11.51
749112-0000	Septa for Mininert Valve, 50/pkg.	50	59.94
Accessories			
749113-0000	Septum Installation Tool for Mininert Valve	1	42.35
791170-0020	Stir Bar, Egg Shaped, 3/8" x 3/4", PTFE-Coated	1	10.98



591190

SAFETY 1st

Equipped with Hot Surface Safety Lights



See the CIMAREC Digital Stirring Hot Plates listed in the ***STIRRERS*** section.

Kontes Art. No. 790950

Blocks Harmful UV Light

Red-tinted glassware blocks harmful UV.



25057



17033F



26610



29052F



28016

Buret, Straight Bore PTFE Stopcock, with Dust Cap, Class B, RAY-SORB®

KIMAX buret with a size 2 PTFE plug. RAY-SORB processed to protect liquids sensitive to light of shorter wave lengths. KIM-KAP dust cap is included. Scale is durable, opaque white ceramic enamel. **Replacement stopcock is 41500F-2.**

Kimble Article No.	Capacity (mL)	Subdivision (mL)	±Tol. (mL)	Approx. Length (mm)	KIM-KAP Size (mm)	Case Qty.	Case Price
17033F-50	50	0.10	0.10	738	16	1	153.28

Boiling Flask, Flat Bottom, Short Neck, Full Length 24/40 Joint, RAY-SORB®

KIMAX boiling flask is RAY-SORB processed to provide protection to solutions sensitive to light of the shorter wavelengths. Designed from ASTM Specification E 1403, Type I, Class 4 requirements.

Kimble Article No.	Capacity (mL)	Approx. Height (mm)	Approx. O.D. (mm)	Case Qty.	Case Price
25057-250	250	133	83	1	73.32

Erlenmeyer Flask, Color-Coded PTFE Stopper, RAY-SORB®

KIMAX flask RAY-SORB processed to protect solutions sensitive to light of the shorter wavelengths. Designed from ASTM Specification E 1404, Type II, Class 2 requirements. Without a capacity scale. **Replacement stopper is 41901R.**

Kimble Article No.	Capacity (mL)	Stopper	Approx. Widest Dia. (mm)	Approx. Height (mm)	Case Qty.	Case Price
26610-50	50	19	50	76	1	54.50
26610-125	125	22	66	118	1	58.75
26610-250	250	27	82	132	1	64.45
26610-500	500	32	102	159	1	61.15

Separatory Funnel , Squibb, Pear-Shaped, Color-Coded PTFE Stopper, with PTFE Stopcock, RAY-SORB®

KIMAX funnel is supplied with a PTFE stopper and a PTFE stopcock. Lower stems have an I.D. large enough that a column of liquid will “break” with the stopcock closed, thereby giving a more complete separation and eliminating the necessity of emptying the funnel. RAY-SORB processed to protect materials sensitive to the light of shorter wavelengths. Designed from ASTM Specification E1096, Type 4 requirements. **Replacement stopcock is 41500F. Replacement stopper is 41901R .**

Kimble Article No.	Capacity (mL)	Stopcock Size	Stopper	Handle Color	Length of Stem (mm)	Case Qty.	Case Price
29052F-125	125	2	22	Yellow	60	1	141.73
29052F-250	250	4	22	Yellow	60	1	156.22
29052F-500	500	4	27	Red	60	1	184.32

Volumetric Flask, Class A, with Color-Coded PTFE Stopper, RAY-SORB®

KIMAX flask is RAY-SORB processed to protect solutions sensitive to light of the shorter wavelengths. Calibrated to contain. With a marking spot. Supplied with a PTFE stopper having a color-coded handle. Designed from ASTM Specification E288, Class A unserialized requirements. **Replacement stopper is 41901R .**

Kimble Article No.	Capacity (mL)	±Tol. (mL)	Stopper	Handle Color	Approx. Height with Stopper (mm)	Shelf-Pack Qty.	Case Qty.	Case Price
28016-10	10	0.02	9	Black	103	-	12	360.84
28016-25	25	0.03	9	Black	118	6	12	413.40
28016-50	50	0.05	9	Black	148	6	12	469.80
28016-100	100	0.08	13	Orange	180	6	12	470.40
28016-200	200	0.10	16	Blue	225	6	12	476.16
28016-250	250	0.12	16	Blue	250	6	12	577.68
28016-500	500	0.20	19	Green	287	6	12	1,109.52
28016-1000	1000	0.30	22	Yellow	338	1	6	687.60

See the ***TECHNICAL INFORMATION*** section for additional information on the UV absorbing performance of RAY-SORB.

Choose RAY-SORB® processed, KIMAX® flasks for your light-sensitive contents. These heavy-duty, wide-mouth flasks are available with glass, PTFE or PE stoppers . . . or buy only the flasks if you already have stoppers on hand.

- Pipet access is easy with wide-mouth volumetric flasks
- Superior strength, durability and safety from heavy, uniform walls
- Quick identification with large, permanent, easy-to-read, markings
- Flat interior bottoms for stirring with standard stir bars
- Accuracy - graduated to Class A volumetric tolerances

RAY-SORB® Volumetric Flasks with Glass ℔ Stoppers

Kimble Article No.	Cap. (mL)	±Tol. (mL)	℔ Stopper	Approx. Height with Stopper (mm)	Case Qty.	Case Price
92822G-5	5	0.08	13	97	6	154.20
92822G-10	10	0.08	13	100	6	165.60
92822G-20	20	0.08	13	130	6	170.40
92822G-25	25	0.08	13	130	6	170.40
92822G-50	50	0.08	13	150	6	184.20
92822G-100	100	0.10	16	180	6	250.50
92822G-200	200	0.20	19	223	6	273.60
92822G-250	250	0.20	19	248	6	288.00
92822G-500	500	0.20	19	283	6	339.00
92822G-1000	1000	0.30	22	335	1	107.15
92822G-2000	2000	0.50	27	395	1	155.25

RAY-SORB processed flasks protect contents from short-length lightwaves. They are made from KIMAX KG-33 borosilicate glass, the same as our clear flasks, and then RAY-SORB processed to protect your light-sensitive contents.

NEW! Expanded Product Offering



92822G

RAY-SORB® Volumetric Flasks with PTFE ℔ Stoppers

Kimble Article No.	Stopper Handle Color	Cap. (mL)	±Tol. (mL)	℔ Stopper	Approx. Height with Stopper (mm)	Case Qty.	Case Price
92822F-5	Orange	5	0.08	13	94	6	154.20
92822F-10	Orange	10	0.08	13	97	6	165.60
92822F-20	Orange	20	0.08	13	127	6	170.40
92822F-25	Orange	25	0.08	13	127	6	170.40
92822F-50	Orange	50	0.08	13	147	6	184.20
92822F-100	Blue	100	0.10	16	175	6	250.50
92822F-200	Green	200	0.20	19	217	6	273.60
92822F-250	Green	250	0.20	19	269	6	288.00
92822F-500	Green	500	0.20	19	300	6	339.00
92822F-1000	Yellow	1000	0.30	22	328	1	107.15
92822F-2000	Red	2000	0.50	27	392	1	155.25



92822F

RAY-SORB® Volumetric Flasks with Polyethylene ℔ Stoppers

Kimble Article No.	Cap. (mL)	±Tol. (mL)	℔ Stopper	Approx. Height with Stopper (mm)	Case Qty.	Case Price
92822P-5	5	0.08	13	102	6	151.20
92822P-10	10	0.08	13	105	6	162.60
92822P-20	20	0.08	13	135	6	167.40
92822P-25	25	0.08	13	135	6	167.40
92822P-50	50	0.08	13	155	6	181.20
92822P-100	100	0.10	16	187	6	247.50
92822P-200	200	0.20	19	227	6	270.60
92822P-250	250	0.20	19	252	6	285.00
92822P-500	500	0.20	19	287	6	336.00
92822P-1000	1000	0.30	22	340	1	106.65
92822P-2000	2000	0.50	27	400	1	154.75



92822P

RAY-SORB® Volumetric Flasks Without Stoppers

Kimble Article No.	Cap. (mL)	±Tol. (mL)	℔ Stopper Size	Approx. Height Without Stopper (mm)	Case Qty.	Case Price
92822N-5	5	0.08	13	77	6	146.70
92822N-10	10	0.08	13	80	6	158.10
92822N-20	20	0.08	13	110	6	162.90
92822N-25	25	0.08	13	110	6	162.90
92822N-50	50	0.08	13	130	6	176.70
92822N-100	100	0.10	16	160	6	243.00
92822N-200	200	0.20	19	200	6	266.10
92822N-250	250	0.20	19	225	6	280.50
92822N-500	500	0.20	19	260	6	331.50
92822N-1000	1000	0.30	22	310	1	105.90
92822N-2000	2000	0.50	27	370	1	154.00



92822N

Recovery Flask, Heavy Wall with Standard Joint Bead

Single neck flask with a ⅋ outer joint designed for easy recovery of reaction products. Total contents are accessible with a spatula or policeman. Lower portion fits standard heating mantles. Even wall thickness and minimum runout make this flask ideal for use with Rotary Evaporators.

Even wall thickness and minimum runout make these flasks ideal for use with rotary evaporators.



294300
294305
608675

Kontes Article No.	Capacity (mL)	⅋ Joint	Approx. Dia. (mm)	Case Qty.	Case Price
294300-0010	10	14/20	31	1	19.18
294305-0010	10	19/22	31	1	19.33
294300-0025	25	14/20	42	1	19.18
294305-0025	25	19/22	42	1	19.33
294300-0050	50	14/20	48	1	19.18
294305-0050	50	19/22	48	1	19.33
608675-0124	50	24/25	48	1	25.04
294300-0100	100	14/20	60	1	19.97
294305-0100	100	19/22	60	1	20.08
608675-0224	100	24/25	60	1	25.60
608675-0229	100	29/26	60	1	27.05
294300-0200	200	14/20	76	1	25.84
608675-0324	200	24/25	76	1	32.96
608675-0329	200	29/26	76	1	34.30
608675-0624	500	24/25	102	1	47.47
608675-0629	500	29/26	102	1	50.74
608675-0729	1000	29/26	130	1	64.51
608675-0829	2000	29/26	161	1	88.65

Recovery Flask, Heavy Wall, with Square Joint Bead

Single neck flask with a square bead, ⅋ outer joint designed for easy recovery of reaction products. Total contents are accessible with a spatula or policeman. Lower portion fits standard heating mantles. Even wall thickness and minimum runout make this flask ideal for use with Rotary Evaporators.

Square bead provides superior clamping.



608675

Kontes Article No.	Capacity (mL)	⅋ Joint	Approx. Dia. (mm)	Case Qty.	Case Price
608675-4124	50	24/40	48	1	24.45
608675-6129	50	29/42	48	1	25.58
608675-4224	100	24/40	60	1	24.83
608675-6229	100	29/42	60	1	25.68
608675-4324	200	24/40	76	1	30.53
608675-6329	200	29/42	76	1	30.32
608675-4624	500	24/40	102	1	47.47
608675-6629	500	29/42	102	1	41.16
608675-4724	1000	24/40	130	1	59.95
608675-6729	1000	29/42	130	1	63.61
608675-4824	2000	24/40	161	1	84.44
608675-6829	2000	29/42	161	1	83.47

Recovery Flask, Heavy Wall, with Square Joint Bead and Plastic Safety Coating

Single neck flask with a ⅋ outer joint designed for easy recovery of reaction products. Total contents are accessible with a spatula or policeman. Lower portion fits standard heating mantles.

Square bead provides superior clamping.



608685

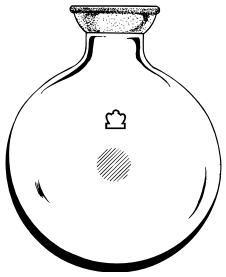
Kontes Article No.	Capacity (mL)	⅋ Joint	Case Qty.	Case Price
608685-4124	50	24/40	1	31.72
608685-4224	100	24/40	1	33.27
608685-4324	200	24/40	1	44.90
608685-4624	500	24/40	1	59.25
608685-4724	1000	24/40	1	72.10

See additional safety products in the ***SAFETYWARE*** section.

Round Bottom, Boiling, with $ Joint, Heavy Wall

Single neck flask with a $ socket joint. Useful as rotary evaporator condensate collection flask or as a replacement for European designation KS 20/35.

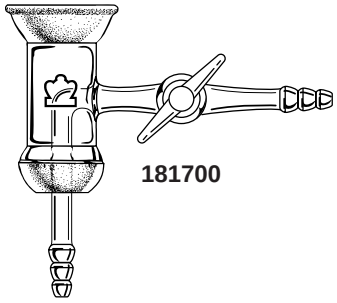
Kontes Article No.	Capacity (mL)	$ Joint	Approx Dia. (mm)	Case Qty.	Case Price
601050-0128	50	28/15	48	1	29.46
601050-0136	50	35/25	48	1	30.15
601050-0228	100	28/15	60	1	29.46
601050-0235	100	35/20	60	1	29.46
601050-0236	100	35/25	60	1	30.01
601050-0428	250	28/15	83	1	30.15
601050-0436	250	35/25	83	1	32.70
601050-0536	300	35/25	87	1	31.99
601050-0628	500	28/15	102	1	31.64
601050-0635	500	35/20	102	1	34.64
601050-0636	500	35/25	102	1	41.10
601050-0728	1000	28/15	130	1	38.83
601050-0735	1000	35/20	130	1	41.63
601050-0736	1000	35/25	130	1	50.07
601050-0828	2000	28/15	161	1	65.60
601050-0835	2000	35/20	161	1	71.55
601050-0836	2000	35/25	161	1	71.55
601050-0850	2000	50/30	161	1	80.72
601050-0928	3000	28/15	185	1	75.07
601050-0935	3000	35/20	185	1	84.10
601050-0936	3000	35/25	185	1	84.37
601050-0950	3000	50/30	185	1	88.81
601050-1028	5000	28/15	221	1	105.34
601050-1036	5000	35/25	221	1	110.46
601050-1050	5000	50/30	221	1	120.98
601050-1065	5000	65/40	221	1	125.66
601050-1150	12000	50/30	295	1	173.59
601050-1165	12000	65/40	295	1	170.65
601050-1250	22000	50/30	347	1	305.56
601050-1265	22000	65/40	347	1	305.56



601050



601055



181700

Boiling, Round Bottom, $ Joint, Plastic Safety Coating, Heavy Wall

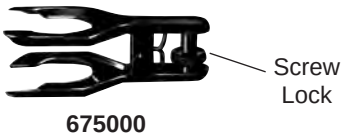
Single neck flask with a $ socket joint. Useful as rotary evaporator condensate collection flask or as a replacement for European designation KS 20/35.

Kontes Article No.	Capacity (mL)	$ Joint	Approx. Dia. (mm)	Case Qty.	Case Price
601055-0236	100	35/20	60	1	38.52
601055-0436	250	35/25	83	1	52.19
601055-0636	500	35/25	102	1	62.51
601055-0736	1000	35/25	130	1	84.82
601055-0836	2000	35/25	161	1	93.55

Intake Adapter

The “Rizzo Adapter” was developed by Mr. John Rizzo of MediChem Research, Inc. as an accessory item for rotary evaporators having $ 35/25 ball and socket joints on their condenser and recovery flasks. The main advantage of this design is to allow ‘sipping’ of solutions from a rotary evaporator into a distillation flask without removal of the flask. This adapter makes the ‘sipping’ option possible on most standard rotary evaporators at a significantly lower cost compared to the cost for this option on a new purchase. The adapter is positioned between the condenser and recovery flask with the stopcock oriented to the left. An 18” length of PTFE tubing (not supplied) is required for connection to the upper #1 hose connection and is fed through the assembly into the distillation flask. When product is to be added to the distillation flask, the 4 mm stopcock is opened allowing addition via tubing connected to a sample container.

Kontes Article No.	$ Joint	Case Qty.	Case Price
181700-3525	35/25	1	133.12

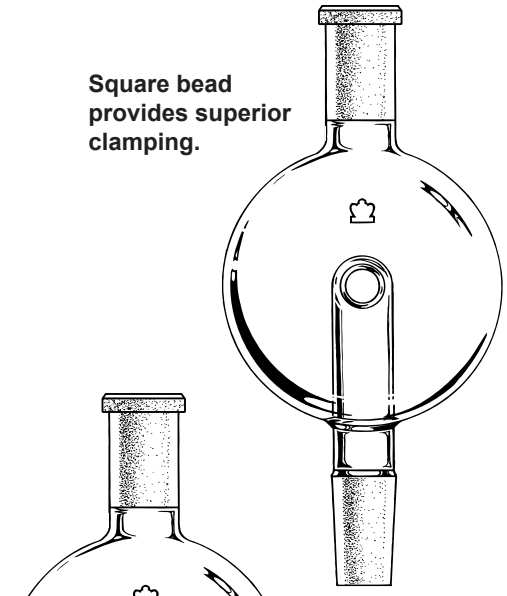


675000

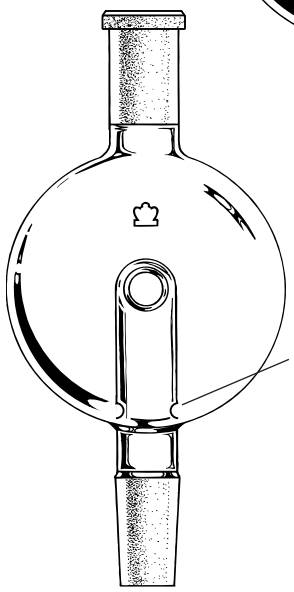
$ Pinch Clamps for Flasks

Used to assemble component parts of $ spherical and o-ring connector arms. The size corresponds to the ball diameter, the first figure in designating the size of a $ joint. Screw lock included.

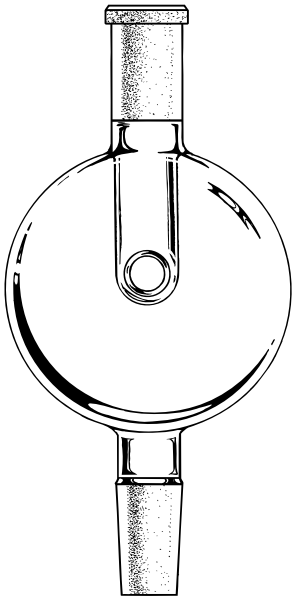
Kontes Article No.	Size	Case Qty.	Case Price
675000-0028	28	1	16.08
675000-0035	35	1	19.36
675000-0050	50	1	49.39
675000-0065	65	1	68.47



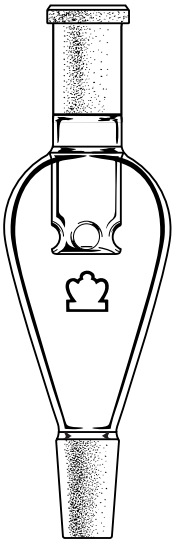
570260



570265



570280



570300

Trap, Bottom Vapor Tube, Square Joint Bead

Designed for use between flask and rotary evaporator to reduce carry-over from foaming or bumping. No drain holes assure that dry residue does not get re-wetted. The modified joint features a square bead for better sealing to rotary evaporator equipment.

Kontes Article No.	Capacity (mL)	Bottom Inner Joint	Top Outer Joint	Approx. Overall Height (mm)	Case Qty.	Case Price
570260-0114	100	14/20	24/40	160	1	92.63
570260-0124	100	24/40	24/40	180	1	93.65
570260-2514	250	14/20	24/40	185	1	93.65
570260-2524	250	24/40	24/40	205	1	95.60
570260-5024	500	24/40	24/40	220	1	97.23

Trap, Bottom Vapor Tube, Square Joint Bead, Drain Holes

Use where foaming is likely to occur and be drawn into the condenser. The inner vapor tube features two, 4 mm drain holes at its base placed 180° to each other and 90° to the upper holes allowing faster drainage of trap contents back into the evaporation flask. The modified joint features a square bead for beter sealing to rotary evaporator equipment.

Kontes Article No.	Capacity (mL)	Bottom Inner Joint	Top Outer Joint	Approx. Overall Height (mm)	Case Qty.	Case Price
570265-0114	100	14/20	24/40	160	1	105.70
570265-0124	100	24/40	24/40	180	1	105.70
570265-2514	250	14/20	24/40	185	1	108.33
570265-2524	250	24/40	24/40	205	1	108.33
570265-5024	500	24/40	24/40	220	1	110.92

Trap, Top Vapor Tube, Square Joint Bead

Design provides for expanded volume for organic mixtures that have a tendency to foam excessively. Inner vapor tube is ring-sealed at the top of the flask to prevent entry into the condenser. The modified joint features a square bead for better sealing to rotary evaporator equipment.

Kontes Article No.	Capacity (mL)	Bottom Inner Joint	Top Outer Joint	Approx. Overall Height (mm)	Case Qty.	Case Price
570280-0114	100	14/20	24/40	170	1	97.23
570280-0124	100	24/40	24/40	190	1	99.17
570280-2524	250	24/40	24/40	210	1	100.82
570280-5024	500	24/40	24/40	230	1	102.78

Trap, Top Vapor Tube, Self-Washing, Square Joint Bead

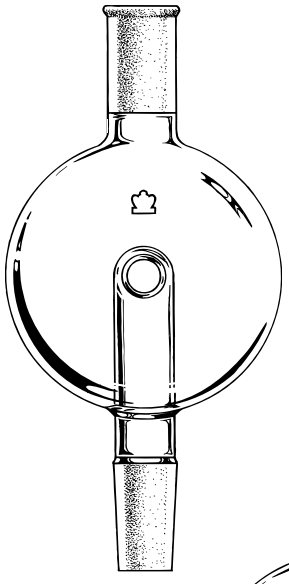
Designed to eliminate hold up common to the round style of rotary evaporator traps. Tapered sidewalls permit continuous washing with condensed solvent while preventing vapor cooling points along the path of the condenser. The upper stem has 4 large holes that allow solvent vapor to flow freely and helps to make this portion of the trap easy to clean. The increased volume of the trap prevents “bumping” and keeps solvent out of the vapor tube.

Kontes Article No.	Capacity (mL)	Bottom Inner Joint	Top Outer Joint	Case Qty.	Case Price
570300-0114	100	14/20	24/40	1	105.58
570300-0124	100	24/40	24/40	1	107.08
570300-2524	250	24/40	24/40	1	113.04

Trap, Bottom Vapor Tube

Designed for use between vapor tube and flask on rotary evaporator to reduce carry-over from foaming or bumping. No drain holes assure that dry residue does not get "re-wetted".

Kontes Article No.	Capacity (mL)	Bottom Inner Joint	Top Outer Joint	Approx. Overall Height (mm)	Case Qty.	Case Price
570200-0114	100	14/20	24/40	160	1	92.63
570200-0119	100	19/22	24/40	160	1	92.63
570200-0124	100	24/40	24/40	180	1	93.65
570200-2514	250	14/20	24/40	185	1	93.65
570200-2519	250	19/22	24/40	185	1	93.65
570200-2524	250	24/40	24/40	205	1	95.60
570200-5014	500	14/20	24/40	200	1	95.60
570200-5024	500	24/40	24/40	220	1	97.23

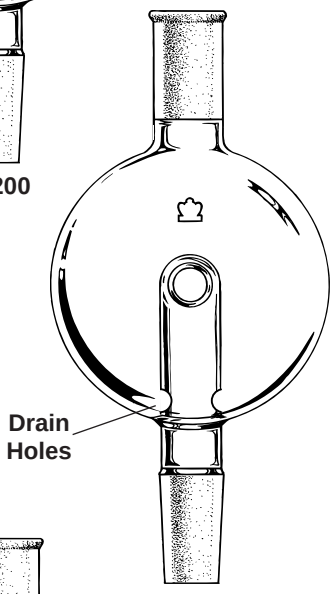


570200

Trap, Bottom Vapor Tube, Drain Holes

Use where foaming is likely to occur and be drawn into the condenser. With an inner vapor tube at the bottom. The inner tube features two, 4 mm drain holes at its base placed 180° to each other and 90° to the upper holes allowing faster drainage of trap contents back into the evaporation flask.

Kontes Article No.	Capacity (mL)	Bottom Inner Joint	Top Outer Joint	Approx. Overall Height (mm)	Case Qty.	Case Price
570205-0114	100	14/20	24/40	160	1	105.70
570205-0124	100	24/40	24/40	180	1	105.70
570205-2514	250	14/20	24/40	185	1	108.33
570205-2524	250	24/40	24/40	205	1	108.33

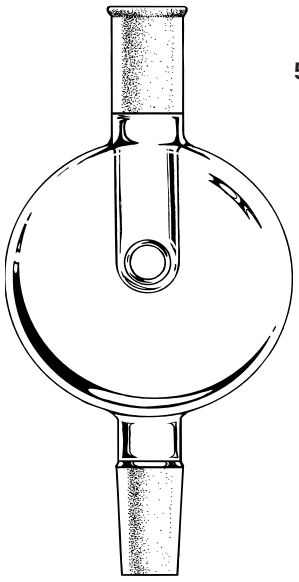


570205

Trap, Top Vapor Tube

Design provides for expanded volume for organic mixtures that have a tendency to foam excessively. Inner vapor tube is ring-sealed at the top of the flask to prevent entry into the condenser.

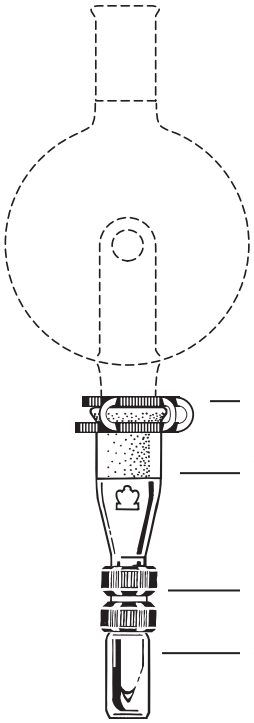
Kontes Article No.	Capacity (mL)	Bottom Inner Joint	Top Outer Joint	Approx. Overall Height (mm)	Case Qty.	Case Price
570210-0114	100	14/20	24/40	170	1	97.23
570210-0119	100	19/22	24/40	170	1	97.23
570210-0124	100	24/40	24/40	190	1	99.17
570210-2514	250	14/20	24/40	190	1	99.17
570210-2519	250	19/22	24/40	190	1	99.17
570210-2524	250	24/40	24/40	210	1	100.82
570210-5014	500	14/20	24/40	210	1	100.82
570210-5024	500	24/40	24/40	230	1	102.78
570210-1024	1000	24/40	24/40	245	1	106.04



570210

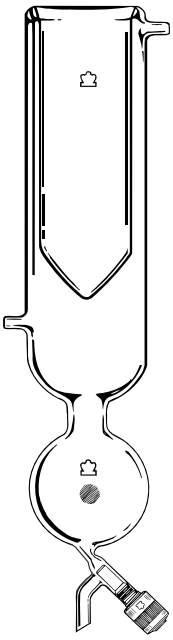


166600



10 Connector Kit

747205-0000



926910

Bump Trap, Fritted

Trap has a coarse fritted disc sealed between the lower inner and top outer joint to prevent contents of the flask from entering into the condenser in the event of bumping. All traps have a ⅋ 24/40 top outer joint and the listed size of the lower inner joint.

Kontes Article No.	Lower Inner ⅋ Joint Size	Disc Dia., (mm)	Disc Porosity	Approx. Overall Length (mm)	Case Qty.	Case Price
166600-0314	14/20	20	coarse	100	1	68.29
166600-0319	19/22	20	coarse	130	1	68.29
166600-0324	24/40	20	coarse	105	1	70.85

Vial Adapter Systems

Connect standard rotary evaporator traps to vials with 13-425 or 20-400 GPI threads. The necessary components are listed below and must be ordered separately.

Vial Connecting Adapters, Glass

Kontes Article No.	GPI Thread Size	⅋ Joint	Approx. Overall Height (mm)	Case Qty.	Case Price
747130-1314	13-425	14/20	50	1	19.71
747130-1319	13-425	19/22	50	1	19.71
747130-1324	13-425	24/40	70	1	20.75
747130-2014	13-425	14/20	50	1	19.71
747130-2019	20-400	19/22	50	1	19.71
747130-2024	20-400	24/40	70	1	20.75

Glass Filled Nylon Connectors with PTFE Seals

747205-1313	13-425 to 13-425	1	12.27
747205-1315	13-425 to 15-425	1	13.18
747205-1320	13-425 to 20-400	1	13.18
747205-1520	15-425 to 20-400	1	11.66
747205-1820	18-400 to 20-400	1	12.00
747205-2020	20-400 to 20-400	1	12.27
747205-2022	20-400 to 22-400	1	13.76
747205-2024	20-400 to 24-400*	1	13.76

Connector Kit

747205-0000	**Connector kit** with ten connectors, one each of the following sizes, 8-425 to 8-425, 8-425 to 13-425, 13-425 to 13-425, 13-425 to 15-425, 13-425 to 20,400, 15-425 to 20,400, 18-400 to 20-400, 20-400 to 20-400, 20-400 to 22-400, 20-400 to 24-400	10	94.63

*24-400 cap is black polypropylene

Clamps, Polyacetal

675300-0014	14/20, 14/35, Yellow	12	37.72
675300-0019	19/22, 19/38, Blue	12	38.46
675300-0024	24/40, 24/25, Green	12	39.53

Typical Receivers (Note: Any standard vial with 13-425 or 20-400 GPI threads can be used.)

60700-1	ACCUFORM® Vial, 1 mL, 13-425	12	100.60
60700-3	ACCUFORM® Vial, 3 mL, 20-400	12	107.18
60700-5	ACCUFORM® Vial, 5 mL, 20-400	12	117.33
60700-10	ACCUFORM® Vial, 10 mL, 20-400	12	134.12

*24-400 cap is black phenolic

Vacuum Trap, Large Volume Dewar-Type

Designed for large volume solvent removal. Inner chamber is for use with dry ice/acetone. Outer chamber has connections to accept standard flexible 1/2" hose. Lower reservoir has a condensate removal port with a 0-4 mm HI-VAC® valve. PTFE plug is 826601-0004.

Kontes Article No.	Lower Reservoir Cap. (mL)	Vacuum Connection	Inner Chamber Approx. I.D. x Depth (mm)	Approx. Overall Height x Width (mm)	Case Qty.	Case Price
926910-0250	250	1/2"	59 x 230 mm	440 x 145 mm	1	296.23
926910-0500	500	1/2"	75 x 275 mm	515 x 170 mm	1	484.14
926910-1000	1000	1/2"	95 x 330 mm	645 x 190 mm	1	512.86

Freeze Drying Apparatus

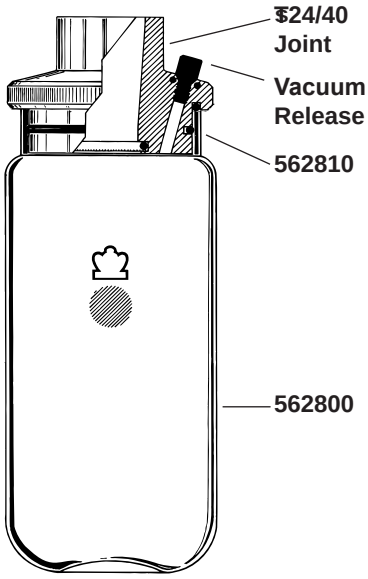
Rotary Evaporator Adapter

Polyethylene unit with a ⅀ 24/40 outer joint and a vacuum release, adapts 562800 freeze dry flasks to rotary evaporators for concentration or removal of solvent from single or multiple samples. A vacuum-tight seal is assured through the use of double FKM o-rings. A special PTFE screen is provided to prevent loss of material.

Kontes Article No.	⅀ Joint	Case Qty.	Case Price
562810-2440	24/40	1	91.67

Replacement Parts

758252-0008	Plug Seal, Size 008, Pkg./10	10	14.30
758252-0118	Screen Retainer, Size 118, Pkg./10	10	25.12
758252-0140	Rim Seal, Size 140, Pkg./10	10	65.74
758252-0226	Shaft Seal, Size 226, Pkg./5	5	46.96

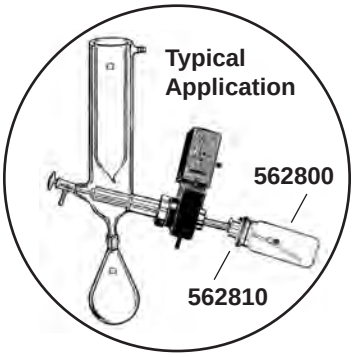


Rotary Evaporator Assembly with 562810 Adapter and 562800 Flask

Flask Only

Thick wall borosilicate glass flask has an extra wide opening for easy access to the sample. Base is formed so that the unit is free standing, requiring no special support. This flask may be used with rotary evaporators or removable vacuum hose by selecting the appropriate adapter listed below.

Kontes Article No.	Capacity (mL)	Approx. Overall Height (mm)	Approx. O.D. (mm)	Case Qty.	Case Price
562800-0250	250	105	75	1	88.14
562800-0500	500	175	75	1	94.51
562800-1000	1000	200	100	1	108.73
562800-2000	2000	280	120	1	157.77



Vacuum Adapter

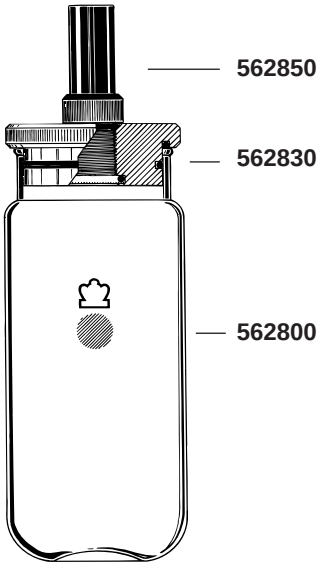
Polyethylene vacuum adapter for 562800 freeze dry flasks allows connection to a vacuum system with either 1/2" (12.7 mm) or 3/4" (19.1 mm) I.D. hose. This unit also employs the same double FKM o-ring seal and special PTFE screen found in 562810, but does not include the 562850 hose adapters listed below.

Kontes Article No.	Case Qty.	Case Price
562830-0000	1	70.35

Hose Adapter

For connection to vacuum hose and a 562830 vacuum adapter. 1/2" (12.7 mm) I.D. size will fit 3/4" (19.1 mm) I.D. hose; 5/16" (7.9 mm) I.D. will accept 1/2". Supplied with a size 018 FKM o-ring.

Kontes Article No.	Adapter I.D.	Description	Case Qty.	Case Price
562850-0012	1/2"	For Hose with 3/4" I.D.	1	27.71
562850-0516	5/16"	For Hose with 1/2" I.D.	1	27.71



Vacuum Assembly

Screened In Colors – Blue, Green, Yellow and Red!

SAFETY 1st

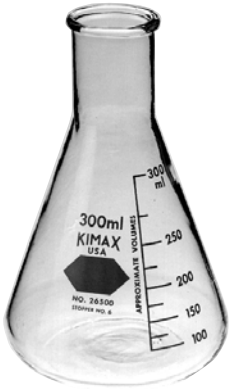
Griffin, Low Form, Color, with Double Capacity Scale



Made of KIMAX KG-33 glass. All sizes have a durable, color, matte finish marking area for use with an ordinary pencil. An easy-to-read graduated scale in color is provided on all sizes. Designed from ASTM Specification E960, Type I requirements.

——— Kimble Article Nos. ———									
Bright **Blue**	Cool **Green**	Sunny **Yellow**	Raging **Red**	Capacity **(mL)**	Grad. Interval **(mL)**	Subdiv. **(mL)**	Approx. O.D. x Height **(mm)**	Case **Qty.**	Case **Price**
14000B-50	14000G-50	14000Y-50	14000R-50	50	10 to 40	10	41 x 53	12	36.24
14000B-100	14000G-100	14000Y-100	14000R-100	100	20 to 80	10	50 x 71	12	38.25
14000B-150	14000G-150	14000Y-150	14000R-150	150	20 to 140	20	57 x 79	12	36.62
14000B-250	14000G-250	14000Y-250	14000R-250	250	25 to 200	25	68 x 88	12	36.62
14000B-400	14000G-400	14000Y-400	14000R-400	400	25 to 325	25	77 x 106	12	43.03
14000B-600	14000G-600	14000Y-600	14000R-600	600	50 to 500	50	88 x 122	6	27.43
14000B-1000	14000G-1000	14000Y-1000	14000R-1000	1000	100 to 1000	50	107 x 145	6	51.53

Erlenmeyer, Narrow Mouth, Color



KIMAX flasks for economy and versatility. All flasks have durable, color, ceramic enamel scales to indicate approximate volumes at various levels. Designed from ASTM Specification E1404, Type I, Class 1 requirements.

——— Kimble Article Nos. ———										
Bright **Blue**	Cool **Green**	Sunny **Yellow**	Raging **Red**	Cap. **(mL)**	Grad. Interval **(mL)**	Subdiv. **(mL)**	Rubber Stopper **Size**	Approx. Widest Dia. x Ht. **(mm)**	Case **Qty.**	Case **Price**
26500B-50	26500G-50	26500Y-50	26500R-50	50	20 to 50	10	1	50x78	12	45.00
26500B-125	26500G-125	26500Y-125	26500R-125	125	50 to 125	25	5	66x108	12	42.96
26500B-250	26500G-250	26500Y-250	26500R-250	250	50 to 225	25	6	82x130	12	44.52
26500B-500	26500G-500	26500Y-500	26500R-500	500	100 to 500	50	7	102x174	6	28.08
26500B-1000	26500G-1000	26500Y-1000	26500R-1000	1000	250 to 1000	50	9	128x213	6	45.60

Volumetric, Class A, Color



KIMAX flask with a single graduation ring blasted on the neck, calibrated to contain. A ⅌ ground glass stopper is supplied along with a durable, color, matte finish marking area for use with an ordinary pencil. Designed from ASTM Specification E288, Class A unserialized requirements. **Replacement stopper is 41900R.**

——— Kimble Article Nos. ———									
Bright **Blue**	Cool **Green**	Sunny **Yellow**	Raging **Red**	Capacity **(mL)**	±Tol. **(mL)**	⅌ **Stopper**	Approx. Height With Stopper **(mm)**	Case **Qty.**	Case **Price**
28014B-25	28014E-25	28014Y-25	28014R-25	25	0.03	9	118	6	153.36
28014B-50	28014E-50	28014Y-50	28014R-50	50	0.05	9	148	6	163.56
28014B-100	28014E-100	28014Y-100	28014R-100	100	0.08	13	180	6	174.54
28014B-250	28014E-250	28014Y-250	28014R-250	250	0.12	16	250	6	217.56
28014B-500	28014E-500	28014Y-500	28014R-500	500	0.20	19	287	6	269.88
28014B-1000	28014E-1000	28014Y-1000	28014R-1000	1000	0.30	22	338	1	54.49

Kontes / Guth Beaker, KOOL-GRIP®

Now there's a new, safe alternative to using old-fashioned tongs or gloves to handle beakers filled with hot or dangerous liquids. Heat-resistant borosilicate laboratory glassware with Kool-Grip jackets is the solution every lab worker has been seeking because it provides them with a safe and comfortable grip.

Kontes Article No.	Description	Case Qty.	Case Price
4011-250	KOOL-GRIP Beaker 250 mL	1	13.06
4011-400	KOOL-GRIP Beaker 400 mL	1	13.07
4011-600	KOOL-GRIP Beaker 600 mL	1	14.60
4011-800	KOOL-GRIP Beaker 800 mL	1	14.49



4011

Boiling and Kjeldahl Flasks, Kontes / Guth KOOL-GRIP®

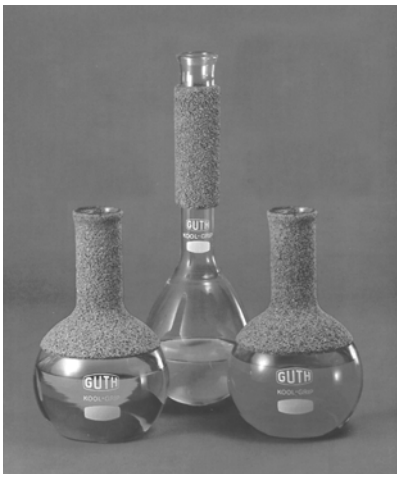
All flasks feature rugged heat insulating cork jackets which are permanently bonded to borosilicate glassware. The texture and composition of the jackets make Kool-Grip flasks comfortable to handle and secure to hold.

KOOL-GRIP Flat Bottom Boiling Flasks

Kontes Article No.	Description	Case Qty.	Case Price
3011-500	KOOL-GRIP Flask 500 mL	1	38.22
3011-1000	KOOL-GRIP Flask 1 L	1	46.57

KOOL-GRIP Kjeldahl Flask

Kontes Article No.	Description	Case Qty.	Case Price
3021-800	KOOL-GRIP Kjeldahl Flask 500 mL	1	58.98

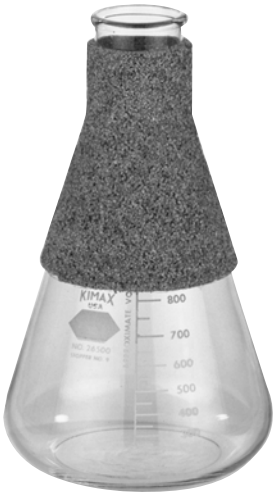


3011
3021

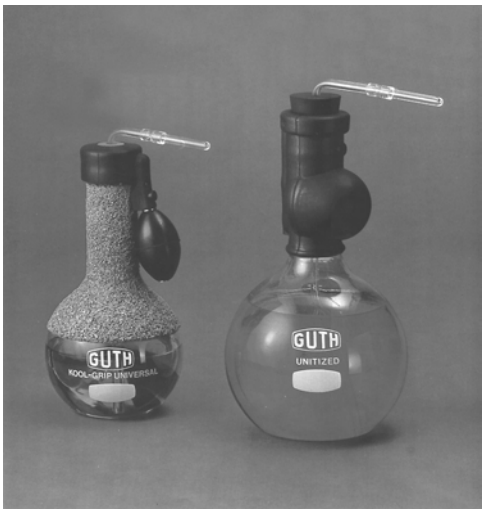
Erlenmeyer Flask, Kontes / Guth KOOL-GRIP®

Designed for safety, cork coating is now available on a limited series of standard graduated Erlenmeyer flasks, Kimble series 26500 with narrow mouth, reinforced beaded top and capacity scale. These flasks feature heat-insulating cork which is permanently bonded to borosilicate glassware making them comfortable to handle and secure to hold.

Kontes Article No.	Description	Case Qty.	Case Price
617800-0250	Flask, Erlenmeyer, 250 mL	1	9.79
617800-0500	Flask, Erlenmeyer, 500 mL	1	11.65
617800-1000	Flask, Erlenmeyer, 1000 mL	1	13.70
617800-2000	Flask, Erlenmeyer, 2000 mL	1	15.39



617800



1051
1011

Wash Bottles, Kontes / Guth

Wash bottles automatically pump a continuous, forceful jet of washing or rinsing liquid that may be instantly stopped as needed. Guth Sanitary Washbottles feature easy one-handed operation, either hand, leaving the other hand free for other needs. Crystal clear glass flasks permit quick inspection of the contents.

KONTES/GUTH Unitized® Washbottles are for use at normal temperatures.

KONTES/GUTH Universal® Washbottles feature a Kool-Grip® jacket and may be used at elevated temperatures (boiling) as well as normal temperatures. Both sanitary automatic washbottles feature borosilicate glass flasks and neoprene parts for improved solvent resistance.

Universal® Washbottles

Kontes Article No.	Description	Case Qty.	Case Price
1051-500	Universal® Washbottle 500mL	1	99.82
1051-1000	Universal® Washbottle 1 L	1	116.48

Unitized® Washbottle

Kontes Article No.	Description	Case Qty.	Case Price
1011	Unitized® Washbottle	1	140.94
Replacement Parts			
1011-A	Unitized® Washbottle Service Kit	1	22.84
1011-D	Unitized® Rubber Bulb and Valves	1	70.37
1011-G	Unitized® Washbottle Delivery Tube Kit	1	12.92
1011-R	Unitized® Washbottle, Flask Only 1 L	1	33.93
1051-B	Aspirator Bulb/Valve	1	9.93
1051-D	Feak® Stopper Only	1	38.40
1051-G	Unitized® Washbottle Delivery Tube Kit 500	1	14.36
1051-500	Guth Universal® Washbottle 500 mL	1	99.82
1051-1000	Guth Universal® Washbottle 1 L	1	116.48
1051-R-500	Universal® Washbottle Flask Only 500 mL	1	44.49
1051-R-1000	Universal® Washbottle Flask Only 1 L	1	52.74
1055	Guth Feak® Fitting 500 mL & 1L	1	54.95
1055-1000	Guth Feak® Fitting 1000 mL	1	54.95

SAFETY 1st

Equipped with Hot Surface Safety Lights



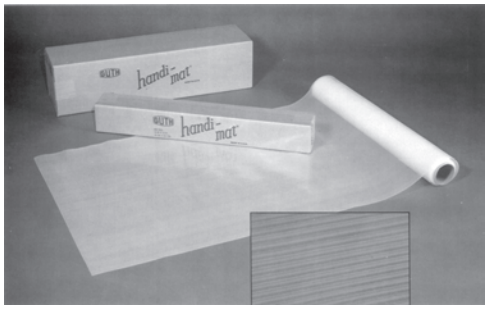
See the CIMAREC Digital Stirring Hot Plates listed in the ***STIRRERS*** section.

Kontes Art. No. 790950

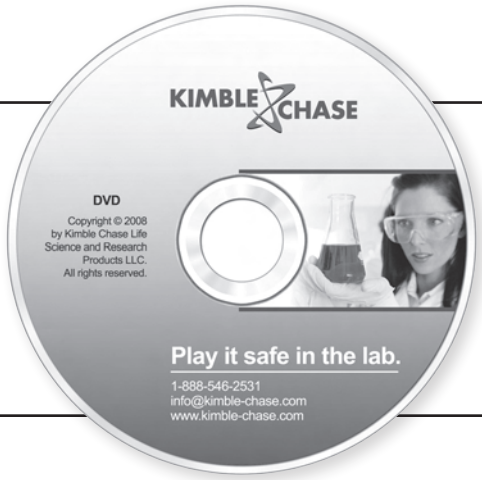
Mat, Guth, Handi-Mat®

Clear ribbed polyethylene mat made of all virgin material promotes safety and cushions work surfaces. Use this heavy weight material to line drawers and protect bench tops. It is easily cut to shape with scissors. Thickness through ribs is 0.028 inches.

Kontes Article No.	Feet / Case	Width (in.)	Approx. Case Weight (lbs.)	Cube / Case	Case Qty.	Case Price
5011-0015	15	30	4	0.3	1	24.26
5013-0100	100	30	22	1.1	1	150.07



5011



Safety Program - *Play it safe in the lab.*

Our Safety Program discusses the ten basic safety rules of handling glassware as well as the technical properties and physics of glass. Available as a DVD.

Kimble Article No.	Format	Case Qty.	Case Price
99991D-99	DVD	1	23.99

See more safety products in the *SAFETYWARE* section.



321000

Bottle, Plastic Safety-Coating, with Blue Poly Cap

KIMAX® bottle has enhanced graduations and marking spot is permanent white enamel. This general use bottle is provided with a wide opening (approx. 30 mm ID) GL 45 screw thread and is supplied with linerless autoclavable (140°C max) polypropylene blue cap. Bottle design includes a clear (natural) drip-free polypropylene pour ring which is replaceable.

Kontes Article No.	Capacity (mL)	Graduations Range (mL)	Interval (mL)	Approx. OD (Unassembled) (mm)	Approx. Height (mm)	Case Qty.	Case Price
321000-0100	100	20-80	10	56	100	10	213.20
321000-0250	250	50-200	25	70	138	10	253.00
321000-0500	500	100-400	50	86	176	10	270.06
321000-1000	1000	100-900	50	101	225	10	375.22
321000-2000	2000	400-1800	100	136	262	4	255.83
Replacement Caps and Pour Rings							
14395C-45	Blue Cap					10	27.90
14395P-45	Pour Ring					10	9.80

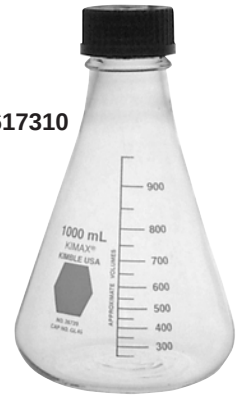


481755

Cylinder, Class A, Plastic Safety-Coating

KIMAX Class A cylinder is permanently marked with an individual serial number and single metric scale. Calibrated to deliver and supplied with a Certificate of Graduation Accuracy. Provided with a hexagonal base flat ground for stability. SAFE-GARD® bumpers are supplied with sizes 25 through 2000 mL. Designed from ASTM Specification E1272, Style 1, Class A requirements.

Kontes Article No.	Capacity (mL)	Graduated Interval (mL)	Subdiv (mL)	±Tol. (mL)	Approx. Height (mm)	Case Qty.	Case Price
481755-0100	100	5 to 100	1	0.40	255	1	97.87
481755-0250	250	10 to 250	2	0.80	330	1	100.49
481755-0500	500	25 to 500	5	1.30	375	1	111.90
481755-1000	1000	50 to 1000	10	2.50	460	1	137.01

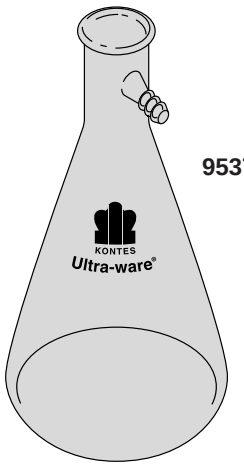


617310

Erlenmeyer Flask, Plastic Safety-Coating, with Screw Cap

These KIMAX Erlenmeyer Flasks have large openings, GL 45 thread closures to make filling easier and provide tight seals during storage. Flasks come with blue polypropylene caps and clear pour rings. Marking spots and scales are durable white ceramic enamel.

Kontes Article No.	Capacity (mL)	Approx. **Widest** Dia. (mm)	Approx. Height **with** Cap (mm)	**GPI** Thread Finish	Case Qty.	Case Price
617310-0250	250	81	130	GL 45	1	34.34
617310-0500	500	102	165	GL 45	1	35.62
617310-1000	1000	128	205	GL 45	1	44.76
617310-2000	2000	161	265	GL 45	1	58.72



953760

Filtering Flask, Plastic Safety-Coating

These erlenmeyer style flasks are manufactured from heavy-wall borosilicate glass to assure the mechanical strength needed for vacuum filtration. The 125 mL flask has a No. 5 stopper joint. The 1, 2 and 4 liter flasks have a No. 8 stopper joint. All flasks have a #2 side arm for connection to 1/4" (6 mm) I.D. flexible tubing.

Kontes Article No.	Capacity (mL)	Case Qty.	Case Price
953760-0122	125	1	56.86
953760-1002	1000	1	97.72
953760-2002	2000	1	142.14
953760-4002	4000	1	173.39

Recovery Flask, Heavy Wall, Plastic Safety-Coating, with Square Joint Bead

Single neck flask with a ⧩ outer joint designed for easy recovery of reaction products. Total contents are accessible with a spatula or policeman. Lower portion fits standard heating mantles.

Kontes Article No.	Capacity (mL)	⧩ Joint	Case Qty.	Case Price
608685-4124	50	24/40	1	31.72
608685-4224	100	24/40	1	33.27
608685-4324	200	24/40	1	44.90
608685-4624	500	24/40	1	59.25
608685-4724	1000	24/40	1	72.10

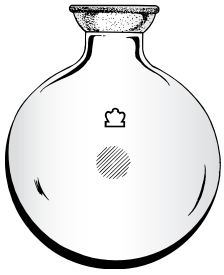


608685

Boiling Flask, Round Bottom, $ Joint, Heavy Wall, Plastic Safety-Coating

Single neck flask with a $ socket joint. Useful as rotary evaporator condensate collection flask or as a replacement for European designation KS 20/35.

Kontes Article No.	Capacity (mL)	$ Joint	Approx. Dia. (mm)	Case Qty.	Case Price
601055-0236	100	35/20	60	1	38.52
601055-0436	250	35/25	83	1	52.19
601055-0636	500	35/25	102	1	62.51
601055-0736	1000	35/25	130	1	84.82
601055-0836	2000	35/25	161	1	93.55



601055

Volumetric Flask, Plastic Safety-Coating, with ⧩ Stopper

KIMAX flask with a single graduation ring blasted on the neck, calibrated to contain. A ⧩ ground glass stopper is supplied. Sizes 10 mL and larger have marking spots. Sizes 5 mL and larger are designed from ASTM Specification E288, Class A unserialized requirements. Replacement stopper is 850100.

Kontes Article No.	Capacity (mL)	Tol. ±(mL)	⧩ Stopper	Approx. Height With Stopper (mm)	Case Qty.	Case Price
621505-0100	100	0.08	13	180	1	33.32
621505-0250	250	0.12	16	250	1	39.26
621505-0500	500	0.20	19	287	1	49.99
621505-1000	1000	0.30	22	338	1	60.59
621505-2000	2000	0.50	27	400	1	75.55



SAFETY 1st

621505

Septa, PTFE-Faced Silicone

Used with open-top cap to access container with a syringe. PTFE facing maintains the integrity of the contents while the silicone rubber backing allows repeated puncturing through the seal. All septa are .065" thick (.005 PTFE/.060 silicone) except 774161-0924 which is .100" thick (.010 PTFE/.090 silicone).

Kontes Article No.	Fits Thread Cap Size	Case Qty.	Case Price
774161-0008	8	48	18.27
774161-0013	13	48	34.65
774161-0015	15	48	54.38
774161-0018	18	24	29.77
774161-0020	20	24	31.61
774161-0024	24	24	33.87
774161-0924	24	24	53.83



774161

A serial number on each piece of KIMBLE Class A glassware provides an easy way for a laboratory to track which specific items are used during analytical testing. This traceability provides the ultimate control for your quality process.

KIMAX® Burets, Class A, Serialized

- Permanently marked with an individual serial number.
- Supplied with a Certificate of Graduation Accuracy.
- Designed from ASTM E287 — Standard Specification for Burets.
- Scales are durable white (17027F, 17110F, 17115F, 17052F) or black (17054F, 17124F) ceramic enamel.

General Specifications

Capacity (mL)	Subdivision ±(mL)	Tolerance ±(mL)	Case Qty.
5	0.01	0.01	1
10	0.02	0.02	1
10	0.05	0.02	1
25	0.10	0.03	1
50	0.10	0.05	1
100	0.20	0.10	1

Funnel Fill

with PTFE Stopcock



Article No.	Case Price
—	—
—	—
17027F-10	166.19
17027F-25	177.13
17027F-50	183.06
17027F-100	203.25

Micro, with PTFE Stopcock



Article No.	Case Price
17110F-5	257.21
17110F-10	257.21
—	—
—	—
—	—
—	—

KIMAX® Graduated Cylinders, Class A, Serialized, Metric Scale

- Permanently marked with an individual serial number.
- Each Shelf-Pack is supplied with one Certificate of Graduation Accuracy.
- Designed from the requirements of ASTM E1272 — Standard Specification for Graduated Cylinders, Style 1 cylinders with reinforced beaded lips and pourouts (20026) and Style 2 cylinders with standard taper necks (20036).
- Letters “T.D.” indicate to deliver (20026) and “T.C.” indicate to contain (20036), liquid at 20°C.
- White ceramic scale.

General Specifications

Capacity (mL)	Interval Grad. (mL)	Subdivision (mL)	Shelf Pack Qty.	Case Qty.
10	1 to 10	0.1	1	6
25	2 to 25	0.2	1	6
50	5 to 50	1	1	6
100	10 to 100	1	1	6
250	10 to 250	2	1	4
500	50 to 500	5	1	4
1000	100 to 1000	10	1	2

T.D., with Bumper



Article No.	Tol. ±(mL)	Bumper Size	Case Price
20026-10	0.10	—	441.42
20026-25	0.17	1	473.70
20026-50	0.25	3	476.88
20026-100	0.40	4	529.02
20026-250	0.80	6	382.60
20026-500	1.30	7	447.80
20026-1000	2.50	8	275.68

T.C., Mixing



Article No.	Tol. ±(mL)	℔ Stopper	Case Price
20036-10	0.08	9	466.14
20036-25	0.14	13	505.68
20036-50	0.20	16	550.26
20036-100	0.35	22	579.48
20036-250	0.65	27	119.08
20036-500	1.10	32	157.49
20036-1000	2.00	32	192.37

Reservoir Fill

Micro, with PTFE Stopcock



Article No.	Case Price
17115F-5	289.99
17115F-10	257.21
—	—
—	—
—	—
—	—

with PTFE Stopcock



Article No.	Case Price
—	—
—	—
—	—
17052F-25	147.98
17052F-50	155.97
17052F-100	199.82

Automatic Zero, with PTFE Stopcock



Article No.	Interval Grad. (mL)	Case Price
—	—	—
—	—	—
17054F-10	0.5 to 10	185.16
17054F-25	1.0 to 25	185.28
17054F-50	1.5 to 50	191.42
17054F-100	3.0 to 100	227.04

Automatic Zero, PTFE Stopcock, with Reservoir Bottle



Article No.	Case Price
—	—
—	—
17124F-10	548.95
17124F-25	548.91
17124F-50	570.43
17124F-100	741.58



KIMAX Serialized Burets are shipped in packaging that secures the buret and ensures it arrives unbroken.

KIMAX® Flasks, Volumetric, Class A, Serialized, To Contain

- Permanently marked with an individual serial number.
- Each Shelf-Pack is supplied with one Certificate of Graduation Accuracy.
- Carefully selected to meet the Class A requirements as specified in ASTM E288 – Standard Specification for Volumetric Flasks.

Micro

- Carefully selected to meet the Class A requirements as specified in ASTM E237 – Standard Specification for Volumetric Flasks
- Cylindrical bodies allow for better mixing, drainage, and for ease in withdrawal of samples by pipet.
- Wide base provides greater stability than is possible with conventional shaped flask.

General Specifications

Capacity (mL)	Tolerance (mL)	Shelf-Pack Qty.	Case Qty.
1	±0.01	1	6
2	0.015	1	6
5	0.02	1	6
10	0.02	1	12/6
25	0.03	1	12/6
50	0.05	6	12
100	0.08	6	12
200	0.10	6	12
250	0.12	6	12
500	0.20	6	12
1000	0.30	1	6
2000	0.50	1	4

ℱ Glass Stopper



Article No.	ℱ Stop.	Case Price
—	—	—
—	—	—
—	—	—
28017-10	9	431.16
28017-25	9	513.48
28017-50	9	548.40
28017-100	13	614.52
28017-200	16	627.24
28017-250	16	671.52
28017-500	19	832.08
28017-1000	22	507.12
28017-2000	27	428.16

Snap Cap



Article No.	Plastic Cap #	Case Price
—	—	—
—	—	—
—	—	—
—	—	—
—	—	—
28012-50	3	285.60
28012-100	4	320.04
—	—	—
28012-250	5	445.68
28012-500	5	440.04
28012-1000	6	297.66
—	—	—

Micro, with ℱ Glass Stopper



Article No.	ℱ Stop.	Case Price
28017A-1	8	214.44
28017A-2	8	232.98
28017A-5	8	228.00
28017A-10	9	261.90
28017A-25	9	309.06
—	—	—
—	—	—
—	—	—
—	—	—
—	—	—
—	—	—

KIMAX® Pipets, Class A, To Deliver, Serialized, Color-Coded, SAFE-GARD® Tempered Tip

- Permanently marked with an individual serial number.
- Each Shelf-Pack is supplied with one Certificate of Graduation Accuracy.
- Carefully selected to meet the Class A requirements as specified in ASTM E969 – Standard Specification for Volumetric (transfer) Pipets (37010) and ASTM E1293 – Standard Specification for Glass Measuring Pipets (37025).
- Permanent dark scale, fused to glass.
- Tempered tip has increased mechanical and thermal endurance.

General Specifications

Capacity mL	Shelf-Pack Qty.	Case Qty.
1	6	12
1	6	12
2	6	12
3	6	12
4	6	12
5	6	12
10	6	12
20	2	12
25	2	12/6
50	1	8
100	1	6

Volumetric



Article No.	Tol. ± (mL)	Case Price
37010-1	±0.006	153.24
—	—	—
37010-2	0.006	196.44
37010-3	0.01	227.52
37010-4	0.01	249.24
37010-5	0.01	256.80
37010-10	0.02	267.60
37010-20	0.03	339.60
37010-25	0.03	339.60
37010-50	0.05	269.12
37010-100	0.08	244.26

KIMAX-51, Measuring or Mohr Style



Article No.	Subdiv. (mL)	Tol. ± (mL)	Case Price
37025-1110	0.1	±0.01	208.68
37025-11100	0.01	0.01	285.72
37025-2	0.1	0.01	290.40
—	—	—	—
—	—	—	—
37025-5	0.1	0.02	257.16
37025-10	0.1	0.03	344.76
—	—	—	—
37025-25	0.1	0.05	302.70
—	—	—	—
—	—	—	—

About our serialized glassware . . .

KIMBLE CHASE is dedicated to supporting your ISO-9000 programs as well as providing you with products that live up to our rigid quality standards.

After graduations are applied, all Class A serialized glassware is subjected to further retesting / verification procedures by highly trained and qualified personnel. Precision volumetric standards and equipment, traceable to NIST, are utilized for the calibration of all KIMBLE Brand serialized glassware. This further insures that stated volumetric accuracies are being maintained. A "Certificate of Graduation Accuracy" referencing applicable ASTM product specifications is provided.


CERTIFICATE OF GRADUATION ACCURACY

Buret 17094F-50 (T.D.) Serial Number 3824

KIMBLE certifies that this design and calibration accuracy conforms to ASTM E287 - Standard Specification for Burets.
Capacity: 50 mL Tolerance: ±0.05 mL

KIMBLE volumetric standards are traceable to the National Institute of Standards and Technology (NIST).
KIMBLE master calibration weight set number traceable to NIST is test # 40674.

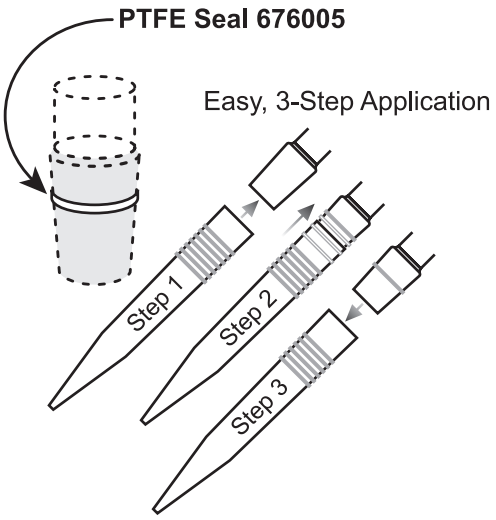
Dale R. Largenhorn
Certified By

5/20/04
Certification Date

Seals, Greaseless, for Taper Jointed Glassware

Use these thin PTFE sealing rings for taper jointed flasks and apparatus as an economical and efficient alternative to PTFE joint sleeves and stoppers. High vacuum-tight (gas leakage rate below 10-6 millibar / liter /second) between -200 and 250° C. Can be used with joint clamps. For technical information see: www.glindemann.net

Kontes Article No.	Fits Joint	Case Qty.	Case Price
676005-1030	10/30	50	30.95
676005-1420	14/10, 14/20, 14/35	50	34.38
676005-1922	19/22, 19/38	50	36.09
676005-2440	24/25, 24/40	50	36.39
676005-2942	29/26, 29/42	50	36.97
676005-4550	45/50	50	53.57



1. Position Applicator Tube On Joint
2. Slide Sealing Ring(s) Off of Applicator Tube and onto Joint
3. Remove Applicator Tube

Sleeves, PTFE, Ribbed with Gripping Ring

Reusable PTFE sleeve with knurled, reinforced gripping ring for easy removal. Sleeve has reinforcement ribs on the outer surface that provide a vacuum tight seal and also prevent the sleeve from sticking. Sleeve is .008" thick.

Kontes Article No.	Fits Joint	Case Qty.	Case Price
676100-1420	14/20	1	10.89
676100-1922	19/22	1	17.72
676100-2440	24/40	1	17.72
676100-2942	29/42	1	20.27
676100-3445	34/45	1	30.89
676100-4550	45/50	1	41.78

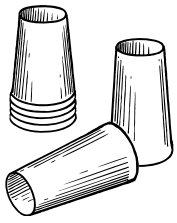


676100

Sleeves, Ground Joint, PTFE, for Greaseless Connections

Wall weight of .005" is heavier than normal to eliminate wrinkling and creasing. Precisely fabricated from pure extruded PTFE of the highest density for better vacuum and elasticity. Original sleeve shape is retained even after repeated use.

Kontes Article No.	Fits Joint	Case Qty.	Case Price
676001-1018	10/18	6	46.61
676001-1030	10/30	6	51.53
676001-1420	14/20	6	50.23
676001-1922	19/22	6	52.92
676001-1938	19/38	6	58.27
676001-2425	24/25	6	56.85
676001-2440	24/40	6	62.34
676001-2926	29/26	6	61.49
676001-2942	29/42	6	67.75
676001-3445	34/45	6	74.23
676001-4035	40/35	6	75.07
676001-4550	45/50	6	87.01
676001-5550	55/50	6	112.71
676001-7160	71/60	6	154.60



676001

Springs

Stainless steel for securely linking ground joints with hooks. Keeps apparatus together under moderate pressure buildup.

Kontes Article No.	Coil Dia. (mm)	Coil Length (mm)	Case Qty.	Case Price
662750-0038	5.7	9.5	20	28.40
662750-0012	5.7	12.7	20	17.33
662750-0034	5.7	19	20	119.55
662750-0001	5.7	25.4	20	58.24
662750-0114	5.7	31.75	20	105.68
662750-0002	7.6	50.8	20	86.84

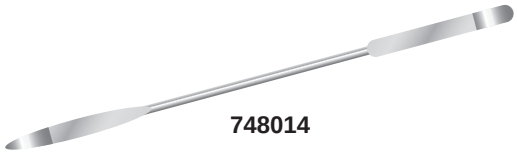


662750

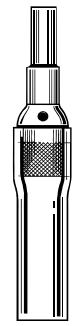
Spatula, Rounded / Tapered, Micro

Spatula will pass through a 14/10 or 14/20 outer joint. Made of nickel-stainless having a mirror finish. One end is rounded, the other is tapered to 1/8" (3.3mm). Both ends are approx. 5/16" (8mm) wide x 2" (51mm) in length.

Kontes Article No.	Overall Length (inches)	Case Qty.	Case Price
748014-1000	7.625	1	11.22
748014-0000	7.625	12	101.80



748014



788000



788030

Adapter, Anodized Aluminum

Convenient, inexpensive adapter for connecting pestles to stirrer motors. Anodized aluminum, with attached flexible tubing serving as a friction-clutch and as a flexible coupling. Stepped-stem diameter is 1/4” and 5/16” (6.4 and 7.9 mm).

Kontes Article No.	Fits Shaft Dia. (mm)	Approx. Height	Case Qty.	Case Price
788000-0020	6	45 mm	1	17.85
788000-0021	8-10	45 mm	1	24.21
788000-0022	19	70 mm	1	34.27

Adapter, Flex-Coupling

The Flex-Coupling allows 10 mm glass stirring rods to be used with a motor drive. The coupling uses a 3” long epoxy-coated spring to compensate for misalignment, reduces the chance of breakage and eliminates the need for special adapters. The glass shaft is secured by means of a silicone rubber insert and the top bushing will accept a 5/16” OD motor rod and is tightened by means of an allen screw.

Kontes Article No.	Fits Shaft Dia. (mm)	Case Qty.	Case Price
788030-0000	10	1	110.79



788020

Adapter, Flex-Shaft

A convenient stainless steel universal joint with 5/16 inch OD shaft and polyacetal adapter connects stirrer shafts to stirrer motors. Flexible design allows connection even if alignment is not precise.

Kontes Article No.	Fits Shaft Dia. (mm)	Case Qty.	Case Price
788020-0020	6	1	71.42
788020-0021	8-10	1	71.76
788020-0022	19	1	83.99

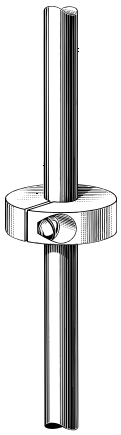


788010

Adapter, Polyacetal

A polyacetal stirrer adapter for connecting shafts to stirrer motors. Knurled compression nut can be hand tightened for a positive connection. Stepped O.D. on stem allows use with 1/4” and 5/16” precision collet-type chucks.

Kontes Article No.	Fits Shaft Dia. (mm)	Size	Case Qty.	Case Price
788010-0021	8-10	0021	1	38.63



788500

Retainer, Polyacetal

When properly mounted on the ground zone of a precision shaft, by preventing downward shaft movement this retainer can reduce possible flask damage. It also serves as a dust cover.

Kontes Article No.	Fits Shaft Dia. (mm)	Case Qty.	Case Price
788500-0021	10	1	17.14
788500-0022	19	1	25.01

Gauge, Vacuum

A NON-MERCURY alternative and economical way to verify low vacuum status. The 2” diameter mechanical guage scale is graduated from 0 to 30” Hg in 0.5” increments and is supplied with metal housing, glass face cover and brass fittings.

Kontes Article No.	Description	Case Qty.	Case Price
923610-3024	Vacuum Guage, 0 to 30” Hg, 24/40	1	75.50
923612-3002	Vacuum Guage Only, 0 to 30” Hg, #1 Hose	1	51.18



923610

Lubricant, Silicone Stir Bearing

Specially formulated low viscosity silicone fluid, with less than 0.5% weight loss at 150°C. Prevents binding and seizing of glass stirring rods under high temperature and pressures.

Useful with high vacuum and pressure stirring rods and bearings, where excellent resistance to wash out and temperature are needed. Excellent lubricant for plastic surfaces and tight fitting parts.

Kontes Article No.	Pkg. Size (g)	Case Qty.	Case Price
743202-0000	25	1	7.02

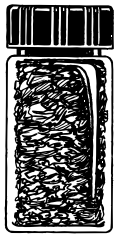


743202

Packing, PTFE / Graphite

A mixture of shredded PTFE and graphite. Used as packing in stuffing boxes of 782030 and 783000 stirrers. Sufficient quantity for three stuffing boxes.

Kontes Article No.	Case Qty.	Case Price
788250-0000	1	15.61

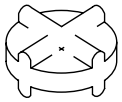


788250

Magnetic Stir Bar, Double-Finned, PTFE

Designed for use in cylindrical cavities. Special shape allows the stir bar to spin freely, unrestricted by the vessel contour.

Kontes Article No.	Approx. Overall Dia. x Height (mm)	Case Qty.	Case Price
791180-0021	19 x 17	1	17.54
791180-0022	25 x 19	1	18.31



791180

Magnetic Stir Bar, Egg-Shaped, PTFE

Designed for use in round bottom vessels. Special shape allows the stir bar to spin freely, unrestricted by the vessel contour.

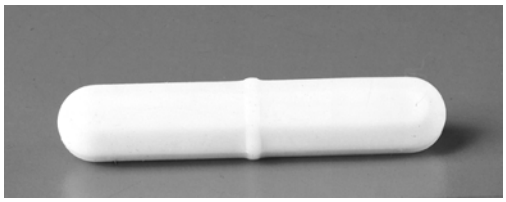
Kontes Article No.	Approx. Overall Width x Length (in.)	Case Qty.	Case Price
791170-0020	3/8 x 3/4	1	10.98
791170-0021	1/2 x 1	1	10.98
791170-0022	5/8 x 1 1/4	1	12.69



791170

Magnetic Stir Bar, Octagonal, PTFE

Octagonal cross-section with a molded-in pivot ring. The PTFE-coated magnet permits magnetic agitation without contamination.



791160

Kontes Article No.	Length x Dia. (mm)	Length x Dia. (inches)	Case Qty.	Case Price
791160-0001	12.7 x 3.18	1/2 x 1/8	1	3.05
791160-0002	12.7 x 7.93	1/2 x 5/16	1	3.43
791160-0003	12.7 x 9.52	1/2 x 3/8	1	3.94
791160-0004	15.9 x 7.93	5/8 x 5/16	1	3.43
791160-0005	15.9 x 9.52	5/8 x 3/8	1	4.39
791160-0006	22.2 x 7.93	7/8 x 5/16	1	3.69
791160-0007	22.2 x 9.52	7/8 x 3/8	1	4.59
791160-0008	22.2 x 7.93	1 x 5/16	1	3.75
791160-0009	25.4 x 9.52	1 x 3/8	1	4.59
791160-0010	28.6 x 7.93	1 1/8 x 5/16	1	3.94
791160-0012	38.1 x 7.93	1 1/2 x 5/16	1	4.20
791160-0013	38.1 x 9.52	1 1/2 x 3/8	1	5.48
791160-0018	63.5 x 7.93	2 1/2 x 5/16	1	8.33
791160-0019	63.5 x 9.52	2 1/2 x 3/8	1	8.58
791160-0020	76.2 x 12.7	3 x 1/2	1	15.33

Magnetic Stir Bar Kit, Octagonal, PTFE

Clear plastic case contains twelve PTFE-covered, octagonally-shaped magnetic stirrers. These stirrers have a pivot ring for stability and work well for many organic-type reactions. In addition to the above, there are four micro size magnets, two 7x2 mm and two 10x3 mm.

Two each of the following sizes are included; 1/2" x 5/16" , 5/8" x 5/16" , 1" x 3/8" , 1 1/2" x 3/8" , 2" x 3/8" , and 2 1/2" x 3/8".

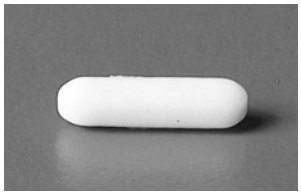


791120

Kontes Article No.	Case Qty.	Case Price
791120-0000	1	95.25

Magnetic Stir Bar, Micro, Polygon, PTFE

Polygon cross-section. The PTFE coated magnet permits magnetic agitation without contamination.



791130

Kontes Article No.	Length x Dia. (mm)	Case Qty.	Case Price
791130-0021	2.00 x 2.0	1	4.14
791130-0022	3.00 x 3.0	1	4.07
791130-0023	5.00 x 2.0	1	3.75
791130-0024	6.35 x 3.0	1	4.07
791130-0025	7.00 x 2.0	1	3.75
791130-0026	8.00 x 1.5	1	3.75
791130-0027	10.0 x 3.0	1	4.07
791130-0028	12.7 x 3.0	1	4.07
791130-0029	15.0 x 1.5	1	3.69

Magnetic Stir Bar, Round, Glass

Borosilicate-covered stir bar for use with high temperature reactions when a PTFE-covered bar is not practical.

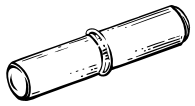


791200

Kontes Article No.	Approx. Overall Width x Length (mm)	Size	Case Qty.	Case Price
791200-0020	22 x 10	0020	1	10.84
791200-0021	38 x 10	0021	1	11.63
791200-0022	70 x 10	0022	1	15.61

Magnetic Stir Bar, Round, PTFE

PTFE-covered round magnetic stirring bar with removable pivoting. This stirrer bar permits stirring in closed containers without contamination.



791150

Kontes Article No.	Approx. Overall Width x Length (in.)	Case Qty.	Case Price
791150-0020	3/16 x 7/8	1	4.40
791150-0021	3/8 x 1/2	1	6.54
791150-0022	3/8 x 1	1	6.94
791150-0023	3/8 x 1 1/2	1	8.76
791150-0024	3/8 x 2 1/8	1	11.28
791150-0028	3/4 x 3 1/4	1	70.90

Magnetic Stir Bar, Round, Micro, PTFE

PTFE-covered round magnetic stirring bar. This stirrer bar permits stirring in closed containers without contamination. Supplied in glass vial with polyethylene stopper.

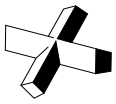


791140

Kontes Article No.	Approx. Overall Width x Length (mm)	Bars Per Vial	Case Qty.	Case Price
791140-0020	2 x 7	2	6	27.63
791145-0021	4 x 12	2	12	18.67

Magnetic Stir Bar, X-Shaped, PTFE

This PTFE-coated stirring bar provides superior mixing in the conical bottom HPLC reservoirs.

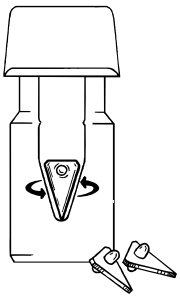


791190

Kontes Article No.	Fits Reservoir Sizes	Dimensions	Case Qty.	Case Price
791190-0100	2 liter	1" x 1"	1	10.52
791190-0114	5, 10 and 20 liter	1 1/4" x 1 1/4"	1	11.93

Magnetic Stir Vane, V-Shaped, PTFE

Magnet is molded in PTFE with a conical shape to fit ACCUFORM® vials. Design prevents "spin-out" and assures good mixing and vortexing. Useful in performing micro titrations and maintaining good suspensions.

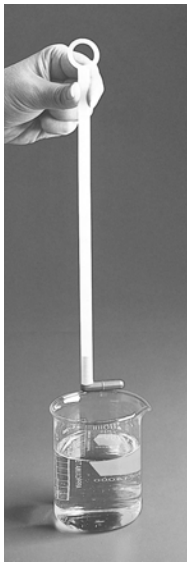


749060

Kontes Article No.	Fits ACCUFORM® Vial Sizes (mL)	Case Qty.	Case Price
749060-0000	0.3, 1	6	53.85
749060-0003	2, 3, 5	6	63.80

Magnetic Stir Bar Retriever, Polyethylene

A 3/8" diameter unit allows stir bars to be removed without touching or pouring out liquid. Powerful Alnico magnet sealed in one end and handy hang-up loop on the other. Will easily retrieve stirring bars to a maximum length of 1 inch.

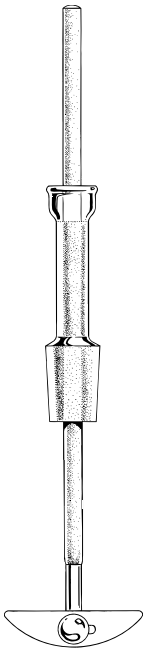


792000-0012
792000-0018

Kontes Article No.	Length (in.)	Case Qty.	Case Price
792000-0012	12	1	10.17
792000-0018	18	1	11.63



303860



781030

Assembly, Precision, PTFE Blade, 6 mm

This semi-micro stirrer has a 6 mm button shaft with a double curvature PTFE blade. The shaft and blade are sized to be used with ⧲ 14/20 flasks with a capacity of 25 mL and above.

Kontes Article No.	For Flask Cap. (mL)	⧲ Joint	Approx. Blade Height x Width (mm)	Approx. Shaft Length (mm)	Case Qty.	Case Price
303860-0000	25 to 500	14/20	11 x 33	280	1	148.16
Component Parts						
303861-0000	Bearing, ⧲ 14/20				1	88.63
303862-0000	Shaft, 280 mm x 6 mm O.D., ⧲ 14/20				1	42.47
788940-0021	Blade, PTFE, 11 x 33 mm				1	18.38

Assembly, Precision, with PTFE Blade, 10 mm

Complete assembly with a glass shaft and bearing. Blade is PTFE. Stirrer adapters 788000 through 788030 allow use with stirrer motors. Stirrer shaft is 10 mm O.D.

Kontes Article No.	For Flask Cap. (mL)	⧲ Joint	Approx. Blade Height x Width (mm)	Approx. Shaft Length (mm)	Case Qty.	Case Price
303860-0000	25 to 500	14/20	11 x 33	280	1	148.16
781030-0119	50 to 500	19/22	15 x 46	440	1	191.80
781030-0124	500 to 5000	24/40	19 x 75	445	1	134.93
781030-0129	500 to 5000	29/42	19 x 75	445	1	138.89
781030-0134	500 to 5000	34/45	19 x 75	445	1	144.19
781030-0245	2000 to 12000	45/50	24 x 110	515	1	165.34
781030-0255	2000 to 12000	55/50	24 x 110	515	1	191.80
Component Parts						
304001-0000	Stirrer Bearing, ⧲ 19/22				1	121.38
781001-2440	Stirrer Bearing, ⧲ 24/40				1	78.04
781001-2942	Stirrer Bearing, ⧲ 29/42				1	81.69
781001-3445	Stirrer Bearing, ⧲ 34/45				1	86.63
781001-4550	Stirrer Bearing, ⧲ 45/50				1	100.52
781001-5550	Stirrer Bearing, ⧲ 55/50				1	125.35
304151-0000	Stirrer Shaft, 10 x 440 mm, ⧲ 19/22				1	54.89
786500-0261	Stirrer Shaft, 10 x 445 mm, ⧲ 24/40 & ⧲ 29/42				1	39.68
786500-0262	Stirrer Shaft, 10 x 515 mm, ⧲ 45/50 & ⧲ 55/50				1	47.21
789030-0019	Stirrer Blade, 15 x 46 mm				1	16.53
789030-0022	Stirrer Blade, 19 x 75 mm				1	17.33
789030-0023	Stirrer Blade, 24 x 110 mm				1	19.31
Accessory Parts						
788500-0021	Stirrer Retainer, Polyacetal, For 10 mm Shafts				1	17.14
788020-0021	Stirrer Adapter, Flex-Shaft, For 8-10 mm Shafts				1	71.76

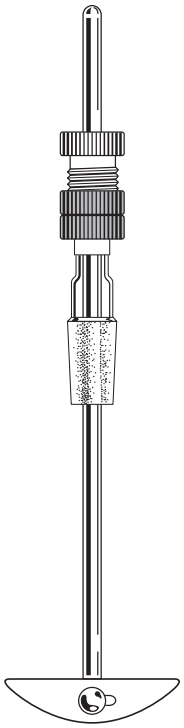
Assembly, HI-VAC with PTFE Blade and Polished Glass Shaft, 10 mm

Complete unit includes a HI-VAC PTFE and glass stirrer bearing and 786520 10mm O.D. polished glass stir shaft and PTFE blade. This assembly is recommended for systems requiring vacuum.

Kontes Article No.	For Flask Cap. (mL)	Joint	Shaft x Blade Size	Approx. Overall Length x Width (mm)	Case Qty.	Case Price
785030-0119	50 to 500	19/22	0260 x 0019	440 x 46	1	252.88
785030-0124	500 to 5000	24/40	0261 x 0022	445 x 75	1	252.88
785030-0129	2000 to 1200	29/42	0262 x 0022	515 x 110	1	252.88
785030-0145	2000 to 12000	45/50	0262 x 0025	515 x 110	1	252.88

Component Parts

785031-0119	Stirrer Bearing Assembly, 19/22	1	201.02
785031-0124	Stirrer Bearing Assembly, 24/40	1	201.02
785031-0129	Stirrer Bearing Assembly, 29/42	1	201.02
785031-0145	Stirrer Bearing Assembly, 45/50	1	201.02
786520-0260	Stirrer Shaft, 440 mm, for, 19/22	1	72.76
786520-0261	Stirrer Shaft, 445 mm, for, 24/40 or 29/42	1	72.76
786520-0262	Stirrer Shaft, 515 mm, for, 45/50	1	77.50
789030-0019	PTFE Stirrer Blade, 15x46 mm, Size 0019	1	16.53
789030-0022	PTFE Stirrer Blade, 19x75 mm, Size 0022	1	17.33
789030-0025	PTFE Stirrer Blade, 35x185 mm, Size 0025	1	30.83
758252-1025	O-ring, FKM 10 mm, Pack 10	10	17.19
758292-1025	O-ring, EP 10 mm, Pack 10	10	17.20



785030

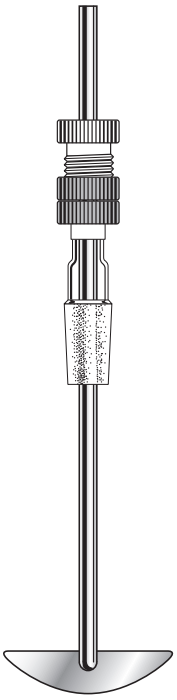
Assembly, HI-VAC with Stainless Steel Blade and Shaft, 10 mm

Complete unit includes a HI-VAC PTFE and glass stirrer bearing and 787150 10mm O.D. stainless steel stir shaft / blade for high torque applications. This assembly is recommended for systems requiring vacuum.

Kontes Article No.	For Flask Cap. (mL)	Joint	Approx. Overall Length x Width (mm)	Case Qty.	Case Price
785040-0124	500 to 5000	24/40	445 x 75	1	361.83

Component Parts

785031-0124	Stirrer Bearing Assembly, 24/40	1	201.02
787150-1622	Stirrer Shaft & Blade, 19 x 75 mm blade, 455 mm shaft	1	130.63
787150-0625	Stirrer Shaft & Blade, 21 x 130 mm blade, 530 mm shaft	1	167.98



785040

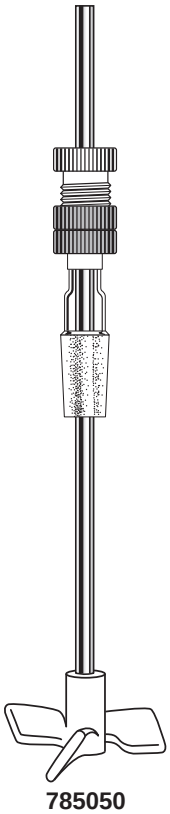
Assembly, HI-VAC with PTFE Tri-Blade on PTFE Shielded Stainless Steel Shaft, 10 mm

Complete unit includes a HI-VAC PTFE and glass stirrer bearing and PTFE shielded stir shaft with PTFE tri-blade. This assembly is recommended for reaction systems requiring vacuum which have 4” or larger flange.

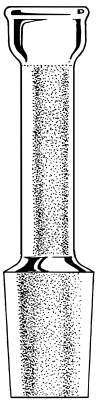
Kontes Article No.	For Flask Cap. (mL)	Joint	Approx. Overall Length x Width (mm)	Case Qty.	Case Price
785050-0624	500 to 5000	24/40	600 x 75	1	361.83

Component Parts

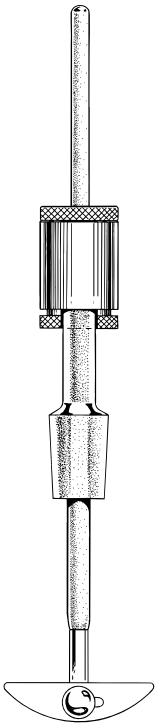
785031-0124	Stirrer Bearing Assembly, 24/40	1	201.02
786200-1060	Stirrer Shaft, 10 x 600 mm	1	120.38



785050



781001



782030

Assembly, Precision, PTFE Blade, with Stuffing Box, 10 mm

Complete unit includes a polyacetal stuffing box, glass stirrer bearing, 10 mm O.D. glass shaft, PTFE blade and stirrer packing. Packing consists of a PTFE and graphite mixture. This assembly is recommended for reaction systems requiring vacuum.

Kontes Article No.	For Flask Cap. (mL)	Joint	Approx. Blade Height x Width (mm)	Approx. Overall Length (mm)	Case Qty.	Case Price
782030-0124	500 to 5000	24/40	19 x 75	445	1	236.78
782030-0129	500 to 5000	29/42	19 x 75	445	1	239.43

Component Parts

782001-2440*	Stirrer Bearing, 24/40	1	179.90
782001-2942*	Stirrer Bearing, 29/42	1	183.88
786500-0261	Stirrer Shaft, 10 x 445 mm	1	39.68
789030-0022	Stirrer Blade, PTFE	1	17.33
782002-0000	Polyacetal Stuffing Box	1	44.98
788250-0000	Stirrer Packing	1	15.61

* Includes the polyacetal stuffing box.

Bearing, Precision, 10 mm

Stirrer bearing with built-in lubricant reservoir honed for a 10 mm O.D. shaft. Unit has integral joint for use with a variety of flasks.

Kontes Article No.	Joint	Use with Shaft O.D. (mm)	Approx. Overall Length (mm)	Case Qty.	Case Price
781001-2440	24/40	10	120	1	78.04
781001-2942	29/42	10	115	1	81.69
781001-3445	34/45	10	125	1	86.63
781001-4550	45/50	10	120	1	100.52
781001-5550	55/50	10	120	1	125.35



781010

Bearing, PTFE, 10 mm and 19 mm

These solid PTFE stirrer bearings are ideal for use with Kontes series 786500 glass 10 mm precision ground stirring shafts and series 784010 glass 19 mm precision ground stirring shafts.

Kontes Article No.	Joint	Use with Shaft O.D. (mm)	Approx. Overall Length (mm)	Case Qty.	Case Price
781010-2440	24/40	10	130	1	123.35
781010-2942	29/42	10	135	1	148.16
781019-2942	29/42	19	135	1	191.80
781019-4550	45/50	19	150	1	212.97



781050

Bearing, PTFE / Glass, 10 mm

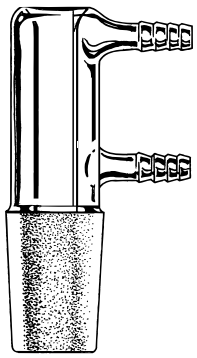
Threaded glass ground joint bearings seal against the stirrer shaft by means of a PTFE o-ring, a precision bore PTFE sleeve bearing and a PTFE tightening screw with lock nut and washer. These bearings are ideal for use with Kontes series 786500 glass 10 mm precision ground stirring shafts.

Kontes Article No.	Joint	Use with Shaft O.D. (mm)	Approx. Overall Length (mm)	Case Qty.	Case Price
781050-2440	24/40	10	150	1	149.49
781050-2942	29/42	10	150	1	160.06
781050-3445	34/45	10	150	1	173.29
781050-4550	45/50	10	150	1	189.16

Bearing, Precision, Water Cooled, 10 mm

Water cooled bearing with built-in lubricant reservoir for use with a 10 mm O.D. shaft.

Kontes Article No.	Joint	Use with Shaft O.D. (mm)	Hose Connections	Approx. Overall Height (mm)	Case Qty.	Case Price
781501-2440	24/40	10	#2	105	1	100.87
781501-2942	29/42	10	#2	105	1	103.84
781501-4550	45/50	10	#2	105	1	114.42



781501

Blade, PTFE, 10 mm

PTFE stirrer blade for 786500 and 786520 shafts. Blade is 1/8" thick. All 612000 through 612200 reaction flasks take size 0022 blades.

Kontes Article No.	For Flask Capacity (mL)	Approx. Height x Width (mm)	Flask Center Neck Size	Case Qty.	Case Price
789030-0019	50,100	15 x 46	19/22	1	16.53
789030-0020	50,100	19 x 48	24/40 - 35/20	1	15.61
789030-0021	200, 250, 300	19 x 60	24/40 - 35/20	1	16.42
789030-0022	500, 1000	19 x 75	24/40 - 35/20	1	17.33
789030-0023	2000, 3000	24 x 110	29/42 - 35/25	1	19.31
789030-0024	5000	24 x 130	29/42 - 35/25	1	30.83
789030-0025	12000	35 x 185	45/50 - 65/40	1	30.83



789030

Shaft, Precision Ground, 10 mm

Glass stirrer shaft with a precision-ground surface.

Kontes Article No.	For Flask Capacity (mL)	Approx. Ground Length (mm)	Approx. Overall Length (mm)	Shaft O.D. (mm)	Case Qty.	Case Price
304151-0000	500	400	440	10	1	54.89
786500-0261	100 to 5000	400	445	10	1	39.68
786500-0262	12000	470	515	10	1	47.21
786500-0263	22000	470	590	10	1	49.99
786500-0264	50000	470	700	10	1	51.34

Shaft, Precision Polished, 10 mm

Glass stirrer shaft with a precision-polished surface.

Kontes Article No.	For Flask Cap. (mL)	Approx. Overall Length (mm)	Shaft O.D. (mm)	Case Qty.	Case Price
786520-0260	100 to 2000	440	10	1	72.76
786520-0261	100 to 5000	445	10	1	72.76
786520-0262	5000 to 12000	515	10	1	77.50



304151
786500

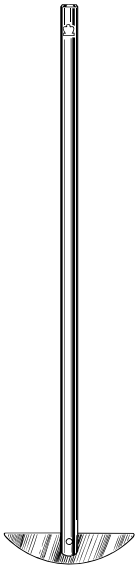


786520

Shaft Assembly, 316 Stainless Steel, 10 mm

Precision ground to fit 781001 through 783001 stirrer bearings. Stainless steel blade pivots on a rivet and slips into the slotted shaft for insertion through flask necks.

Kontes Article No.	For Flask Cap. (mL)	Blade Height x Width (mm)	Approx. Shaft Length (mm)	Shaft O.D. (mm)	Case Qty.	Case Price
787150-0621	200, 250, 300	19 x 60	330	10	1	146.85
787150-0622	500, 1000	19 x 75	330	10	1	130.63
787150-0623	2000, 3000	23 x 100	455	10	1	144.19
787150-0624	5000	24 x 130	455	10	1	149.49
787150-0625	12000	21 x 130	530	10	1	167.98
787150-0626	22000	21 x 130	610	10	1	195.77



787150

Shaft, Rod, Solid

KIMAX solid stirring rods constructed of KG-33 borosilicate glass. With rounded ends. Designed from Federal Specification NNN-R-560, Type I requirements.

Kimble Article No.	Approx. Dia. (mm)	Length (mm)	Shelf-Pack Qty.	Case Qty.	Case Price
40500-125	4	125	100	800	272.00
40500-150	5	150	100	800	320.00
40500-200	5	200	100	600	258.00
40500-250	6	250	100	600	360.00
40500-300	10	300	50	300	552.00
40500-375	10	375	50	200	504.00



40500



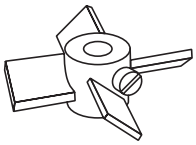
786200

Shaft, 10 mm, PTFE-Coated Stainless Steel with PTFE Blades

Stainless steel core provides the high mechanical stability required for collet chucks. The stirrer blade is firmly fastened to the shaft and all parts exposed to solutions are manufactured from PTFE. These shafts are resistant to virtually all chemicals, suitable for use at temperatures up to 250°C and are steam autoclavable at 121°C.

Kontes Article No.	Approx. Overall Width x Length (mm)	Case Qty.	Case Price
786200-1045	10 x 450	1	116.40
786200-1060	10 x 600	1	120.38

782000



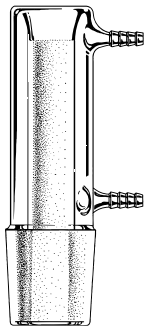
Stirrer Paddle, PTFE, 10 mm

Fabricated with four angled blades for use with 10mm O.D. shafts. Shaft opening is drilled straight through to permit positioning of paddle at any height on shaft.

Kontes Article No.	Approx. Width (mm)	Case Qty.	Case Price
782000-0050	50	1	117.75
782000-0075	75	1	133.58
782000-0120	120	1	183.60

Build your own heavy-duty, stirrer assemblies with these 19 mm parts.

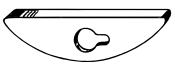
Heavy-duty stirrer assemblies can be custom made by selecting appropriate sizes of bearings, shafts and blades.



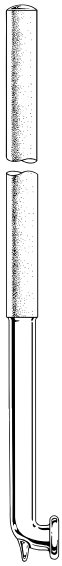
784000



781019



784035



784010

Bearing, PTFE, 19 mm

These solid PTFE stirrer bearings are ideal for use with Kontes series 784020 glass 19 mm precision polished stirring shafts.

Kontes Article No.	Joint	Shaft, (mm)	Approx. Overall Length (mm)	Case Qty.	Case Price
781019-2942	29/42	19	135	1	191.80
781019-4550	45/50	19	150	1	212.97

Bearing, Heavy-Duty, Water Cooled, 19 mm

Heavy-duty, water cooled, precision ground stirrer bearing.

Kontes Article No.	Joint	Hose Connections	Approx. Overall Length (mm)	Use With Shaft O.D. (mm)	Case Qty.	Case Price
784000-2942	29/42	#2	205	19	1	170.65
784000-4550	45/50	#2	165	19	1	187.85

Stirrer Blade, PTFE, Heavy-Duty, 19 mm

Heavy duty, 3/8" thick PTFE blade. Hydrophobic surface prevents adherence and simplifies clean-up. Use with 784010 heavy-duty shafts.

Kontes Article No.	For Flask Cap. (mL)	Size	Approx. Overall Height x Width (mm)	Minimum Flask Center Neck Size	Case Qty.	Case Price
784035-0004	12000	0004	35 x 150	45/50 - 65/40	1	71.82
784035-0005	22000	0005	39 x 160	45/50 - 65/40	1	66.80
784035-0006	50000	0006	44 x 175	55/50 - 75/50	1	89.62
784035-0007	72000	0007	54 x 200	71/60 - 102/75	1	114.10

Stirrer Shaft, Heavy-Duty, 19 mm

Heavy-duty stirrer shaft with a 19 mm O.D. Precision ground surface is 380 mm long. Unground length varies with size to accommodate flask capacity.

Kontes Article No.	For Flask Cap. (mL)	Size	Approx. Overall Length (mm)	Case Qty.	Case Price
784010-0003	5000	0003	585	1	96.59
784010-0004	12000	0004	650	1	96.59
784010-0005	22000	0005	725	1	96.59
784010-0006	50000	0006	865	1	96.59
784010-0007	72000	0007	950	1	96.59

Air Driven, Explosion Proof

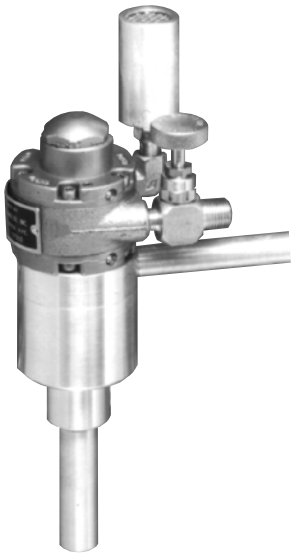
Gear driven, heavy-duty stirrer has a 7:1 gear reduction to provide speeds from 50 to 1200 RPM and increased power for stirring materials of high viscosity. Compact and unusually quiet, this stirrer offers safety for operations with all types of solvents, lacquers, paints, oils, synthetics, and fine or heavy chemicals where the danger of explosion may exist. Unit has a 1/6 HP air motor and a four foot air hose extension. Complete unit weighs 4 lb., 5 oz. This laboratory stirrer requires only 35 to 100 lb. of air pressure for operation and is designed to take up its own wear, assuring a long, service-free life. Speed is varied by adjusting the supply line valve, located near the efficient muffler unit. Unit features a 3/8" diameter motor shaft and adapter collar that will accept an accessory shaft/propeller, adjustable chuck or stirrer adapter.

AIR MOTOR PERFORMANCE TABLE

Speed in R.P.M.	@ 30 Lbs. Pressure H.P. / C.F.M.	@ 60 Lbs. Pressure H.P. / C.F.M.	@ 80 Lbs. Pressure H.P. / C.F.M.
100	*	*	*
500	0.012 / 2.0	0.035 / 4.0	0.040 / 5.0
1000	0.021 / 2.3	0.060 / 4.9	0.068 / 5.7
1500	0.028 / 2.7	0.090 / 5.3	0.100 / 6.5

* Will idle under light load-H.P. and C.F.M. are negligible.

Kontes Article No.	Case Qty.	Case Price
790000-0027	1	580.70



790000



790010

Adjustable Jacobs Chuck and Key

Fits any 3/8" diameter motor shaft and accommodates rods from 1/16" to 3/8" in diameter.

Kontes Article No.	Case Qty.	Case Price
790010-0000	1	59.00

Shaft, Propeller Combination, 303 Stainless Steel

Fabricated of #303 stainless steel. Shaft diameter is 3/8".

Kontes Article No.	Case Qty.	Case Price
790015-0000	1	59.00

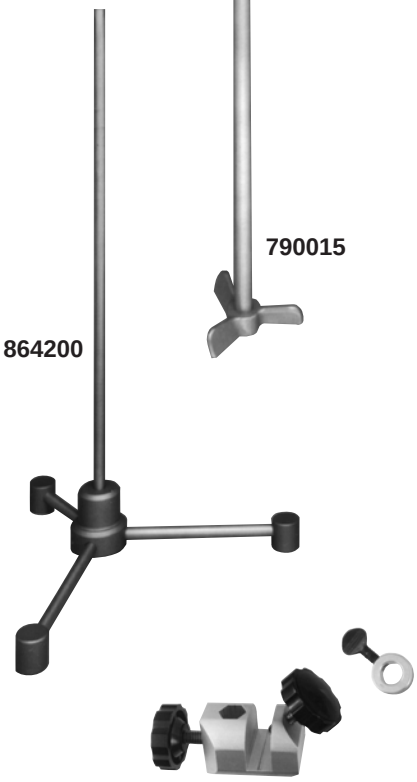


790015

Stand, Tripod Base

Heavy steel base with 5/8" diameter stainless steel rods. Overall height is 29". Accessory power hold aluminum clamp has large knobs for a powerful grip. Holds rods from 3/8" to 5/8" in diameter. Safety stop with a 5/8" diameter hole is provided with each clamp.

Kontes Article No.		Case Qty.	Case Price
864200-0000		1	195.44
Accessory			
864210-0000	Clamp and Safety Stop	1	62.57



864200

864210



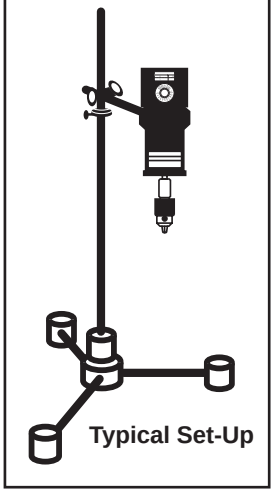
787920



Support Stand 864200



864210 Power Clamp and Safety Stop



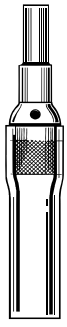
Typical Set-Up



788020



788010



788000

Electric Stirrer and Support Package

Handle light duty stirring with the Arrow Junior® direct drive stirrer - exclusively available from Kontes Glass Company. Replace your antiquated light duty motors with this unit specially designed to handle a broader operating range such as, watery to light syrupy mixtures at high speeds with constant torque (0-4000 RPM). Includes Jacobs chuck and key. Attachment to glass shaft requires stir adapter.

In addition to the electric stirrer, our rugged support package includes a stand constructed of 5/8" diameter stainless steel rods and an aluminum clamp with large "power knob" for positive gripping. A safety stop is also included with each clamp. Overall assembled height is 29".

- Powerful stall torque provides constant reproducible speed at low rpm
- Features a load meter to aid settng rpm ot performance requirements
- Totally enclosed permanent magnet DC non-ventilated motor keeps corrosive fumes and dust out for a long and trouble free service life
- Constant torque 10 in - oz. through entire range
- Aluminum stirrer support rod measures 9/16" x 10"
- Weight lbs (kg) 9 (4.1)
- Conforms to UL and CSA Certification, 115 VAC

Kontes Article No.	Description	Case Qty.	Case Price
787920-0115	Electric Stirrer and Support Package	1	811.55
Component Parts			
790040-0000	Electric Stirrer, 115 VAC	1	568.80
864200-0000	Support Stand, Tripod Base	1	195.44
864210-0000	Power Clamp and Safety Stop	1	62.57
Accessory Flex Shaft Stirrer Adapters			
788020-0020	Flex Shaft Stirrer Adapter for 6 mm Diameter Shafts	1	71.42
788020-0021	Flex Shaft Stirrer Adapter for 8-10 mm Diameter Shafts	1	71.76
788020-0022	Flex Shaft Stirrer Adapter for 19 mm Diameter Shafts	1	83.99

Adapter, Anodized Aluminum

Convenient, inexpensive adapter for connecting pestles to stirrer motors. Anodized aluminum, with attached flexible tubing serving as a friction-clutch and as a flexible coupling. Stepped-stem diameter is 1/4" and 5/16" (6.4 and 7.9 mm).

Kontes Article No.	Fits Shaft Dia. (mm)	Approx. Height (mm)	Case Qty.	Case Price
788000-0020	6	45	1	17.85
788000-0021	8-10	45	1	24.21
788000-0022	19	70	1	34.27

Adapter, Polyacetal

A polyacetal stirrer adapter for connecting shafts to stirrer motors. Knurled compression nut can be hand tightened for a positive connection. Stepped O.D. on stem allows use with 1/4" and 5/16" precision collet-type chucks.

Kontes Article No.	Fits Shaft Dia. (mm)	Size	Case Qty.	Case Price
788010-0021	8-10	0021	1	38.63

Cimarec® Digital Ceramic Top Stirring Hot Plates from Thermolyne



- Improved slow speed stirring and consistent speed control - adjusts from 50 to 1200 rpm. **StirTrac braking feature** brings the stir bar to an immediate stop for quick flask removal.
- **Easy-to-read, LED digital display** indicates temperature settings, adjustable in 5° increments, from 5° up to 540°C (41° to 1004°F).
- Microprocessor-controlled feedback technology maintains consistent, repeatable temperature settings. **Ideal for labs that perform repetitive procedures.**
- **Hot surface alert safety systems** protect from accidental burns. Bright red warning lights signal when heating surface is above 50°C (122°F). Unit display flashes "HOT" - "OFF" when heating is turned off, until heating surface is below a cool 50°C.
- Flat, white ceramic top and high-wattage heating elements combine to provide **superior heating transfer and fast time-to-boil.**
- Integral ring-stand holder accommodates 0.5" (1.3 cm) diameter support rod.
- Rugged low-profile cast aluminum body provides stability and durability.
- Accommodates sample weights to 35 lb. (11.3 kg) on the 10" x 10" models, .25 lb. on the 7" x 7" models and 15 lb. on the 4" x 4" models.
- Supplied with detachable cord and 2" x 3/8" dia. TFE-coated stir bar.

Kontes Article No.	Electrical (50/60 Hz) Volts	Amps	Watts	Stir Range RPM	Operating Temp. Range °C	°F	Shipping Weight Lb. (kg)	Case Qty.	Case Price
4.25" x 4.25" (10.8 x 10.8 cm) Heating Surface: Overall Dimensions 5.0"W (12.7 cm) x 10"D (25.4 cm) x 3.6"H (9.7 cm)									
790950-0401	120	3.4	410	50 to 1200	5 - 540	41 - 1004	7 (3.2)	1	398.20
790950-0402*	220-240	1.9	460	50 to 1200	5 - 540	41 - 1004	7 (3.2)	1	450.99
7.25" x 7.25" (18.4 x 18.4 cm) Heating Surface: Overall Dimensions 8.2"W (20.8 cm) x 13"D (33 cm) x 3.8"H (9.7 cm)									
790950-0701	120	8.6	1040	50 to 1200	5 - 540	41 - 1004	11 (5.0)	1	418.85
790950-0702*	220-240	5.0	1200	50 to 1200	5 - 540	41 - 1004	11 (5.0)	1	516.38
10.25" x 10.25" (26.0 x 26.0 cm) Heating Surface: Overall Dimensions 11.3"W (28.7 cm) x 16.2"D (41.1 cm) x 4"H (10.1 cm)									
790950-1001	120	12.0	1440	50 to 1200	5 - 400	41 - 752	17 (7.7)	1	553.10
790950-1002*	220-240	6.6	1600	50 to 1200	5 - 400	41 - 752	17 (7.7)	1	674.75

*CE Marked

STOPCOCKS

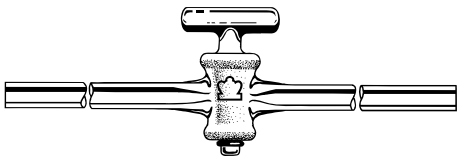
Fit of Glass Stopcock Plugs and Stoppers
Inevitably, it becomes necessary to replace a plug of an interchangeable stopcock which, by constant abrasion, has become worn so that the barrel is enlarged while the plug is diminished in size or otherwise physically or chemically acted upon. Replacement interchangeable stopcock plugs cannot be expected to fit properly in the barrel.

Even stopcocks which have been kept lubricated, free of loose abrasives and cleaned regularly when using corrosive liquids, may show sufficient wear so that a replacement plug will not fit perfectly. In this case, satisfactory fit usually can be obtained by a simple hand-lapping operation. Replacement stoppers can be fitted by the same method, if necessary.

Replacement of Glass Stopcock Plugs
Kimble and Kontes Brand stopcocks are put through a special processing operation so that the completed stopcock, when properly lubricated, will be found satisfactory for light liquids and for vacuum work where requirements are not too rigid. This presupposes that a stopcock plug will be used only in the barrel with which it is sold. If a stopcock plug is used with another barrel, while the fit may appear to be as good, there is a possibility that it will not be, although both the plug and barrel will still be within the tolerances given in ASTM Specification E675 for diameter and taper.

If, at any time, the user of a piece of apparatus wishes to improve the fit of a certain plug, this can be accomplished by the simple hand-lapping operation described below:

Make a thick paste of abrasive and water. For abrasive, we recommend 500 grit aluminum oxide or silicon carbide, although any fine abrasive flour can be used. Apply an even layer of this paste on the stopcock plug and insert it into the barrel. Lap plug by hand, turning first in one direction, then reversing, the total stroke being about three-quarters of a revolution. Repeat four or five times, then withdraw plug. Moisten end of plug by dipping into water. Reinsert plug and continue lapping for approximately one minute.

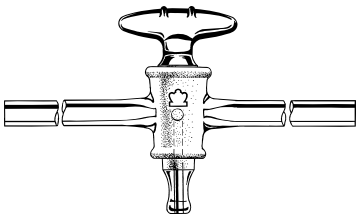


807000

Straight-Bore, Micro, Solid Glass Plug

Smaller 7/20 plug size for fabrication of micro apparatus. The bore of the stopcock is 1 mm with a 1:10 taper.

Kontes Article No.	⅌ Stopcock Size Bore (mm)	Plug Size (mm)	Approx. Stem O.D. (mm)	Case Qty.	Case Price
807000-0144	1	7/20	6	1	45.29
Replacement Stopcock Plug					
807001-0144	1	7/20		1	14.43



804000

Three-Way, with Bottom Outlet, Solid Glass Plug

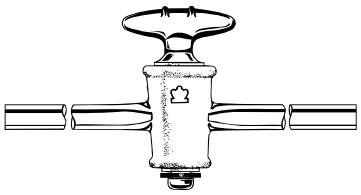
Three-way bottom outlet stopcock with a glass plug and barrel ground to interchangeable ⅌ specifications. The bottom outlet bore, having no connection with the straight-through bore, connects to either arm of the stopcock when the plug is rotated 90°. 1:10 taper. ⅌ plug is solid.

Kontes Article No.	⅌ Stopcock Size Bore (mm)	Plug Size (mm)	Approx. Stem O.D. (mm)	Case Qty.	Case Price
804000-0002	2	12/30	8	1	43.79
Replacement Stopcock Plug					
804001-0002	2	12/30		1	26.02

Straight-Bore, Glass Plug

Glass plug and barrel are ground to interchangeable ⅌ specifications. 1:10 taper. ⅌ plug sizes 1 through 6 are solid; size 8 is hollow.

Kontes Article No.	⅌ Stopcock Size Bore (mm)	Plug Size (mm)	Approx. Stem O.D. (mm)	Case Qty.	Case Price
801000-0001	1	12/30	8	1	31.44
305750-0221	2	10/25	8	1	38.35
801000-0002	2	12/30	8	1	27.79
801000-0004	4	17/40	10	1	40.29
801000-0006	6	20/44	13	1	47.44
801000-0008	8	25/52	16	1	86.90
Replacement Stopcock Plugs					
801001-0001	1	12/30		1	12.89
305751-0221	2	10/25		1	13.81
801001-0002	2	12/30		1	15.88
801001-0004	4	17/40		1	24.52
801001-0006	6	20/44		1	23.55
801001-0008	8	25/52		1	58.24

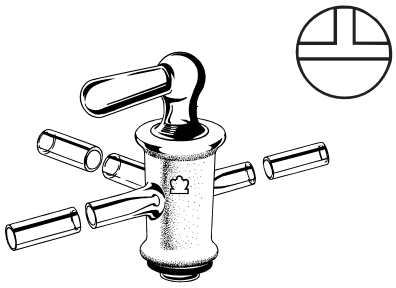


305750
801000

T-Bore, 90°, Solid Glass Plug

T-Bore stopcock, with a solid glass plug and barrel ground to interchangeable ⅌ specifications. 1:10 taper.

Kontes Article No.	⅌ Stopcock Size Bore (mm)	Plug Size (mm)	Approx. Stem O.D. (mm)	Case Qty.	Case Price
802000-0002	2	17/40	8	1	53.26
802000-0004	4	20/44	10	1	59.42
802000-0006	6	25/52	13	1	106.55
Replacement Stopcock Plugs					
802001-0002	2	17/40		1	20.96
802001-0004	4	20/44		1	27.64
802001-0006	6	25/52		1	52.86

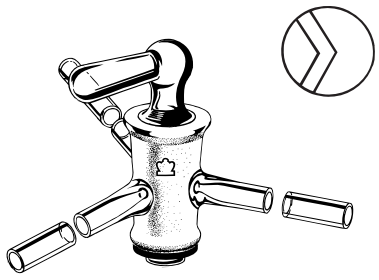


802000

Three-Way, 120°, Solid Glass Plug

Three-way with sidearms 120° apart. Glass plug with “V” bore and barrel are ground to interchangeable ⅌ specifications. 1:10 taper. Size 4 ⅌ plug is solid.

Kontes Article No.	⅌ Stopcock Size Bore (mm)	Plug Size (mm)	Approx. Stem O.D. (mm)	Case Qty.	Case Price
802500-0004	4	20/44	10	1	71.24
Replacement Stopcock Plugs					
802501-0004	4	20/44		1	20.50

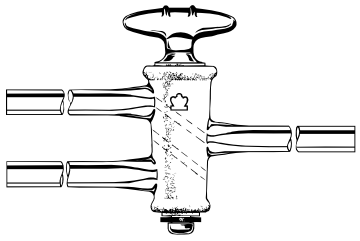


802500

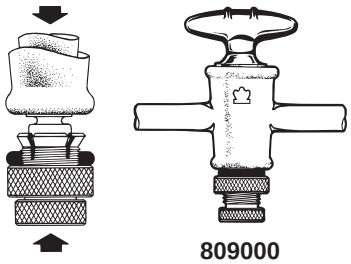
Three-Way, Double-Oblique, Solid Glass Plug

Double-oblique bore three-way stopcock, with a glass plug and barrel ground to interchangeable ⅌ specifications. 1:10 taper. ⅌ plug is solid.

Kontes Article No.	⅌ Stopcock Size Bore (mm)	Plug Size (mm)	Approx. Stem O.D. (mm)	Case Qty.	Case Price
803000-0002	2	14.5/50	8	1	66.58
803000-0004	4	16.2/56	10	1	63.57
Replacement Stopcock Plugs					
803001-0002	2	14.5/50		1	37.67
803001-0004	4	16.2/56		1	29.74



803000

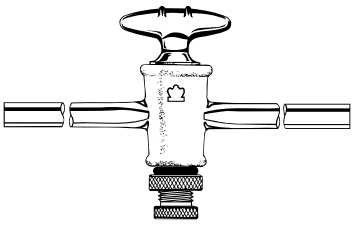


809000

Plug Retainer

Keeps KONTES brand stopcock plugs in place under adjustable tension. The retainer and ethylene-propylene o-ring are slipped over the end of the plug. Cross cuts at the end of the retainer enable the threaded portion to expand and then snap into place. The o-ring and nut are then moved toward the stopcock barrel to provide a spring loading effect which secures the assembly. Material is polyacetal.

Kontes Article No.	Fits Plug Sizes (mm)	O-Ring Size	Case Qty.	Case Price
809000-0021	12/30, 12.60/40, 14.5/50	205	1	6.37
809000-0022	16.2/56, 15/35, 17/40, 17.35/50	207	1	6.10
809000-0023	20/44, 20.9/54	210	1	9.50

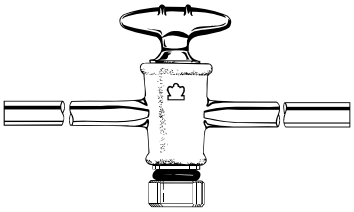


831000

Straight Bore, Pressure, Solid Glass Plug

Straight bore stopcock is precision ground for pressure applications. Solid glass ⅋ plug is 1:10 taper. Supplied with an 809000 plug retainer.

Kontes Article No.	⅋ Stopcock Size Bore (mm)	Plug Size (mm)	Approx. Stem O.D. (mm)	Case Qty.	Case Price
831000-0002	2	15/35	8	1	45.26
831000-0004	4	17/40	10	1	58.64

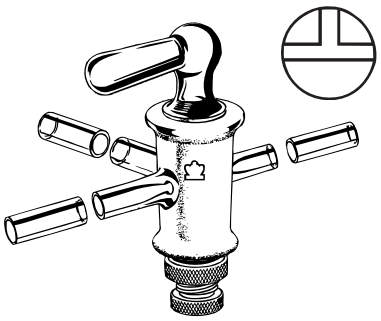


831200

Threaded Pressure / Vacuum Stopcock, 2 mm Bore

The assembly consists of a glass barrel, threaded glass plug, PTFE washer, size 109 EP o-ring and PP nut. The nut holds the plug securely in the barrel making the assembly suitable for pressure as well as vacuum applications.

Kontes Article No.	⅋ Stopcock Size Bore (mm)	Case Qty.	Case Price
831200-0002	2	1	51.35

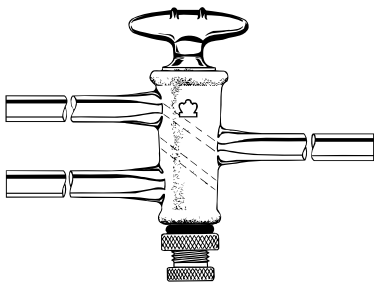


832000

T-Bore, Pressure, 90°, Solid Glass Plug

T-bore stopcock is precision ground for pressure applications. Solid glass plug is 1:10 taper. Supplied with an 809000 stopcock plug retainer.

Kontes Article No.	⅋ Stopcock Size Bore (mm)	Plug Size (mm)	Approx. Stem O.D. (mm)	Case Qty.	Case Price
832000-0002	2	17/40	8	1	62.36
832000-0004	4	20/44	10	1	71.94



833000

Three-Way, Double Oblique, Pressure, Solid Glass Plug

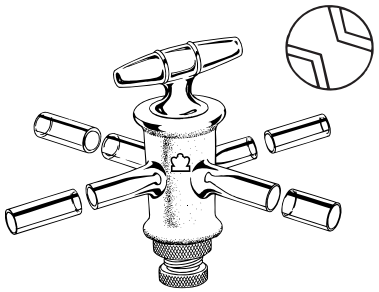
Three-way double-oblique stopcock with precision grinding for pressure applications. Solid glass plug is 1:10 taper. Supplied with an 809000 stopcock plug retainer.

Kontes Article No.	⅋ Stopcock Size Bore (mm)	Plug Size (mm)	Approx. Stem O.D. (mm)	Case Qty.	Case Price
833000-0002	2	14.5/50	8	1	77.22
833000-0004	4	16.2/56	10	1	75.39

Four-Way, Double "V", Pressure, Solid Glass Plug

Four-way stopcock is precision ground for pressure applications. Double "V", 90° plug bore connects opposite sets of adjacent arms. Solid glass plug is 1:10 taper. Supplied with an 809000 stopcock plug retainer.

Kontes Article No.	Stopcock Size Bore (mm)	Plug Size (mm)	Approx. Stem O.D. (mm)	Case Qty.	Case Price
833500-0002	2	20/44	8	1	84.20

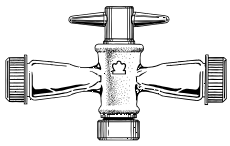


833500

Connecting, Threaded, with 4 mm PTFE Stopcock, Bevel-Seal™

All connectors have an overall length of approximately 80 mm. Cap (410119) is suitable for use to 200°C. O-rings are FKM. Replacement plug is 821001.

Kontes Article No.	Accom. Range (mm)	Nom. Size (in.)	Stopcock	O-Ring Size	Modified GPI Thread	Case Qty.	Case Price
179740-0505	3-5 to 3-5	3/16 to 3/16	2	105	13-425/13-425	1	84.98
179740-0808	5-8 to 5-8	1/4 to 1/4	4	108/108	15-415/15-415	1	105.17

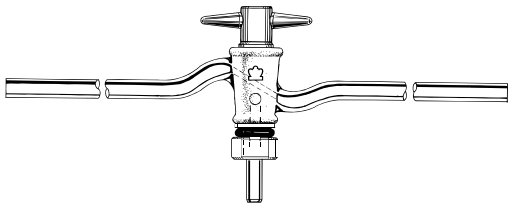


179740

Three-Way, PTFE Plug

Oblique-bore three-way stopcock with a 1:5 taper. Bottom bore has no connection with the straight-through bore. Connection to the lower arm of the stopcock is made when the plug is rotated 180°. Plug is PTFE.

Kontes Article No.	Stopcock Size Bore (mm)	Plug Size (mm)	Approx. Stem O.D. (mm)	Case Qty.	Case Price
824000-0002	2	14.4/44	10	1	61.83
824000-0004	4	14.4/44	10	1	47.66
Replacement PTFE Stopcock Plugs					
824001-0002	2	14.4/44		1	33.81
824001-0004	4	14.4/44		1	34.92

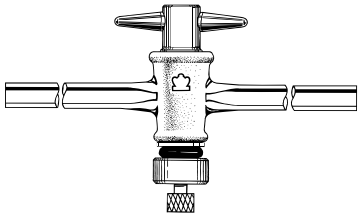


824000

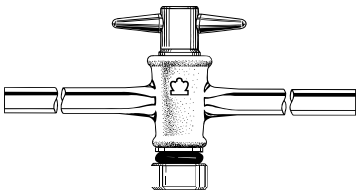
Straight-Bore, Varibor Metering Valve, PTFE Plug

Straight stopcock with a 1:5 taper PTFE plug. Threaded CTFE needle valve allows control of flow rates from droplet addition to full flow.

Kontes Article No.	Stopcock Size Bore (mm)	Plug Size (mm)	Approx. Stem O.D. (mm)	Case Qty.	Case Price
821110-0002	2	11/25	8	1	61.21
821110-0004	4	15.2/30	10	1	89.13
Replacement PTFE Stopcock Plugs					
821111-0002	2	11/25		1	49.00
821111-0004	4	15.2/30		1	51.15



821110

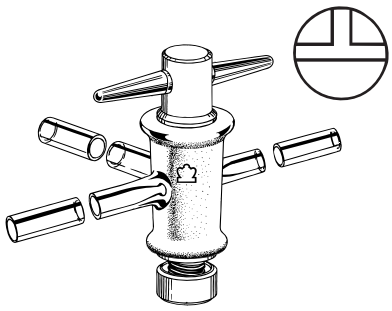


821000

Straight-Bore, PTFE Plug

With a 1:5 taper PTFE plug and a threaded pressure nut. The more exaggerated taper permits easier use at higher than ambient temperatures.

Kontes Article No.	℔ Stopcock Size Bore (mm)	Plug Size (mm)	Approx. Stem O.D. (mm)	Case Qty.	Case Price
821000-0002	2	11/25	8	1	29.75
821000-0004	4	15.2/30	10	1	49.13
821000-0006	6	16/35	13	1	60.90
821000-0008	8	24/40	16	1	115.95
821000-0010	10	24/40	16	1	115.95
Replacement PTFE Stopcock Plugs					
821001-0002	2	11/25		1	12.03
821001-0004	4	15.2/30		1	13.81
821001-0006	6	16/35		1	20.27
821001-0008	8	24/40		1	54.28
821001-0010	10	24/40		1	54.28

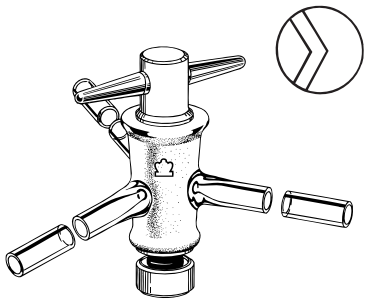


822000

T-Bore, 90°, PTFE Plug

T-bore stopcock with a 1:5 taper PTFE plug with a threaded pressure nut.

Kontes Article No.	℔ Stopcock Size Bore (mm)	Plug Size (mm)	Approx. Stem O.D. (mm)	Case Qty.	Case Price
822000-0002	2	15.2/30	8	1	62.60
822000-0004	4	16/35	10	1	73.63
822000-0006	6	24/40	13	1	119.14
Replacement PTFE Stopcock Plugs					
822001-0002	2	15.2/30		1	19.94
822001-0004	4	16/35		1	49.62
822001-0006	6	24/40		1	53.65

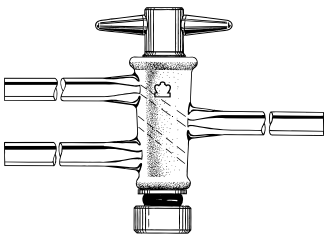


822500

Three-Way, 120°, PTFE Plug

Three-way with sidearms 120° apart. PTFE with V bore plug, with a threaded pressure nut, has a 1:5 taper.

Kontes Article No.	℔ Stopcock Size Bore (mm)	Plug Size (mm)	Approx. Stem O.D. (mm)	Case Qty.	Case Price
822500-0002	2	15.2/30	8	1	71.27
Replacement PTFE Stopcock Plugs					
822501-0002	2	15.2/30		1	27.87



823000

Three-Way, PTFE Plug

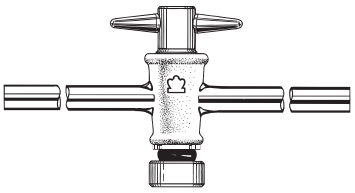
Double-oblique bore, three-way stopcock. PTFE plug, with 1:5 taper, and threaded pressure nut.

Kontes Article No.	℔ Stopcock Size Bore (mm)	Plug Size (mm)	Approx. Stem O.D. (mm)	Case Qty.	Case Price
823000-0002	2	12.9/44	8	1	70.40
823000-0004	4	14.4/44	10	1	80.27
Replacement PTFE Stopcock Plugs					
823001-0002	2	12.9/44		1	24.84
823001-0004	4	14.4/44		1	30.64

Straight-Bore, Capillary, PTFE Plug

With 2 mm I.D. capillary sidearms and a 1:5 taper PTFE plug.

Kontes Article No.	Stopcock Size Bore (mm)	Plug Size (mm)	Approx. Stem O.D. (mm)	Case Qty.	Case Price
821250-0002	2	11/25	8	1	39.21
Replacement PTFE Stopcock Plugs					
821001-0002	2	11/25		1	12.03

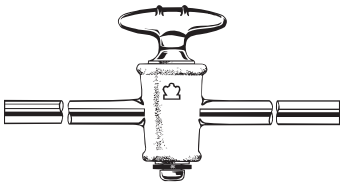


821250

Straight-Bore, Capillary, High-Vacuum, Solid Glass Plug

Solid glass plug, straight bore, precision-ground stopcock with a 1:10 taper. Capillary sidearms have an I.D. approximately the same size as the bore.

Kontes Article No.	Stopcock Size Bore (mm)	Plug Size (mm)	Approx. Stem O.D. (mm)	Case Qty.	Case Price
841250-0002	2	15/35	8	1	50.49

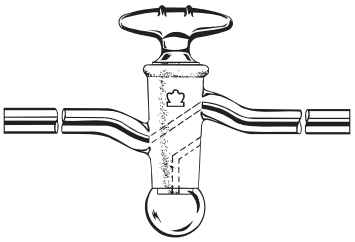


841250

Oblique-Bore, Capillary, High-Vacuum, Solid Glass Plug, with Vacuum Chamber

Solid glass plug, oblique-bore, precision-ground stopcock with a 1:10 taper. Lower vacuum chamber is not in the line of flow and must be outgassed in a separate operation.

Kontes Article No.	Stopcock Size Bore (mm)	Plug Size (mm)	Approx. Stem O.D. (mm)	Case Qty.	Case Price
843250-0002	2	12.60/40	8	1	72.14

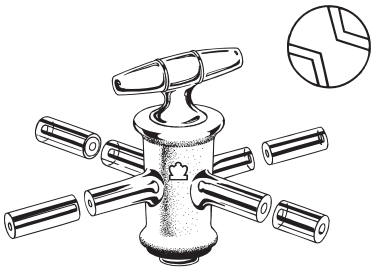


843250

Four-Way, Double "V", High-Vacuum, Capillary, Solid Glass Plug

Solid glass plug, four-way, precision-ground stopcock with a 1:10 taper. Double "V", 90° bores connect opposite sets of adjacent arms.

Kontes Article No.	Stopcock Size Bore (mm)	Plug Size (mm)	Approx. Stem O.D. (mm)	Case Qty.	Case Price
845850-0002	2	20/44	8	1	86.89

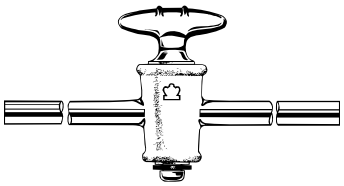


845850

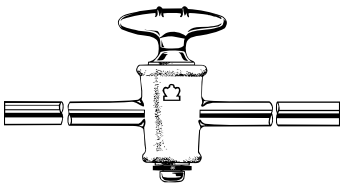
KONTES
custom glass shop
*call toll-free **800-682-6644***
customglass@kimble-chase.com

Contact the **Kontes Custom Glass Shop** at KIMBLE CHASE for modifications of standard products or fabrication of your unique designs. And when it comes to repairs, we can save you up to 75% of the cost of a new item. Save an additional 10% on repairs of Kontes or Kimble Brand products. Fax your requirements to **856-692-6644**.

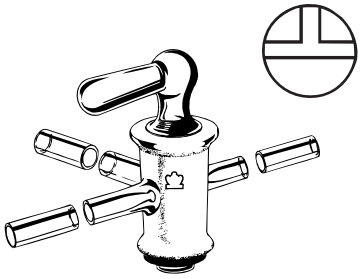
- **Custom Fabrications**
- **Quality Repairs**
- **Modifications of All Kinds**
- **No Order Too Small**
- **Quick Turnaround**



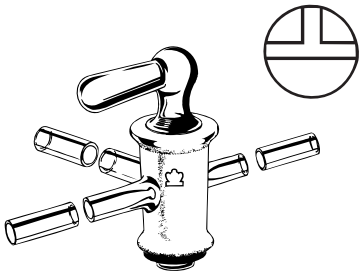
841000



841100



843800



843900

Straight-Bore, High Vacuum, Hollow Glass Plug

Hollow glass plug, straight-bore, precision-ground stopcock with 1:10 taper. Well suited for use as a component for gas storage bulbs or in all-glass vacuum systems. Capable of maintaining vacuum for long periods using a proper stopcock grease.

Kontes Article No.	⅋ Stopcock Size Bore (mm)	Plug Size (mm)	Approx. Stem O.D. (mm)	Case Qty.	Case Price
841000-0002	2	15/35	8	1	69.06
841000-0004	4	17/40	10	1	78.77
841000-0006	6	20/44	13	1	105.73
841000-0008	8	25/52	16	1	110.12
841000-0010	10	30/75	19	1	168.13
841000-0015	15	40/100	25	1	215.89

Straight-Bore, High-Vacuum, Solid Glass Plug

Solid glass plug, straight-bore, precision-ground stopcock with a 1:10 taper.

Kontes Article No.	⅋ Stopcock Size Bore (mm)	Plug Size (mm)	Approx. Stem O.D. (mm)	Case Qty.	Case Price
841100-0002	2	15/35	8	1	38.93
841100-0004	4	17/40	10	1	55.64
841100-0006	6	20/44	13	1	56.07

T-Bore, 90°, High-Vacuum, Hollow Glass Plug

Hollow glass plug, T-bore, precision-ground stopcock with a 1:10 taper.

Kontes Article No.	⅋ Stopcock Size Bore (mm)	Plug Size (mm)	Approx. Stem O.D. (mm)	Case Qty.	Case Price
843800-0002	2	17/40	8	1	121.38
843800-0004	4	20/44	10	1	125.63
843800-0006	6	25/52	13	1	144.15
843800-0008	8	35/56	16	1	180.59
843800-0010	10	40/100	19	1	333.07

T-Bore, 90°, High-Vacuum, Solid Glass Plug

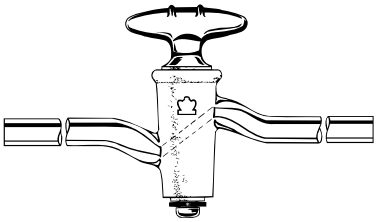
Solid glass plug, T-bore, precision-ground stopcock with a 1:10 taper.

Kontes Article No.	⅋ Stopcock Size Bore (mm)	Plug Size (mm)	Approx. Stem O.D. (mm)	Case Qty.	Case Price
843900-0002	2	17/40	8	1	58.79
843900-0004	4	20/44	10	1	68.01
843900-0006	6	25/52	13	1	109.74

Oblique-Bore, High-Vacuum, Hollow Glass Plug

Hollow glass plug, oblique-bore, precision-ground stopcock with a 1:10 taper.

Kontes Article No.	⅋ Stopcock Size Bore (mm)	Plug Size (mm)	Approx. Stem O.D. (mm)	Case Qty.	Case Price
841500-0002	2	12.60/40	8	1	63.04
841500-0004	4	17.35/50	10	1	78.58

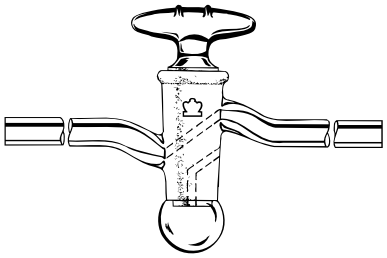


841500

Oblique-Bore, High-Vacuum, Hollow Glass Plug, with Vacuum Chamber

Hollow glass plug, oblique-bore, precision-ground stopcock with a 1:10 taper. Lower vacuum chamber is not in the line of flow and must be outgassed in a separate operation.

Kontes Article No.	⅋ Stopcock Size Bore (mm)	Plug Size (mm)	Approx. Stem O.D. (mm)	Case Qty.	Case Price
843000-0002	2	12.60/40	8	1	73.66
843000-0004	4	17.35/50	10	1	80.50
843000-0006	6	20.9/54	13	1	116.20
843000-0008	8	25/66	16	1	148.61
843000-0010	10	30/75	19	1	162.91

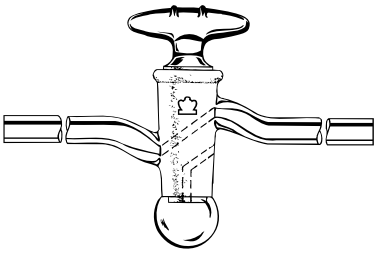


843000

Oblique-Bore, High-Vacuum, Solid Glass Plug, with Vacuum Chamber

Solid glass plug, oblique-bore, precision-ground stopcock with a 1:10 taper. Lower vacuum chamber is not in the line of flow and must be outgassed in a separate operation.

Kontes Article No.	⅋ Stopcock Size Bore (mm)	Plug Size (mm)	Approx. Stem O.D. (mm)	Case Qty.	Case Price
843100-0002	2	12.60/40	8	1	67.36
843100-0004	4	17.35/50	10	1	75.41

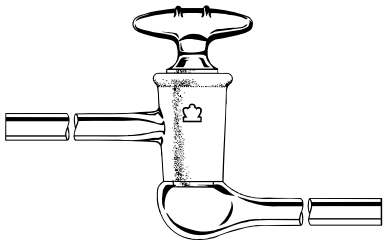


843100

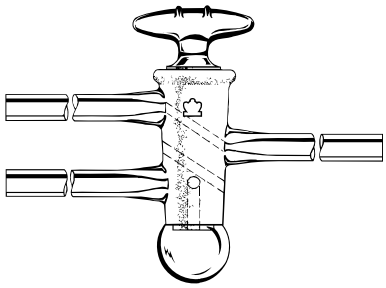
Offset, High-Vacuum, Hollow Glass Plug, with Vacuum Chamber

Hollow glass plug, offset, precision-ground stopcock with a vacuum chamber and a 1:10 taper.

Kontes Article No.	⅋ Stopcock Size Bore (mm)	Plug Size (mm)	Approx. Stem O.D. (mm)	Case Qty.	Case Price
846000-0002	2	15/35	8	1	77.01
846000-0004	4	17/40	10	1	73.38



846000

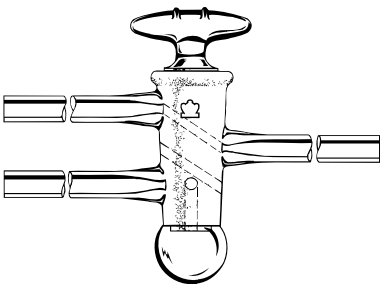


845000

Three-Way, Double-Oblique, High-Vacuum, Hollow Glass Plug, with Vacuum Chamber

Hollow glass plug, three-way, double-oblique bore, precision-ground stopcock with a 1:10 taper. Lower vacuum chamber is not in the line of flow and must be outgassed in a separate operation.

Kontes Article No.	Ⓢ Stopcock Size Bore (mm)	Plug Size (mm)	Approx. Stem O.D. (mm)	Case Qty.	Case Price
845000-0002	2	14.5/50	8	1	110.46
845000-0004	4	16.2/56	10	1	153.67
845000-0006	6	25/66	13	1	161.46

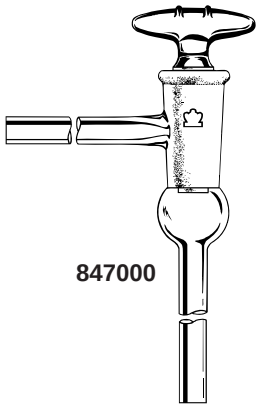


845100

Three-Way, Double-Oblique, High-Vacuum, Solid Glass Plug, with Vacuum Chamber

Solid glass plug, three-way, double-oblique bore, precision-ground stopcock with a 1:10 taper. Lower vacuum chamber is not in the line of flow and must be outgassed in a separate operation.

Kontes Article No.	Ⓢ Stopcock Size Bore (mm)	Plug Size (mm)	Approx. Stem O.D. (mm)	Case Qty.	Case Price
845100-0002	2	14.5/50	8	1	83.25
845100-0004	4	16.2/56	10	1	87.96
845100-0006	6	25/66	13	1	136.60

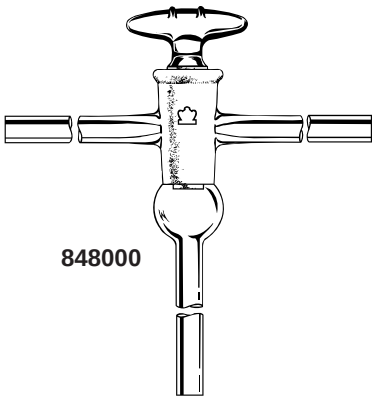


847000

Right-Angle, High-Vacuum, Hollow Glass Plug, with Vacuum Chamber

Hollow glass plug, right angle, precision-ground stopcock with a 1:10 taper. Lower stem is sealed to the vacuum chamber.

Kontes Article No.	Ⓢ Stopcock Size Bore (mm)	Plug Size (mm)	Approx. Stem O.D. (mm)	Case Qty.	Case Price
847000-0002	2	15/35	8	1	75.11
847000-0004	4	17/40	10	1	72.86
847000-0006	6	20/44	13	1	85.53
847000-0008	8	25/52	16	1	116.53
847000-0010	10	30/75	19	1	142.44
847000-0015	15	40/100	25	1	299.92



848000

T-Type, High-Vacuum, Hollow Glass Plug, with Vacuum Chamber

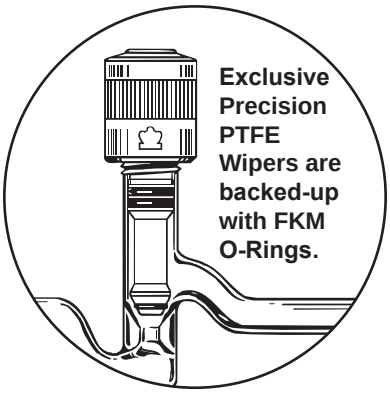
Hollow glass plug, T-type, precision-ground stopcock with a 1:10 taper. Bottom stem is sealed to the vacuum chamber.

Kontes Article No.	Ⓢ Stopcock Size Bore (mm)	Plug Size (mm)	Approx. Stem O.D. (mm)	Case Qty.	Case Price
848000-0002	2	15/35	8	1	68.64
848000-0004	4	17/40	10	1	100.15
848000-0006	6	20/44	13	1	107.41
848000-0008	8	25/52	16	1	129.24
848000-0010	10	30/75	19	1	149.68
848000-0015	15	40/100	25	1	361.22

Straight, with Tip O-Ring, Glass Plug, HI-VAC®

This valve uses a glass plug (as an alternative to PTFE or CTFE) for applications where the "out-gassing" plug material is undesireable. All plugs are totally interchangeable with other HI-VAC counterparts. Supplied with FKM o-rings. For greater solvent resistance, see the FFKM listing under o-rings.

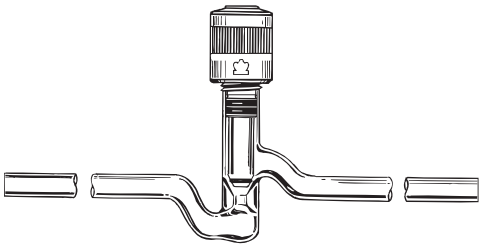
Kontes Article No.	Bore Range (mm)	Approx. Stem O.D. (mm)	O-Ring Size Shaft	O-Ring Size Tip	Case Qty.	Case Price
826450-0004	0-4	9	107	006	1	49.33
826450-0008	0-8	13	110	108	1	44.01
826450-0012	0-12	16	112	109	1	68.56
Replacement Parts						
826451-0004	Glass Plug, Size 4				1	32.78
826451-0008	Glass Plug, Size 8				1	19.30
826451-0012	Glass Plug, Size 12				1	20.83
826502-0004	Valve Without Plug, Size 4				1	18.33
826502-0008	Valve Without Plug, Size 8				1	20.76
826502-0012	Valve Without Plug, Size 12				1	47.28



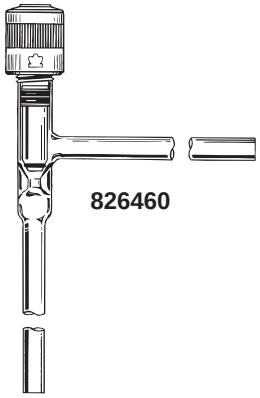
Right-Angle, with Tip O-Ring, Glass Plug, HI-VAC®

This valve uses a glass plug (as an alternative to PTFE or CTFE) for applications where the "out-gassing" plug material is undesireable. All plugs are totally interchangable with other HI-VAC counterparts. Supplied with FKM o-rings. For greater solvent resistance, see FFKM listing under o-rings.

Kontes Article No.	Bore Range (mm)	Approx. Stem O.D. (mm)	O-Ring Size Shaft	O-Ring Size Tip	Case Qty.	Case Price
826460-0004	0-4	9	107	006	1	49.09
826460-0008	0-8	13	110	108	1	51.45
826460-0012	0-12	16	112	109	1	68.96
Replacement Parts						
826451-0004	Glass Plug, Size 4				1	32.78
826451-0008	Glass Plug, Size 8				1	19.30
826451-0012	Glass Plug, Size 12				1	20.83
826512-0004	Valve Without Plug, Size 4				1	25.07
826512-0008	Valve Without Plug, Size 8				1	35.45
826512-0012	Valve Without Plug, Size 12				1	46.66



826450



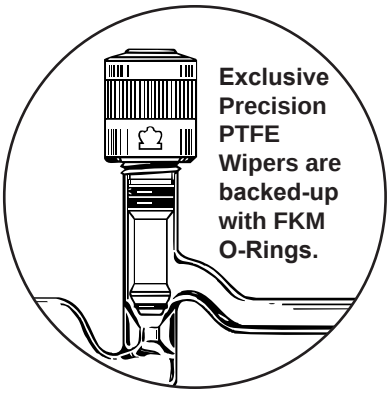
826460

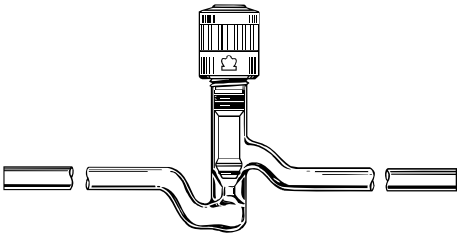
Note: Polyacetal knob is not recommended for use over 110°C.

KONTES
custom glass shop
*call toll-free **800-682-6644***
customglass@kimble-chase.com

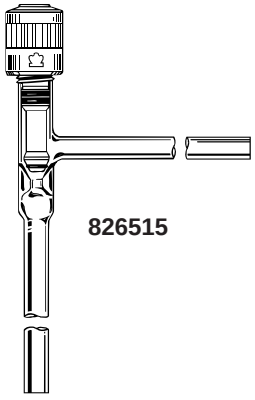
Contact the **Kontes Custom Glass Shop** at KIMBLE CHASE for modifications of standard products or fabrication of your unique designs. And when it comes to repairs, we can save you up to 75% of the cost of a new item. Save an additional 10% on repairs of Kontes or Kimble Brand products. Fax your requirements to **856-692-6644**.

- **Custom Fabrications**
- **Quality Repairs**
- **Modifications of All Kinds**
- **No Order Too Small**
- **Quick Turnaround**





826505



826515



826530

Straight, with Tip O-Ring, CTFE Plug, HI-VAC®

For vacuum applications up to 5 x 10^{-7} Torr. Designed with a precision external thread for fine control. This valve can be used as a bleed up to 1/2 a turn. Full open position is at 1 1/2 turns. The shaft is non-rotating and the primary seal is made with a FKM o-ring on a tapered seat. CTFE shaft provides for improved outgassing at system temperatures up to 200°C.

Kontes Article No.	Bore Range (mm)	Approx. Stem O.D. (mm)	O-Ring Size Shaft	O-Ring Size Tip	Case Qty.	Case Price
826505-0004	0-4	9	010	5-105	1	40.78
826505-0008	0-8	13	110	011	1	54.83
826505-0012	0-12	16	112	110	1	81.83
Replacement Parts						
826506-0004	CTFE Plug, Size 4				1	17.24
826506-0008	CTFE Plug, Size 8				1	32.91
826506-0012	CTFE Plug, Size 12				1	35.67
826502-0004	Valve Without Plug, Size 4				1	18.33
826502-0008	Valve Without Plug, Size 8				1	20.76
826502-0012	Valve Without Plug, Size 12				1	47.28

Right-Angle, with Tip O-Ring, CTFE Plug, HI-VAC®

For vacuum applications up to 5 x 10^{-7} Torr. Designed with a precision external thread for fine control. This valve can be used as a bleed up to 1/2 a turn. Full open position is at 1 1/2 turns.

The shaft is non-rotating and the primary seal is made with a FKM o-ring on a tapered seat. CTFE shaft provides for improved outgassing at system temperatures up to 200°C.

Kontes Article No.	Bore Range (mm)	Approx. Stem O.D. (mm)	O-Ring Size Shaft	O-Ring Size Tip	Case Qty.	Case Price
826515-0004	0-4	9	010	5-105	1	56.46
826515-0008	0-8	13	110	011	1	61.99
826515-0012	0-12	16	112	110	1	82.02
Replacement Parts						
826506-0004	CTFE Plug, Size 4				1	17.24
826506-0008	CTFE Plug, Size 8				1	32.91
826506-0012	CTFE Plug, Size 12				1	35.67
826512-0004	Valve Without Plug, Size 4				1	25.07

Hi-Vac Valve, Straight with PTFE Plug

These valves use PTFE plugs for vacuum applications up to 5 x 10^{-5}- Torr. Designed with a precision external thread for fine control. Full open position is at 1 1/2 turns. The shaft is non-rotating and the primary seal is made with a FKM o-ring on a tapered seat. PTFE shaft will withstand system temperatures of 230°C.

Kontes Article No.	Bore Range (mm)	Approx. Stem O.D. (mm)	O-Ring Size Shaft	O-Ring Size Tip	Case Qty.	Case Price
826530-0004	0-4	9	010	5-105	1	18.67
826530-0008	0-8	13	110	011	1	25.60
826530-0012	0-12	16	112	110	1	
58.24Replacement Parts						
826501-0004	PTFE Plug, Size 4				1	14.57
826501-0008	PTFE Plug, Size 8				1	18.55
826501-0012	PTFE Plug, Size 12				1	20.65

Note: Polyacetal knob is not recommended for use over 110°C.

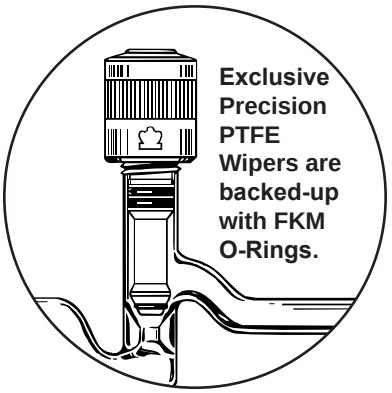
Straight, with Tip O-Ring, PTFE Plug, HI-VAC®

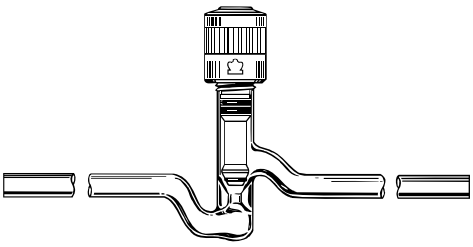
For vacuum applications up to 5 x 10^{-7} Torr. Designed with a precision external thread for fine control. This valve can be used as a bleed up to 1/2 a turn. Full open position is at 1 1/2 turns. The shaft is non-rotating and the primary seal is made with a FKM o-ring on a tapered seat. The PTFE shaft can be used continuously at system temperatures of 230°C, or intermittently at 275°C.

Kontes Article No.	Bore Range (mm)	Approx. Stem O.D. (mm)	O-Ring Size Shaft	O-Ring Size Tip	Case Qty.	Case Price
826500-0004	0-4	9	010	5-105	1	42.36
826500-0008	0-8	13	110	011	1	55.01
826500-0012	0-12	16	112	110	1	63.79
826300-0020	0-20	22	210	208	1	158.56

Replacement Parts

826501-0004	PTFE Plug, Size 4	1	14.57
826501-0008	PTFE Plug, Size 8	1	18.55
826501-0012	PTFE Plug, Size 12	1	20.65
826301-0020	PTFE Plug, Size 20	1	87.81
826502-0004	Valve Without Plug, Size 4	1	18.33
826502-0008	Valve Without Plug, Size 8	1	20.76
826502-0012	Valve Without Plug, Size 12	1	47.28
826302-0020	Valve Without Plug, Size 20	1	71.26





826500

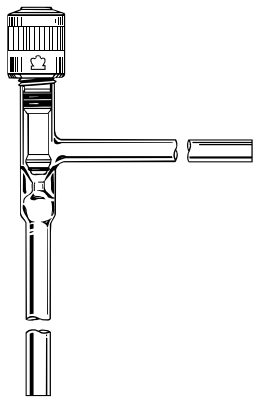
Right-Angle, with Tip O-Ring, PTFE Plug, HI-VAC®

For vacuum applications up to 5 x 10^{-7} Torr. Designed with a precision external thread for fine control. This valve can be used as a bleed up to 1/2 a turn. Full open position is at 1 1/2 turns. The shaft is non-rotating and the primary seal is made with a FKM o-ring on a tapered seat. PTFE shaft can be used continuously at system temperatures of 230°C, or intermittently at 275°C.

Kontes Article No.	Bore Range (mm)	Approx. Stem O.D. (mm)	O-Ring Size Shaft	O-Ring Size Tip	Case Qty.	Case Price
826510-0004	0-4	9	010	5-105	1	43.06
826510-0008	0-8	13	110	011	1	67.11
826510-0012	0-12	16	112	110	1	94.83
826310-0020	0-20	22	210	208	1	142.15

Replacement Parts

826501-0004	PTFE Plug, Size 4	1	14.57
826501-0008	PTFE Plug, Size 8	1	18.55
826501-0012	PTFE Plug, Size 12	1	20.65
826301-0020	PTFE Plug, Size 20	1	87.81
826512-0004	Valve Without Plug, Size 4	1	25.07
826512-0008	Valve Without Plug, Size 8	1	35.45
826512-0012	Valve Without Plug, Size 12	1	46.66
826312-0020	Valve Without Plug, Size 20	1	54.84



826510

Right-Angle, Low-Interference, PTFE Plug, HI-VAC®

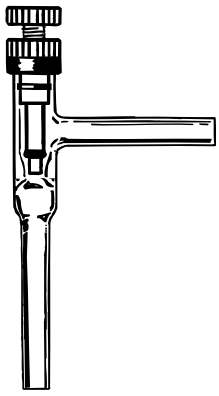
The design of this valve provides an unobstructed flow path when the plug is fully open. This low interference feature is of importance when dealing with slurries or high viscosity solutions. Plug is totally interchangeable with other HI-VAC valve counterparts. O-rings are FKM.

Kontes Article No.	Bore Range (mm)	Approx. Stem O.D. (mm)	— O-Ring Size — Outer Shaft	Inner Shaft	Tip	Case Qty.	Case Price
826430-0008	0-8	13	106	013	011	1	69.22
826430-0012	0-12	16	108	015	014	1	94.25

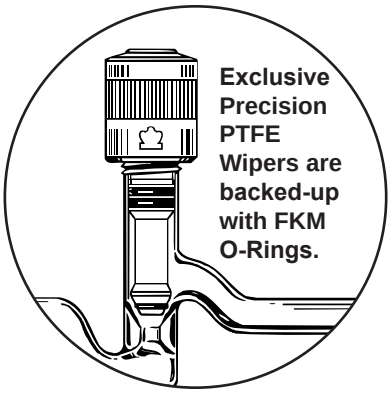
Replacement Parts

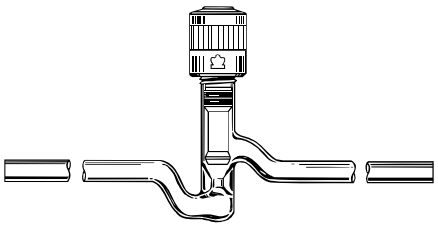
826431-0008	PTFE Plug, Size 8	1	54.00
826431-0012	PTFE Plug, Size 12	1	46.05

Note: Polyacetal knob is not recommended for use over 110°C.



826430





826600

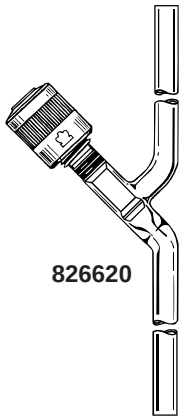
Straight, without Tip O-Ring, PTFE Plug, HI-VAC®

Similar to 826500 but without tip o-ring exposure. For vacuum applications up to 5 x 10^{-7} Torr. Designed with a precision external thread for fine control. This valve can be used as a bleed up to 1/2 a turn. Full open position is at 1 1/2 turns. Non-rotating PTFE shaft can be used continuously at system temperatures of 230°C, or intermittently at 275°C. O-rings are FKM.

Kontes Article No.	Bore Range (mm)	Approx. Stem O.D. (mm)	O-Ring Size Shaft	Case Qty.	Case Price
826600-0002	0-2	8	5-105	1	47.41
826600-0004	0-4	9	010	1	23.20
826600-0008	0-8	13	110	1	29.77
826600-0012	0-12	16	112	1	60.13

Replacement Parts

826601-0002	PTFE Plug, Size 2	1	10.91
826601-0004	PTFE Plug, Size 4	1	8.14
826601-0008	PTFE Plug, Size 8	1	12.69
826601-0012	PTFE Plug, Size 12	1	14.49
826502-0002	Valve Without Plug, Size 2	1	36.73
826502-0004	Valve Without Plug, Size 4	1	18.33
826502-0008	Valve Without Plug, Size 8	1	20.76
826502-0012	Valve Without Plug, Size 12	1	47.28



826620

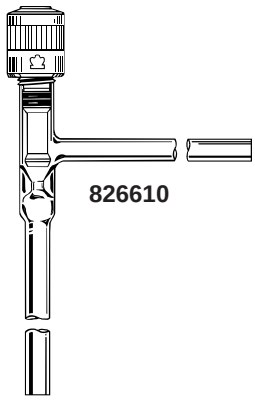
Straight, Low Hold-Up, without Tip O-Ring, PTFE Plug, HI-VAC®

Sidearms are bent to minimize liquid holdup that would occur in conventional valves. PTFE shaft seals protect the FKM o-rings from contact with the system. Seal design reduces outgassing.

Kontes Article No.	Bore Range (mm)	Approx. Stem O.D. (mm)	O-Ring Size Shaft	Case Qty.	Case Price
826620-0004	0-4	9	010	1	28.52
826620-0008	0-8	13	110	1	42.41

Replacement Parts

826601-0004	PTFE Plug, Size 4	1	8.14
826601-0008	PTFE Plug, Size 8	1	12.69
826622-0004	Valve Without Plug, Size 4	1	32.66
826422-0008	Valve Without Plug, Size 8	1	52.03



826610

Right-Angle, without Tip O-Ring, PTFE Plug, HI-VAC®

Similar to 826510 but without tip o-ring exposure. For vacuum applications up to 5 x 10^{-7} Torr. Designed with a precision external thread for fine control. This valve can be used as a bleed up to 1/2 a turn. Full open position is at 1 1/2 turns. Non-rotating PTFE shaft can be used continuously at system temperatures of 230°C, or intermittently at 275°C. O-rings are FKM.

Kontes Article No.	Bore Range (mm)	Approx. Stem O.D. (mm)	O-Ring Size Shaft	Case Qty.	Case Price
826610-0002	0-2	8	5-105	1	35.70
826610-0004	0-4	9	010	1	37.51
826610-0008	0-8	13	110	1	48.25
826610-0012	0-12	16	112	1	63.85

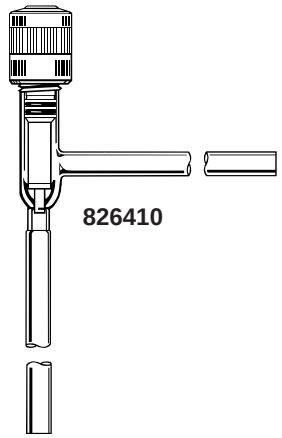
Replacement Parts

826601-0002	PTFE Plug, Size 2	1	10.91
826601-0004	PTFE Plug, Size 4	1	8.14
826601-0008	PTFE Plug, Size 8	1	12.69
826601-0012	PTFE Plug, Size 12	1	14.49
826412-0002	Valve Without Plug, Size 2	1	28.85
826512-0004	Valve Without Plug, Size 4	1	25.07
826512-0008	Valve Without Plug, Size 8	1	35.45
826512-0012	Valve Without Plug, Size 12	1	46.66

Note: Polyacetal knob is not recommended for use over 110°C.

Right-Angle, Extended-Tip, PTFE Plug, HI-VAC®

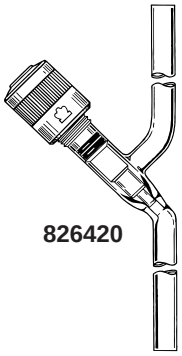
Designed with a precision external thread for fine control. The accurately controlled valve seat and the extended tip on the PTFE plug allow semi-needle valve control for both liquids and gases. The FKM o-ring on the shaft backs up machined-in PTFE ring seals for high vacuum use. The o-ring is shielded from direct exposure to gases and liquids within the system by these PTFE ring seals. Plug is interchangeable with other KONTES valve bodies of the same size.


826410

Kontes Article No.	Bore Range (mm)	Approx. Stem O.D. (mm)	O-Ring Size Shaft	Case Qty.	Case Price
826410-0002	0-2	8	5-105	1	40.46
826410-0004	0-4	9	010	1	27.68
Replacement Parts					
826411-0002	PTFE Plug, Size 2			1	13.39
826411-0004	PTFE Plug, Size 4			1	9.71
826412-0002	Valve Without Plug, Size 2			1	28.85
826412-0004	Valve Without Plug, Size 4			1	18.74

Straight, Low Hold-Up, Extended Tip, PTFE Plug, HI-VAC®

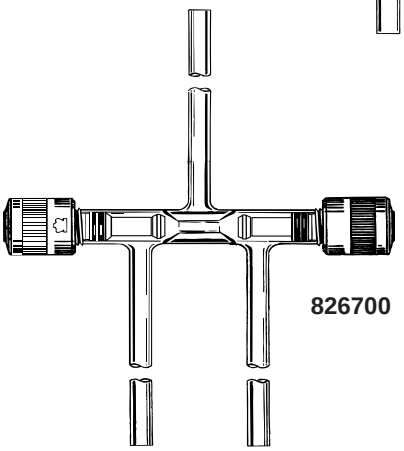
Sidearms are bent to minimize holdup of liquids. O-rings are FKM.


826420

Kontes Article No.	Bore Range (mm)	Approx. Stem O.D. (mm)	O-Ring Size Shaft	Case Qty.	Case Price
826420-0002	0-2	8	5-105	1	43.86
826420-0004	0-4	9	010	1	34.21
Replacement Parts					
826411-0002	PTFE Plug, Size 2			1	13.39
826411-0004	PTFE Plug, Size 4			1	9.71
826422-0002	Valve Without Plug, Size 2			1	32.96
826422-0004	Valve Without Plug, Size 4			1	24.78

Three-Way, without Tip O-Ring, PTFE Plug, HI-VAC®

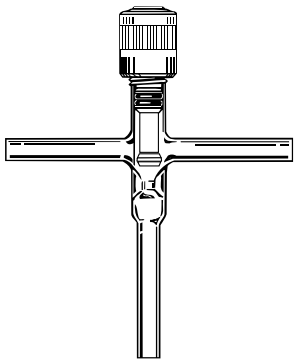
Three way configuration, without tip o-ring exposure. O-rings are FKM.


826700

Kontes Article No.	Bore Range (mm)	Approx. Stem O.D. (mm)	O-Ring Size Shaft	Case Qty.	Case Price
826700-0002	0-2	8	5-105	1	90.91
826700-0004	0-4	9	010	1	101.67
Replacement Parts					
826601-0002	PTFE Plug, Size 2 (2 Supplied)			1	10.91
826601-0004	PTFE Plug, Size 4 (2 Supplied)			1	8.14
826702-0002	Valve Without Plug, Size 2			1	77.81
826702-0004	Valve Without Plug, Size 4			1	56.71

T-Type, without Tip O-Ring, PTFE Plug, HI-VAC®

T-valve configuration, without tip o-ring exposure, allows closure of the bottom arm while vacuum or gases continue to flow through the side arms. O-rings are FKM.


826800

Kontes Article No.	Bore Range (mm)	Approx. Stem O.D. (mm)	O-Ring Size Shaft	Case Qty.	Case Price
826800-0004	0-4	9	010	1	31.40
826800-0008	0-8	13	110	1	35.37
Replacement Parts					
826601-0004	PTFE Plug, Size 4			1	8.14
826601-0008	PTFE Plug, Size 8			1	12.69
826802-0004	Valve Without Plug, Size 4			1	23.07
826802-0008	Valve Without Plug, Size 8			1	17.97

Note: Polyacetal knob is not recommended for use over 110°C.

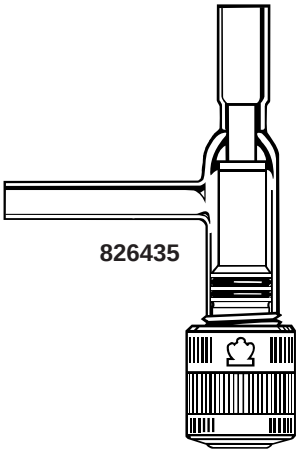


826400

Drain Valve, PTFE Plug, HI-VAC®

Design incorporates a PTFE plunger that allows the contents of the flask to drain directly through the bore of the plunger. When closed, the tip of the PTFE plug seals against the lower radius of the flask avoiding the dead space normally associated with standard drains. This permits total mixing and drainage of the flask contents. The contents of the flask drains through three openings into the main bore of the plug. Lower portion is 1/2" in diameter for attaching flexible tubing. The 12mm size will permit drainage of solids up to 2mm in diameter, the 6mm size will allow drainage of solids up to 1.5mm in diameter.

Kontes Article No.	Drain Valve (mm)	Case Qty.	Case Price
826400-0006	6	1	181.56
826400-0012	12	1	286.90



826435

Drain Valve, Extended Tip, PTFE Plug, HI-VAC®

Designed to be used as a drain for reaction kettles, flasks, etc. Valve is made with an extended tip which fills the seat area and permits total agitation of the contents of the vessel. Contents of the vessel drain through the sidearm. Supplied complete with the corresponding glass barrel having a single sidearm.

Kontes Article No.	Drain Valve (mm)	Case Qty.	Case Price
826435-0012	12	1	117.37
826435-0020	20	1	343.27

Note: Polyacetal knob is not recommended for use over 110°C.

LUBRI-FLO®, PTFE

Replacement for 17021H, 17800, 17810 and 29050H. Liquid contact of stopcock surfaces are PTFE. For easier assembly, tip should be wetted before installation.

Kimble Article No.	Bore of Plug (mm)	Case Qty.	Case Price
41006F-2	2.8	1	50.78



41006F

LUBRI-FLO®, PTFE

Replacement for 29053H and 17121H. Liquid contact of stopcock surfaces are PTFE. A nylon threaded closure (15-415 GPI) provides secure attachment to 29053H separatory funnels and 171211H burets. For easier assembly, tip should be wetted before installation.

Kimble Article No.	Bore of Plug (mm)	Case Qty.	Case Price
41007F-2	2.8	1	56.74

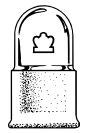


41007F

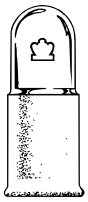
Cap-Type

Cap-type ⅋ stopper fits over tubes and other apparatus having a ⅋ inner opening.

Kontes Article No.	⅋ Joint	Case Qty.	Case Price
851900-1420	14/20	1	16.56
852000-2440	24/40	1	22.43



851900



852000

Hex Head, Hollow, ⅋ Medium Length

Hollow, hexagonal head ⅋ stopper that is easily gripped. May be set on the flattened top to avoid contamination of the ground surface.

Kontes Article No.	⅋ Joint	Case Qty.	Case Price
850400-1420	14/20	1	20.48
850400-1922	19/22	1	19.56
850400-2425	24/25	1	24.66
850400-2926	29/26	1	28.44
850400-3428	34/28	1	31.84



850400

Hex Head, Hollow, ⅋ Full Length

Hollow, hexagonal head, ⅋ stopper. May be set on the flattened top to avoid contamination of the ground surface.

Kontes Article No.	⅋ Joint	Case Qty.	Case Price
850800-2440	24/40	1	25.98
850800-2942	29/42	1	28.56



850800

Hex Head, Hollow, Safe-Lab®

Safe-Lab® hollow hexagonal head stopper has a polypropylene extraction nut permitting easy removal from glass outer joints.

Kontes Article No.	⅋ Joint	Case Qty.	Case Price
850405-1420	14/20	1	21.49
850405-2440	24/40	1	33.08
850405-2942	29/42	1	37.95

Safe-Lab is a registered trademark of Bel-Art.



850405

O-Ring Connector Type

Used to seal flasks or as a port closure on the 216040 vacuum manifold. Size 15 connector is supplied with one size 116 FKM o-ring.

Kontes Article No.	Approx. I.D. (mm)	Approx. Overall Height (mm)	Case Qty.	Case Price
851810-0015	16	25	1	16.56



851810



41900R

⧩, Flask Length

KIMAX pennyhead stopper used with flasks, mixing cylinders, separatory funnels, etc. Length of ground zone given below is for the outer member into which the stopper fits. Ground zone of stoppers is slightly longer. All stoppers are solid except ⧩ stopper size 38. Designed from ASTM Specification E675.

Kimble Article No.	⧩ Stopper Size	Approx. Dia. at Large End of Ground Zone (mm)	Length of Ground Zone (mm)	Approx. Height Above ⧩ Grind (mm)	Shelf-Pack Qty.	Case Qty.	Case Price
41900R-13	13	13.4	14.0	21	1	6	44.22
41900R-38	38	38.0	30.0	39	1	6	161.64



851000

⧩, Full Length

Pennyhead ⧩ stopper for use in the same size outer joints. Sizes ⧩ 10/30 through ⧩ 19/38 are solid. Sizes ⧩ 24/40 and larger are hollow.

Kontes Article No.	⧩ Joint	Case Qty.	Case Price
851000-1030	10/30	1	16.19
851000-1435	14/35	1	22.98
851000-1938	19/38	1	22.98
851000-2440	24/40	1	26.63
851000-2942	29/42	1	27.15
851000-3445	34/45	1	29.23
851000-4550	45/50	1	41.22



850100

⧩, Medium Length

Solid ⧩ pennyhead stopper for volumetric flasks, centrifuge tubes, etc. Meets ASTM Standard E 694.

Kontes Article No.	⧩ Stopper Size	Case Qty.	Case Price
850100-0008	8	1	7.48
850100-0009	9	1	7.48
850100-0013	13	1	7.63
850100-0016	16	1	10.38
850100-0019	19	1	11.16
850100-0022	22	1	13.01
850100-0027	27	1	14.98
850100-0032	32	1	20.36
850100-0038	38	1	26.15



850500
850505

⧩, Medium Length

Pennyhead stopper sizes ⧩ 10/18 through ⧩ 19/22 are solid. Sizes ⧩ 24/25 and larger are hollow.

Kontes Article No.	⧩ Joint	Case Qty.	Case Price
850500-1018	10/18	1	13.18
850505-1410	14/10	1	13.57
850500-1420	14/20	1	13.70
850500-1922	19/22	1	15.27
850500-2425	24/25	1	24.66
850500-2926	29/26	1	28.44
850500-3428	34/28	1	37.07



851800

⧩, with Lug, KEM-KLAMP®

Solid pennyhead stopper designed for use with 675500 Kem-Klamps. Top has a lug attachment to engage the spring portion of the Kem-Klamp.

Kontes Article No.	⧩ Joint	Case Qty.	Case Price
851800-1420	14/20	1	15.01
851800-2440	24/40	1	20.88

Polyethylene

Polyethylene stoppers are an alternative to standard glass and PTFE stoppers. They provide leak-proof, air-tight seals at less cost. Wide top flange for ease of use.

Kontes Article No.	For ⧩ Joint Sizes	Case Qty.	Case Price
774240-0014	14/10, 14/20, 14/35	100	7.37
774240-0019	19/22, 19/38	100	8.48
774240-0024	24/25, 24/40	100	9.50
774240-0029	29/26, 29/42	100	10.20



774240

Polyethylene, Linear High-Density

Replacement part for items that are ground to ⧩ stopper dimensions. Yellow and blue stopper has a closed bottom. The enlarged flange is designed to protect the neck if the glass object is tipped over.

Kimble Article No.	Size	Fits Neck Ground to ⧩ Stopper Size	Shelf-Pack Qty.	Case Qty.	Case Price
28160R-9	9	9	1	6	14.40
28160R-13	13	13	1	6	14.40
28160R-16	16	16	1	6	19.14
28160R-19	19	19	1	6	19.14
28160R-22	22	22	1	6	23.82
28160R-27	27	27	1	6	23.82

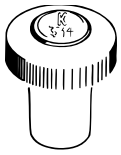


28160R

PTFE, Solid, Flat Head, ⧩ Flask Length

Solid, bottle-style stopper made of PTFE. Color button insert on top of the stopper serves as a means of color coding.

Kontes Article No.	⧩ Stopper Size	Approx. Dia. Large End (mm)	Length of Ground Zone (mm)	Approx. Height Above ⧩ Zone (mm)	Color Code	Case Qty.	Case Price
850540-0014	14	14.5	20	10	Red	1	9.12
850540-0019	19	18.8	22	12	Grey	1	11.35
850540-0024	24	24.0	30	13	Blue	1	22.72
850540-0029	29	29.2	35	13	Green	1	29.63
850540-0034	34	34.5	40	15	Orange	1	33.27



850540

PTFE, Solid, Color-Coded, Key-Head, ⧩ Flask Length

Used with flasks, mixing cylinders, separatory funnels, etc. Length of ground zone given below is for the outer member into which the stopper fits. All stoppers, sizes 9 through 22 are solid, and sizes 32 through 38 are hollow. Designed from ASTM Specification E675.

Kimble Article No.	⧩ Stopper Size	Approx. Diameter at Large End (mm)	Length of Ground Zone (mm)	Color Code	Shelf-Pack Qty.	Case Qty.	Case Price
41901R-9	9	9.4	14.0	Black	1	6	36.24
41901R-13	13	13.4	14.0	Orange	1	6	42.66
41901R-16	16	16.5	15.0	Blue	1	6	54.66
41901R-19	19	19.7	17.0	Green	1	6	65.16
41901R-22	22	22.05	20.5	Yellow	1	6	62.76
41901R-32	32	32.15	21.5	Gray	1	6	121.44
41901R-38	38	38.0	30.0	Black	1	6	156.84



41901R



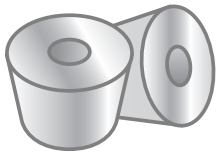
852050

Rubber, "Pluro", Set of Seven

This autoclavable neoprene rubber adapter set consists of seven cones designed to fit buchner and fritted glass funnels. Can be used singly, or nested with adjacent sizes. Eliminates boring of special size holes in rubber stoppers and difficulties of insertion and removal.

Size	O.D. Top & Bottom (mm)	I.D. Top & Bottom (mm)	Height (mm)	Wall (mm)
1	21x11	17x7	21	2
2	27x16	22x11	21	2.5
3	37x22	31x16	25	3
4	46x29	39x22	29	3.5
5	58x38	50x30	35	4
6	69x45	60x36	40	4.5
7	86x57	75x46	45	5.5

Kontes Article No.	Description	Case Qty.	Case Price
852050-0070	Set of Seven	7	27.03

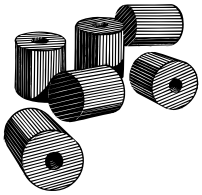


953715
953716
953763

Silicone Stoppers, with Holes

Stoppers manufactured from pure silicone rubber and are steam autoclavable.

Kontes Article No.	Stopper No.	Hole Size (in.)	Case Qty.	Case Price
953715-0501	5	3/8	1	11.94
953715-0801	8	3/8	1	14.86
953763-0801	8	9/16	1	14.93

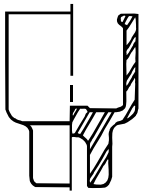


774200

Silicone

Used in centrifugal separators, gas sampling tubes and the 672800 septum holder. Stopper features easy syringe penetration and comes in a choice of hole styles.

Kontes Article No.	Style	Stopper O.D. (mm)	Case Qty.	Case Price
774200-0022	Blind Hole	6	12	20.13
774200-0023	Full Hole	6	12	27.24



774250
774261

Rubber Sleeve, Plug-Type

Hollow, plug-type stopper fits into the neck of the apparatus. Sleeve extension fits over the neck for a secure seal. Diaphragm can be punctured with a syringe needle. Use for outgassing NMR tubes, pressure venting or adding reactants via syringe.

Kontes Article No.	Plug Diameter (mm)	Stopper Fits	Rubber Color	Case Qty.	Case Price
774250-0005	5	5-6 mm OD	red	50	39.68
774261-0005	5	5-6 mm OD	white	50	4.68
774261-0006	6	6-7 mm OD	white	50	8.48
774250-0007	7	7-8 mm OD	red	50	17.95
774261-0008	8	9-10 mm OD	white	50	18.31
774261-0010	10	⅋ 10/18	white	50	36.07
774250-0011	11	11-12 mm OD	red	50	43.24
774250-0013	13	13-14 mm OD	red	50	43.24
774250-0014	14	⅋ 14/20	red	50	28.52
774261-0014	14	⅋ 14/20	white	50	21.02
774250-0016	16	16-17 mm OD	red	50	64.68
774261-0019	19	⅋ 19/22	white	50	37.33
774261-0024	24	⅋ 24/40	white	50	56.14



774260

Rubber Sleeve, Plug-Type, Kit

Hollow, plug-type, white rubber stopper fits the neck of various apparatus. Sleeve extension fits over the neck for a secure seal. Diaphragm is easily punctured with a syringe needle. Kit contains 120 stoppers of assorted sizes in a molded polyethylene storage case with a hinged lid (see chart below).

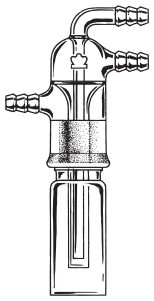
Kontes Article No.	Case Qty.	Case Price
774260-0000	1	59.78

No.	Stopper Fits	Qty. Per Kit
1	⅋ 24/40 Joints	10
2	⅋ 19/22 Joints	10
3	⅋ 14/20 Joints	10
4	⅋ 10/18 Joints	20
5	9-10 mm O.D. Standard Wall Glass Tubing	20
6	8 mm O.D. Standard Wall and 9 mm O.D. Medium Wall Glass Tubing	20
7	7 mm O.D. Standard Wall	30

Sublimator, Micro

For atmospheric or reduced pressure sublimation of quantities as small as 0.5 mg. Material is charged into the flask and the sublimate is collected on the flat bottom cold finger-type condenser.

Kontes Article No.	Joint	Hose Connections	Approx. Overall Height x Width (mm)	Case Qty.	Case Price
306500-0000	24/25	#1	155 x 70	1	104.40
Component Parts					
306501-0000	Condenser			1	77.98
306502-0000	Flask, 30 mL			1	28.83

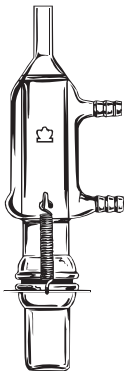


306500

Sublimator, Micro

Substantial yields of high purity sublimate can be collected on the large, cylindrical condenser surface of this apparatus. Also, a lubricant-free o-ring connector enables the two glass parts to be gently separated for maximum product recovery. When inverted, the vacuum connection at the condenser top serves as a convenient funnel for product removal. O-ring is ethylene propylene.

Kontes Article No.	Approx. Flask I.D. X Height (mm)	Hose Connections	Approx. Overall Height x Width (mm)	Case Qty.	Case Price
855500-2050	21 x 50	#1	205 x 65	1	147.48
855500-3075	31 x 75	#2	300 x 90	1	157.90
Component Parts					
855501-2050	Condenser, 20 x 50 mm			1	121.04
855501-3075	Condenser, 30 x 75 mm			1	127.55
855502-2050	Flask, 20 x 50 mm			1	21.54
855502-3075	Flask, 30 x 75 mm			1	26.10
855503-2050	Holding Yoke			1	21.08
855503-3075	Holding Yoke			1	68.70
758292-0120	O-ring, EP, Size 120 (For 21 x 50 Unit) Pkg./10 (1 Supplied)			10	45.64
758292-0223	O-ring, EP, Size 223 (For 31 x 75 Unit) Pkg./5 (1 Supplied)			5	32.39



855500

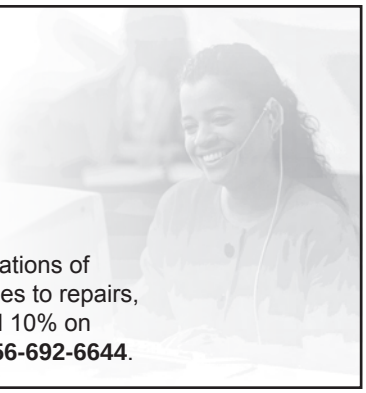
Hose Connector Tubing Size Chart	
Hose Connector Size	Fits Flexible Tubing I.D.
1	1/4"
2	3/8"
3	1/2"
4	3/4"

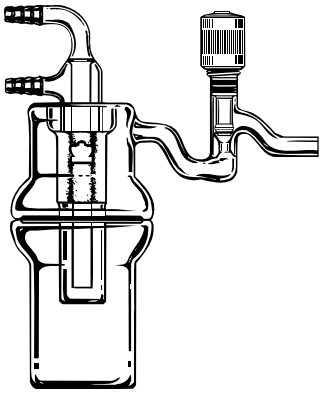


- **Custom Fabrications**
- **Quality Repairs**
- **Modifications of All Kinds**
- **No Order Too Small**
- **Quick Turnaround**

KONTES
custom glass shop
*call toll-free **800-682-6644***
customglass@kimble-chase.com

Contact the **Kontes Custom Glass Shop** at KIMBLE CHASE for modifications of standard products or fabrication of your unique designs. And when it comes to repairs, we can save you up to 75% of the cost of a new item. Save an additional 10% on repairs of Kontes or Kimble Brand products. Fax your requirements to **856-692-6644**.



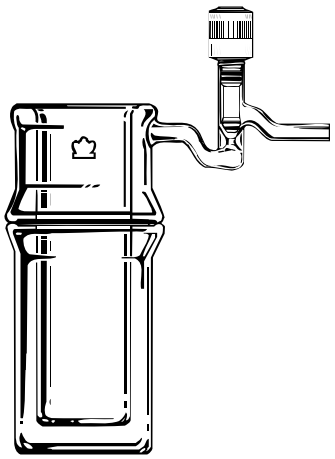


855610

Sublimator, Macro

Used where the amount of product is expected to be in the range of 5-10 grams. Condenser can be removed and a dry ice-acetone mixture or liquid nitrogen may be used in the well for a greater temperature differential. Designed to allow sufficient distance to avoid bridging of the sublimate with the starting material. Seal is made with the o-ring connection and size 229 ethylene-propylene o-ring. Vacuum control is provided with an 826500, 0-4 mm high vacuum valve. Plug is 826501-0004.

Kontes Article No.	Approx. Flask I.D. x Height (mm)	Hose Connections	Approx. Overall Height x Width (mm)	Case Qty.	Case Price
855610-0000	51 x 70	#2	280 x 160	1	258.40
Component Parts					
855601-0000	Flask			1	43.45
855602-0000	Condenser with Size 4 PTFE Valve			1	176.17
855611-0000	Inlet Adapter, $\overline{S}$ 24/40			1	42.16
758292-0229	O-Ring, EP, Size 229, Pkg./5 (1 Supplied)			5	34.92
Accessory					
675000-0075	Clamp Size 75			1	83.99



855710

Sublimator, Macro

Used where the amount of product is expected to be 10 grams and above. Flask O.D. is 114 mm and condensing surface is 80 mm O.D. The mean free path is approximately 20 mm. Flask and condenser are connected without grease with a size 349 ethylene-propylene o-ring. Sublimate collects on the ground and polished surface which is flat and parallel to the inside bottom of flask. Vacuum control is provided with a 0-8 mm bore 826500 high vacuum valve. Plug is 826501-0008.

Kontes Article No.	Approx. Flask I.D. x Height (mm)	Approx. Overall Height x Width (mm)	Case Qty.	Case Price
855710-0000	200 x 105	270 x 240	1	454.13
Component Parts				
855711-0000	Condenser with Size 8 PTFE Valve		1	361.49
855702-0000	Flask		1	96.57
758290-0349	O-Ring, EP, Size 349		1	23.81
Accessory				
613750-0000	Clamp, Fits 4" I.D. Ground Flange		1	143.17



881338

Support, Jack Stand

These positioners provide a table support for hot plates, water baths, glassware and many other items. Simply turn the knob to get the exact height required. Construction is of chemically-resistant anodized aluminum and the top plate has a skid pad to prevent slippage. A large, easily gripped knob makes height adjustments easy.

Kontes Article No.	Closed x Open Height (in.)	Top Plate Size (in.)	Max. Support Weight (lbs.)	Case Qty.	Case Price
881338-0000	2.75 x 7.75	6.25 x 7.5	10	1	333.69

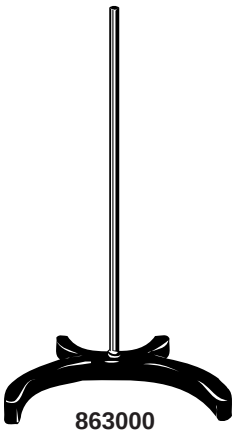
Hose Connector Tubing Size Chart

Hose Connector Size	Fits Flexible Tubing I.D.
1	1/4"
2	3/8"
3	1/2"
4	3/4"

Stand and Clamp, Heavy Duty

Heavy, painted base with a 15/16" bright, nickel-plated rod. Overall height is 30". Support clamp is clear anodized aluminum. Its side slot is at a 90° angle to accommodate a 1/2" rod. Tightens with Allen screws.

Kontes Article No.	Description	Case Qty.	Case Price
863000-0000	Support Stand	1	139.54
864000-0000	1/2" Support Clamp	1	88.56



863000



864000

Stand, Tripod Base

Heavy steel base with 5/8" diameter stainless steel rods. Overall height is 29". Accessory power hold aluminum clamp has large knobs for a powerful grip. Holds rods from 3/8" to 5/8" in diameter. Safety stop with a 5/8" diameter hole is provided with each clamp.

Kontes Article No.		Case Qty.	Case Price
864200-0000		1	195.44
Accessory			
864210-0000	Clamp and Safety Stop	1	62.57



864200



864210

Stand, Rectangular Base

Base is made of solid epoxy resin for maximum resistance to chemicals and mechanical abuse. With a copper-covered steel support rod.

Kontes Article No.	Rod Length x Dia. (inches)	Base Size (inches)	Case Qty.	Case Price
864300-0018	18 x 5/16	4 x 6	1	46.21
864300-0020	20 x 3/8	5 x 8	1	53.14
864300-0024	24 x 7/16	6 x 9	1	60.83
864300-0036	36 x 1/2	6 1/2 x 11	1	77.63



864300

Stand, Tripod Base

Tripod base is heavy, rugged, cast iron for stability. Finish is chemical-resistant, baked black enamel. Support rod and base are precisely threaded to eliminate instability.

Kontes Article No.	Rod Length x Dia. (inches)	Case Qty.	Case Price
864310-0020	20 x 3/8	1	73.10
864310-0024	24 x 7/16	1	83.44
864310-0036	36 x 1/2	1	85.94



864310

Stand, L-Shaped Base

Cast iron L-shaped base has three mounting holes for supporting groups of equipment concentrated in a small space. Base has two 6 3/4" (17cm) legs for stability, and three mounting holes tapped for 1/2" (13mm) accessory support rods. Bases can be nested for easy storage. Includes one 24"L x 1/2" dia. (610 x 13mm) nickel-plated steel rod.

Kontes Article No.		Case Qty.	Case Price
864320-0000		1	74.35
Accessory			
864321-0000	Rod, 36" x 1/2"	1	18.05



864320

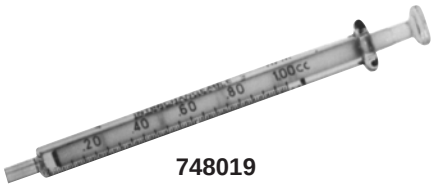


868300

Glass Luer, MICRO-MATE®

Glass luer tip syringe with permanent graduations. Flanges have flat sides to prevent rolling. Parts are completely interchangeable.

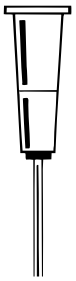
Kontes Article No.	Capacity (cc)	Graduations (cc)	Case Qty.	Case Price
868300-0001	1	1/10	1	19.92
868300-0002	2	1/10	1	16.92
868300-0005	5	1/5	1	18.91
868300-0010	10	1/5	1	21.89
868300-0020	20	1	1	25.58



748019

Micro Syringe, Polyethylene

Kontes Article No.	Capacity (cc)	Graduations (cc)	Case Qty.	Case Price
748019-0001	1	0.01	12	5.63



868280

Needle, Safety Tip, Blunt End, Syringe

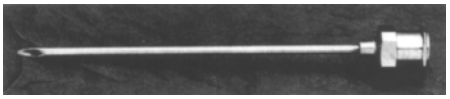
Non-sterile stainless steel needle with an inert plastic hub and a blunt end for safety.

Kontes Article No.	Gauge	O.D. (mm)	O.D. (in.)	Needle Length (in.)	Case Qty.	Case Price
868280-1801	18	1.25	0.050	1.0	12	3.50
868280-2001	20	0.90	0.036	1.0	12	3.15
868280-2201	22	0.70	0.028	1.0	12	3.44

Needle, Hypodermic, Metal Hubbed

American Standard luer short hub. Needle is 304 full hard stainless steel. Hub is chrome-plated brass. Needle is supplied unsterilized in packages of six.

Kontes Article No.	Gauge	O.D., Inches	I.D., Inches	Case Qty.	Case Price
H90039-0000	26s	.0185	.0045	6	39.08



H90039

Needle, Stainless Steel, 6, 9 and 12 inch

American Standard luer short hub. Needle is 304 full hard stainless steel. Hub is chrome-plated brass. Needle is supplied unsterilized in packages of two. All needles have 22° bevel point style #2.

Kontes Article No.	Gauge	O.D. (in.)	I.D. (in.)	Working Range (mL)	Length (in.)	Case Qty.	Case Price
H90018-0006	18	0.049	0.033	25-50	6	2	15.49
H90018-0009	18	0.049	0.033	25-50	9	2	15.49
H90018-0012	18	0.049	0.033	25-50	12	2	15.49
H90020-0006	20	0.035	0.023	5-30	6	2	15.49
H90020-0009	20	0.035	0.023	5-30	9	2	15.49
H90020-0012	20	0.035	0.023	5-30	12	2	15.49
H90022-0006	22	0.028	0.016	0-10	6	2	15.49
H90022-0009	22	0.028	0.016	0-10	9	2	15.49
H90022-0012	22	0.028	0.016	0-10	12	2	15.49

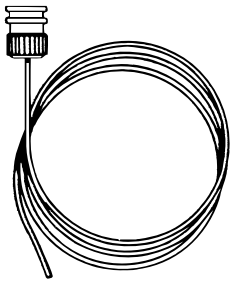


H90018
H90020
H90022

PTFE Tubing with CTFE Luer Lock Adapter

This tubing is supplied with an integral male luer lock for easy connection to Flex-Columns.

Kontes Article No.	Description	Material	Case Qty.	Case Price
H90669-0005	Tubing, 1/16" OD x 5',with integral luer lock	Tubing - PTFE Luer Lock - CTFE	5	142.14



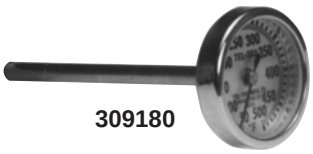
H90669

See 953921 , 420821, H90669, H88800 , and 420817 for a complete listing of chromatography adapters, fittings, valves and tubing.

Bi-Metallic, °C

One inch diameter dial face.

Kontes Article No.	Description	Stem O.D. (mm)	Case Qty.	Case Price
309180-0290	Bi-metallic Thermometer, 10-290°C	4	1	15.87

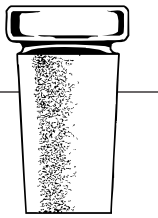


309180

Thermometer Adapter, ⅋ 10/18 to ⅋ 7/12

Converts ⅋ 10/18 outer thermometer joints to ⅋ 7/12. The bulb of a 40 mm, ⅋ 7/12 thermometer will be positioned the same as the bulb of a 25 mm, ⅋ 10/18 thermometer when used with this adapter in semi-micro items. Thermometer is not included.

Kontes Article No.	Converts	Case Qty.	Case Price
309250-0000	⅋ 10/18 to ⅋ 7/12	1	50.77



309250



Typical Application

Thermometer not included.

See more Thermometer Adapters in the ***ADAPTERS*** section.

Thermometer

KIMAX medium length ⅋ 10/18 thermometer with a range of 14 to 38 degrees C in 0.2 degrees. Retested for accuracy within ± 0.2 degrees C.

Kimble Article No.	Range °C	⅋ Joint	Stated Immersion (mm)	Case Qty.	Case Price
15123T-1025	14-38	10/18	28	1	96.90



15123T

⅋ 7/12, White Back, °C, Lab-Grade

Laboratory-grade thermometer with proportions smaller than standard 309000 and 871000 ⅋ thermometers. The ⅋ 7/12 joint will assemble with BANTAM-WARE™ items when a 309250 adapter is used. Very little heat is absorbed in causing the mercury column of this thermometer to respond.

Kontes Article No.	Range °C	Subdiv. °C	Immersion (mm)	Case Qty.	Case Price
308900-0211	0 to 150	1	20	1	35.21
308900-0231	0 to 300	2	20	1	50.43



308900

⅋ 10/18, Yellow Back, °C, Lab-Grade, BANTAM-WARE®

Laboratory grade, with a ⅋ 10/18 joint. Filled with nitrogen above the mercury column. **The actual immersion length** of KONTES 309000 jointed 10/18 thermometers **is 12 mm longer than the stated immersion.** This design feature permits interchangable use in either 10/18 or 10/30 joints to provide the same bulb position.

Kontes Article No.	Range °C	Subdiv. °C	Stated Immersion (mm)	Actual Immersion (mm)	Case Qty.	Case Price
309000-0021	-10 to 250	1	25	37	1	40.47
309000-0023	-10 to 360	1	25	37	1	42.59



309000

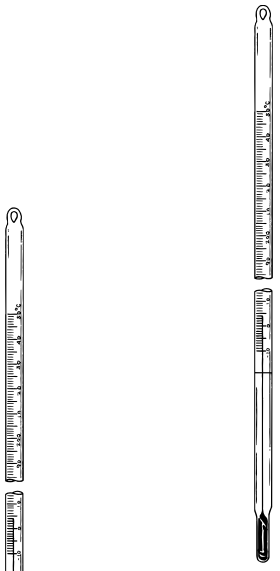
⅋ 10/30, Yellow Back, °C, Lab-Grade

Laboratory-grade, with a ⅋ 10/30 joint. Filled with nitrogen above the mercury column.

Kontes Article No.	Range °C	Subdiv. °C	Immersion (mm)	Length Above ⅋ Joint (in.)	Case Qty.	Case Price
871000-0315	-10 to 150	1	76	9.5	1	41.87
871000-0125	-10 to 250	1	25	11.5	1	44.55
871000-0225	-10 to 250	1	51	11.5	1	44.55
871000-0325	-10 to 250	1	76	11.5	1	44.55
871000-0136	-10 to 360	1	25	13.5	1	44.55
871000-0336	-10 to 360	1	76	13.5	1	45.43



871000



870505



870790



309140



309150



870605

Partial Immersion (76 mm), Yellow Back, °C, Lab-Grade

Laboratory-grade, calibrated for 76 mm (3") immersion. Outside diameter is 6-7 mm. Nitrogen filled above the mercury column. All thermometer subdivisions are 1°C.

Kontes Article No.	Actual Range °C	Approx. Overall Length (mm)	Case Qty.	Case Price
870505-0051	-35 to 50	305	1	17.93
870505-0110	-20 to 110	305	1	13.24
870505-0151	-20 to 150	305	1	14.97
870505-1260	-10 to 250	380	1	19.83
870505-0405	-10 to 405	400	1	24.90

Partial Immersion (76 mm), White Back, °C, Non-Mercury

Red mineral spirits column manufactured in compliance with N.I.S.T. standards but supplied without a certificate. Accuracy is ± 1.5°C.

Kontes Article No.	Actual Range °C	Approx. Overall Length (mm)	Case Qty.	Case Price
870790-0311	-20 to 110	305	1	17.71
870790-0315	-20 to 150	305	1	24.98
870790-0325	-10 to 250	380	1	49.42

Partial Immersion (40 mm), White Back, °C, Shortie

Mercury-filled with nitrogen above the column. Use with threaded apparatus.

Kontes Article No.	Range °C	Subdiv. °C	Length (mm)	O.D. (mm)	Case Qty.	Case Price
309140-0200	0 to 200	2	150	5	1	17.54
309140-0300	0 to 300	2	150	5	1	17.37

Partial Immersion (40 mm), Yellow Back, °C, Shortie

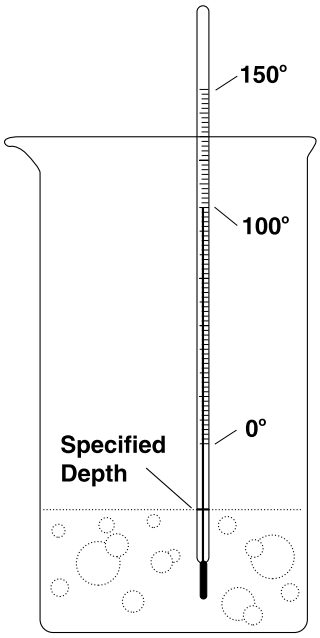
Mercury-filled with nitrogen above the column. Overall length is 150 (+25, -0)mm. O.D. is 5.5 to 6 mm. Made to N.I.S.T. accuracy tolerances but supplied without a certificate. Accuracy is ± 2°C.

Kontes Article No.	Range °C	Subdiv. °C	O.D. (mm)	Approx. Overall Length (mm)	Case Qty.	Case Price
309150-0200	0 to 200	2	5.7 ± 0.2	160 ± 10	1	16.77
309150-0250	0 to 250	1	5.7 ± 0.2	200 ± 10	1	18.15
309150-0300	0 to 300	2	5.7 ± 0.2	160 ± 10	1	17.17

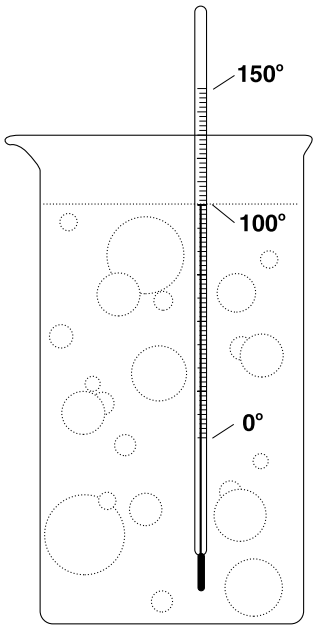
Total Immersion, Yellow Back, °C, Lab-Grade

Laboratory-grade, total immersion type. Mercury-filled with nitrogen above the mercury.

Kontes Article No.	Actual Range °C	Subdiv. °C	Back Color	O.D. (mm)	Approx. Overall Length (mm)	Case Qty.	Case Price
870605-1260	-10 to 250	1	Yellow	6-7	380	1	19.83



PARTIAL IMMERSION thermometers are designed with scales calibrated to indicate the true temperature when the thermometers are immersed to specified depths. The portion that should be immersed is indicated on the back of each thermometer.

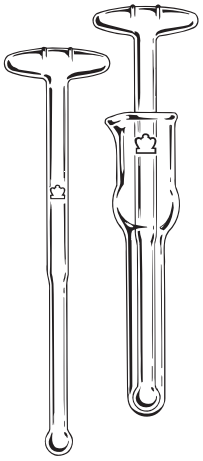


TOTAL IMMERSION thermometers are designed with scales calibrated to indicate the true temperature when the bulb and the portion of the mercury column, to just below the temperature being read, is exposed to the temperature to be measured.

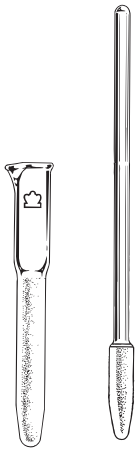


179700 **179750**

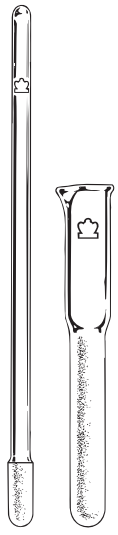
See ***ADAPTERS*** section for Thermometer Adapters.



Dounce



Duall®



Potter-Elvehjem

Principle of Operation

Tissue grinders produce homogenates by a combination of shearing and compression actions. The tissue sample is progressively ground (sheared) into smaller pieces at the rounded end of the pestle as the spinning pestle is lowered into the tube. As the pestle is forced lower into the tube, the sample is displaced and forced between the straight outside wall of the pestle and the inside wall of the tube, compressing the tissue cells until they rupture. When the tube is pulled away from the pestle, a slight vacuum is created that pulls the sample back past the compression area, resulting in an additional homogenization stroke. The degree of homogenization is controlled by the clearance between the pestle's and tube's cylindrical section (radial distance usually 0.002 - 0.003 inches), the rotational speed of the pestle and the number of compression strokes made.

There are three basic types of tissue grinders: Dounce, DUALL and Potter-Elvehjem.

Dounce

- Round, ball shape on lower portion of pestle.
- Designed for cellular studies where the nucleus needs to remain intact.
- Supplied with two pestles that are used in the same tube:
  - — Large clearance pestle is used for the initial sample reduction.
  - — Small clearance pestle is used to form the final homogenate.
- Stainless steel version is designed to disperse particles ranging in size from 0.1 to 1.0 microns (e.g. viruses).

DUALL®

- Conical shape on the lower portion of the pestle:
  - — Conical shape provides a relatively large surface area for grinding, making this type the most efficient.
  - — Sample is progressively ground to a smaller size as the pestle is spun and lowered into the tube.
  - — Homogenate is produced as the sample is forced through the cylindrical section of the tube.
- Ground glass pestle versions are best suited for connective tissues such as muscle, heart and lung.
- PTFE pestle versions should be used for homogenizing soft tissues such as brain and liver.

Potter-Elvehjem

- Rounded shape on the lower portion of the pestle (sometimes considered to be a Dounce style):
  - — Sample is progressively ground smaller in the rounded section.
  - — Homogenate is produced as the sample is forced through the cylindrical section.
- Does not provide as much grinding surface as the DUALL style because of the differences in the pestles' tip shape (round vs. conical).
- Ground glass pestle versions are suited for connective tissues.
- PTFE pestle versions are used with softer tissues.
- **Tenbroeck** tissue grinders are specially modified versions of the Potter-Elvehjem style:
  - — Hollow glass pestles allow the addition of ice water to keep samples chilled during homogenization.

In choosing the correct tissue grinder for a particular application, there are two rules that apply:

1. Conically shaped pestles homogenize better than pestles with a rounded shape.
2. Ground glass to ground glass surfaces homogenize better than smooth glass to smooth glass or PTFE to smooth glass.

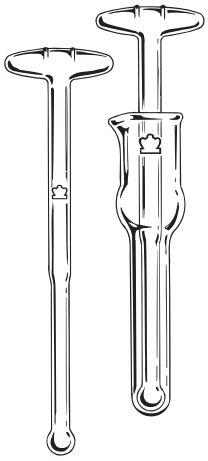
Using these rules, a glass DUALL tissue grinder produces the finest homogenate while a glass Dounce will produce a relatively coarse homogenate.

Stated clearances for the tubes and pestles on the Tissue Grinder pages are "total" not "annular".

Dounce, All-Glass

Designed primarily for cellular work where the nucleus remains intact after homogenization.

- All-glass construction.
- Two pestles are supplied with each complete unit:
- Large clearance pestle is used for the initial sample reduction.
- Small clearance pestle is used to form the final homogenate.
- Replacement components are available and completely interchangeable.



885300

Kontes Article No.	Working Capacity (mL)	Pestle "A" Large Clearance (in.)	Pestle "B" Small Clearance (in.)	Tube Overall (mm)	Case Qty.	Case Price
885300-0000	0.5	.0025-.0055	.0005-.0025	37	1	85.85
885300-0001	1	.0025-.0055	.0005-.0025	88	1	85.85
885300-0002	2	.0030-.0050	.0005-.0025	60	1	98.44
885300-0007	7	.0028-.0047	.0008-.0022	125	1	87.07
885300-0015	15	.0035-.0065	.0010-.0030	157	1	97.72
885300-0040	40	.0030-.0060	.0010-.0030	215	1	112.99
885300-0100	100	.0020-.0100	.0005-.0055	232	1	243.04

Component Parts

885301-0000	Large Clearance Pestle, 0.5 mL	1	24.65
885301-0001	Large Clearance Pestle, 1 mL	1	24.65
885301-0002	Large Clearance Pestle, 2 mL	1	29.84
885301-0007	Large Clearance Pestle, 7 mL	1	36.25
885301-0015	Large Clearance Pestle, 15 mL	1	37.66
885301-0040	Large Clearance Pestle, 40 mL	1	54.43
885301-0100	Large Clearance Pestle, 100 mL	1	76.41
885302-0000	Small Clearance Pestle, 0.5 mL	1	24.65
885302-0001	Small Clearance Pestle, 1 mL	1	24.65
885302-0002	Small Clearance Pestle, 2 mL	1	29.84
885302-0007	Small Clearance Pestle, 7 mL	1	31.99
885302-0015	Small Clearance Pestle, 15 mL	1	37.66
885302-0040	Small Clearance Pestle, 40 mL	1	54.43
885302-0100	Small Clearance Pestle, 100 mL	1	76.41
885303-0000	Tube, 0.5 mL	1	35.13
885303-0001	Tube, 1 mL	1	35.13
885303-0002	Tube, 2 mL	1	41.22
885303-0007	Tube, 7 mL	1	37.40
885303-0015	Tube, 15 mL	1	40.23
885303-0040	Tube, 40 mL	1	46.05
885303-0100	Tube, 100 mL	1	86.70

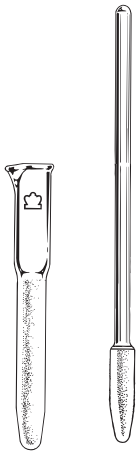


Safety Program - *Play it safe in the lab.*

Our Safety Program discusses the ten basic safety rules of handling glassware as well as the technical properties and physics of glass. Available as a DVD.

Kimble Article No.	Format	Case Qty.	Case Price
99991D-99	DVD	1	23.99

See more safety products in the *SAFETYWARE* section.



885450

DUALL®, All-Glass

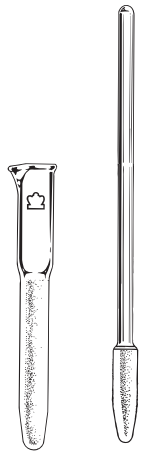
- Combines both conical and cylindrical surfaces to effectively reduce tissue and produce a uniform homogenate.
- Grinding efficiency is greatly improved when this tube is used.
- This ground glass model is ideal for connective tissue such as muscle, heart and lung.
- Construction is strong enough to allow the pestle to be motor driven.
- Pestles are designed to be used with 788000 Stirrer Adapters.
- Replacement components are available and completely interchangeable.
- Clearance between pestles and tubes is 0.004” to 0.006”.*

Kontes Article No.	Size	Working Capacity (mL)	Pestle Overall x Shaft O.D. (mm)	Tube Overall x Res. O.D. (mm)	Case Qty.	Case Price
885450-0020	20	1	155 x 6	80 x 13	1	84.93
885450-0021	21	3	207 x 6	120 x 16	1	84.93
885450-0022	22	5	220 x 8	150 x 18	1	85.64
885450-0023	23	15	278 x 10	175 x 25	1	97.72
885450-0024	24	30	310 x 10	215 x 32	1	104.12
885450-0025	25	50	345 x 16	225 x 38	1	132.18

Component Parts

885451-0020	Pestle, Size 20	1	37.40
885451-0021	Pestle, Size 21	1	37.40
885451-0022	Pestle, Size 22	1	37.40
885451-0023	Pestle, Size 23	1	38.38
885451-0024	Pestle, Size 24	1	42.22
885451-0025	Pestle, Size 25	1	52.73
885452-0020	Tube, Size 20	1	50.73
885452-0021	Tube, Size 21	1	50.73
885452-0022	Tube, Size 22	1	50.73
885452-0023	Tube, Size 23	1	61.39
885452-0024	Tube, Size 24	1	63.25
885452-0025	Tube, Size 25	1	81.38

* Special clearance pestles can be manufactured upon request. Contact Customer Service at 888-546-2531.



885460

DUALL®, All-Glass, with Plastic Coated Tube

- Similar to 885450-series but with plastic safety coating.
- Plastic coating on tube will contain the homogenate if the tube breaks or cracks during motor driven homogenization.
- The coating is transparent, allowing an unobstructed view of the homogenate.
- Replacement components are available and completely interchangeable.
- Clearance between pestles and tubes is 0.004” to 0.006”.*

Kontes Article No.	Size	Working Capacity (mL)	Pestle Overall x Shaft O.D. (mm)	Tube Overall x Res. O.D. (mm)	Case Qty.	Case Price
885460-0020	20	1	155 x 6	80 x 13	1	89.26
885460-0021	21	3	207 x 6	120 x 16	1	89.26
885460-0022	22	5	220 x 8	150 x 18	1	89.26
885460-0023	23	15	278 x 10	175 x 25	1	109.04
885460-0024	24	30	310 x 10	215 x 32	1	134.72
885460-0025	25	50	345 x 16	225 x 38	1	168.41

Component Parts

885451-0020	Pestle, Size 20	1	37.40
885451-0021	Pestle, Size 21	1	37.40
885451-0022	Pestle, Size 22	1	37.40
885451-0023	Pestle, Size 23	1	38.38
885451-0024	Pestle, Size 24	1	42.22
885451-0025	Pestle, Size 25	1	52.73
885462-0020	Tube, Size 20	1	55.58
885462-0021	Tube, Size 21	1	55.58
885462-0022	Tube, Size 22	1	55.58
885462-0023	Tube, Size 23	1	68.21
885462-0024	Tube, Size 24	1	84.04
885462-0025	Tube, Size 25	1	104.42

* Special clearance pestles can be manufactured upon request. Contact Customer Service at 888-546-2531.

DUALL®, PTFE Pestle and Glass Tube

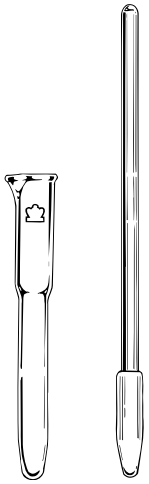
- Combines both conical and cylindrical surfaces to effectively reduce tissue and produce a uniform homogenate.
- Grinding efficiency is greatly improved when this tube is used.
- This PTFE pestle model is ideal for soft tissue such as brain or liver.
- Construction is strong enough to allow the pestle to be motor driven.
- Pestles are designed to be used with 788000 stirrer adapters.
- Replacement components are available and completely interchangeable.
- Clearance between pestles and tubes is 0.004” to 0.006”.*

Kontes Article No.	Size	Working Capacity (mL)	Pestle Overall x Shaft O.D. (mm)	Tube Overall x Res. O.D. (mm)	Case Qty.	Case Price
885480-0020	20	1	155 x 4.5	80 x 13	1	69.22
885480-0021	21	3	210 x 6	120 x 16	1	69.22
885480-0022	22	5	228 x 6	150 x 18	1	77.81
885480-0023	23	15	268 x 6	175 x 25	1	88.47
885480-0024	24	30	305 x 10	215 x 32	1	101.28
885480-0025	25	50	330 x 10	225 x 38	1	144.97

Component Parts

885481-0020	Pestle, Size 20	1	42.64
885481-0021	Pestle, Size 21	1	40.23
885481-0022	Pestle, Size 22	1	48.74
885481-0023	Pestle, Size 23	1	58.26
885481-0024	Pestle, Size 24	1	50.44
885481-0025	Pestle, Size 25	1	94.51
885482-0020	Tube, Size 20	1	36.25
885482-0021	Tube, Size 21	1	34.11
885482-0022	Tube, Size 22	1	36.11
885482-0023	Tube, Size 23	1	36.11
885482-0024	Tube, Size 24	1	40.36
885482-0025	Tube, Size 25	1	59.84

* Special clearance pestles can be manufactured upon request. Contact Customer Service at 888-546-2531.



885480

DUALL®, Glass Pestle and Tube, with Screw-Cap

- Design innovation on our popular 885450 DUALL tissue grinders.
- Extremely efficient grinder, the DUALL combines both conical and cylindrical surfaces on a single pestle and tube.
- These separate areas perform the dual functions of initial grinding in the conical section and final homogenization in the cylindrical section.
- PTFE/rubber-lined phenolic screw cap closure permits centrifugation or storage of homogenates without transfer.
- Replacement components are available and completely interchangeable.
- Clearance between pestles and tubes is 0.004” to 0.006”.*

Kontes Article No.	Size	Working Capacity (mL)	GPI Thread Size	Pestle Overall x Shaft O.D. (mm)	Case Qty.	Case Price
885350-0021	21	3 mL	15-415	207 x 6 mm	1	77.81
885350-0022	22	5 mL	18-415	220 x 8 mm	1	77.81
885350-0023	23	15 mL	24-410	278 x 10 mm	1	86.00

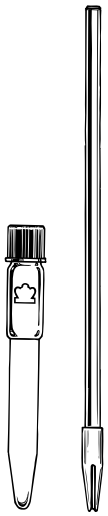
Component Parts

885351-0021	Pestle, Size 21	1	37.40
885351-0022	Pestle, Size 22	1	37.40
885351-0023	Pestle, Size 23	1	38.38
885352-0021	Tube with Cap, Size 21	1	43.34
885352-0022	Tube with Cap, Size 22	1	43.34
885352-0023	Tube with Cap, Size 23	1	51.32

* Special clearance pestles can be manufactured upon request. Contact Customer Service at 888-546-2531.



885350



885380

DUALL®, PTFE Pestle and Glass Tube, with Screw-Cap

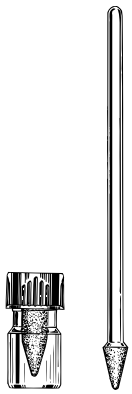
- Extremely efficient grinder, the DUALL combines both conical and cylindrical surfaces on a single pestle and tube.
- These separate areas perform the dual functions of initial grinding in the conical section and final homogenization in the cylindrical section.
- Pestle is made of solid PTFE and threaded to a stainless steel shaft.
- PTFE-lined phenolic screw cap closure permits centrifugation or storage of homogenates without transfer.
- Replacement components are available and completely interchangeable.
- Clearance between pestles and tubes is 0.004” to 0.006”.*

Kontes Article No.	Size	Working Capacity (mL)	GPI Thread Size	Pestle Overall x Shaft O.D. (mm)	Case Qty.	Case Price
885380-0021	21	3	15-415	218 x 6	1	122.22
885380-0022	22	5	18-415	228 x 6	1	122.22
885380-0023	23	15	24-410	269 x 6	1	133.25

Component Parts

885381-0021	Pestle, Size 21	1	82.09
885381-0022	Pestle, Size 22	1	82.09
885381-0023	Pestle, Size 23	1	86.70
885352-0021	Tube with Cap, Size 21	1	43.34
885352-0022	Tube with Cap, Size 22	1	43.34
885352-0023	Tube with Cap, Size 23	1	51.32

* Special clearance pestles can be manufactured upon request. Contact Customer Service at 888-546-2531.



885490

Micro Duall®, All-Glass, with Screw-Cap

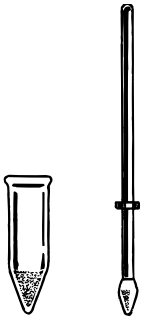
- Can serve as a storage vessel following homogenization.
- Centrifugation, concentrations, and lyophilization can be accomplished without a transfer.
- Flat base allows tube to stand upright without support.
- Heavy wall construction minimizes breakage.
- Capacities shown are without the pestle inserted.
- Supplied complete with a pestle, tube, phenolic cap and a PTFE liner.
- Replacement components are available and completely interchangeable.
- Clearance between pestles and tubes is 0.004” to 0.006”.*

Kontes Article No.	Size	Working Capacity (mL)	GPI Thread Size	Pestle Overall x Shaft O.D. (mm)	Case Qty.	Case Price
885490-0017	17	0.3	13-425	148 x 6	1	70.93
885490-0019	19	1	13-425	148 x 6	1	74.99
885490-0020	20	3	20-400	165 x 9	1	86.70
885490-0021	21	5	20-400	165 x 9	1	90.62

Component Parts

885491-0017	Pestle, For Size 17 and 19 Tubes	1	37.40
885491-0020	Pestle, For Size 20 and 21 Tubes	1	46.77
885492-0017	Tube, Size 17	1	36.25
885492-0019	Tube, Size 19	1	39.35
885492-0020	Tube, Size 20	1	45.76
885492-0021	Tube, Size 21	1	49.59

* Special clearance pestles can be manufactured upon request. Contact Customer Service at 888-546-2531.



885470

Micro, All-Glass

- Designed for dispersing small quantities of tissue in buffer solution.
- Working capacity is 200 microliters.
- All-glass tube and pestle.
- PTFE bearing prevents misalignment and avoids aerosol formation.
- Packed in six matched sets per carton.

Kontes Article No.	Working Capacity (µL)	Pestle Overall x Shaft O.D. (mm)	Tube Overall x O.D. (mm)	Case Qty.	Case Price
885470-0000	200	75 x 3	33 x 8	6	204.66

Potter-Elvehjem, All-Glass

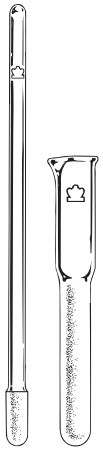
- All-glass construction.
- Designed for a motor drive using a 788000 Stirrer Adapter.
- Replacement components are available and completely interchangeable.
- Clearance between pestles and tubes is 0.004” to 0.006”.*

Kontes Article No.	Size	Working Capacity (mL)	Pestle Overall x Shaft O.D. (mm)	Tube Overall x Res. O.D. (mm)	Case Qty.	Case Price
885500-0019	19	1	145 x 5	95 x 13	1	75.71
885500-0021	21	5	205 x 6	140 x 16	1	59.84
885500-0022	22	8	215 x 8	150 x 18	1	66.52
885500-0023	23	17	265 x 10	175 x 25	1	70.93
885500-0024	24	45	315 x 10	220 x 32	1	74.28

Component Parts

885501-0019	Pestle, Size 19	1	37.40
885501-0021	Pestle, Size 21	1	24.02
885501-0022	Pestle, Size 22	1	25.86
885501-0023	Pestle, Size 23	1	28.85
885501-0024	Pestle, Size 24	1	32.70
885502-0019	Tube, Size 19	1	41.22
885502-0021	Tube, Size 21	1	32.25
885502-0022	Tube, Size 22	1	34.39
885502-0023	Tube, Size 23	1	39.08
885502-0024	Tube, Size 24	1	46.46

* Special clearance pestles can be manufactured upon request. Contact Customer Service at 888-546-2531.



885500

Potter-Elvehjem, PTFE Pestle and Glass Tube

- Similar to 885500 but with a PTFE pestle and an unground tube.
- Sizes 21 to 24 have radial serrations on the lower portion of the pestle to deliver the homogenate into the cylindrical portion of the tube.
- Replacement components are available and completely interchangeable.
- Clearance between pestles and tubes is 0.004” to 0.006”.*

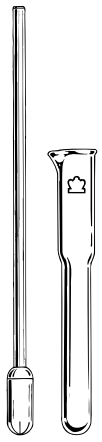
Kontes Article No.	Size	Working Capacity (mL)	Pestle Overall x Shaft O.D. (mm)	Tube Overall x Res. O.D. (mm)	Case Qty.	Case Price
886000-0018	18	0.5	130 x 3	80 x 12	1	86.70
886000-0019	19	1	154 x 5	95 x 12	1	71.77
886000-0020	20	3	154 x 5	115 x 12	1	76.73
886000-0021	21	5	215 x 6	140 x 15	1	74.28
886000-0022	22	8	212 x 6	150 x 19	1	71.77
886000-0023	23	17	266 x 6	175 x 25	1	85.27
886000-0024	24	45	269 x 6	220 x 32	1	94.51

Component Parts

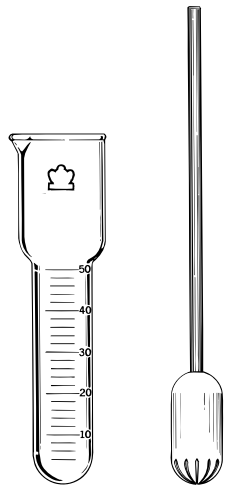
Kontes Article No.	Description	Case Qty.	Case Price
885752-0018	Tube, Size 18	1	40.23
885752-0019	Tube, Size 19	1	33.14
885752-0020	Tube, Size 20	1	33.98
885752-0021	Tube, Size 21	1	32.25
885752-0022	Tube, Size 22	1	32.25
885752-0023	Tube, Size 23	1	35.96
885752-0024*	Tube, Size 24	1	39.35

Kontes Article No.	Description	Case Qty.	Case Price
886001-0018	Pestle, Size 18	1	48.90
886001-0019	Pestle, Size 19	1	42.64
886001-0020	Pestle, Size 20	1	43.49
886001-0021	Pestle, Size 21	1	41.92
886001-0022	Pestle, Size 22	1	43.49
886001-0023	Pestle, Size 23	1	43.77
886001-0024	Pestle, Size 24	1	43.77

* Special clearance pestles can be manufactured upon request. Contact Customer Service at 888-546-2531.



886000

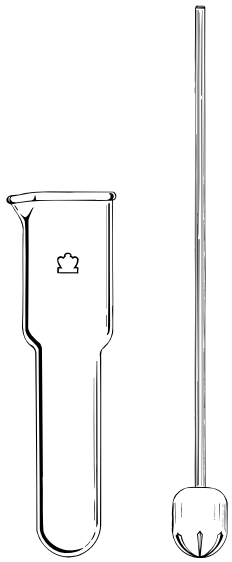


885510

Potter-Elvehjem, PTFE Pestle and Glass Tube

- A graduated tube and a finely machined PTFE pestle comprise this popular style.
- Radial serrations on the lower portion of the pestle deliver the homogenate into the cylindrical portion of the tube.
- Graduations are fused into the glass.
- Replacement components are available and completely interchangeable.

Kontes Article No.	Size	Working Capacity (mL)	Graduations x Subdiv. (mL)	Pestle Overall x Shaft O.D. (mm)	Tube Overall x Reservoir O.D. (mm)	Case Qty.	Case Price
885510-0020	20	4	0.5-4 x 0.5	215 x 4	125 x 16	1	97.02
885510-0021	21	10	1-9 x 0.5	213 x 6	128 x 22	1	72.48
885510-0022	22	30	2-25 x 1	225 x 6	160 x 35	1	98.44
885510-0023	23	55	6-50 x 2	231 x 6	170 x 41	1	116.20
Component Parts							
885511-0020	Pestle, Size 20 (0.003-.005” clearance)					1	39.24
885511-0021	Pestle, Size 21 (0.004-.006” clearance)					1	38.38
885511-0022	Pestle, Size 22 (0.005-.007” clearance)					1	55.56
885511-0023	Pestle, Size 23 (0.006-.009” clearance)					1	65.25
885512-0020	Tube, Size 20					1	60.27
885512-0021	Tube, Size 21					1	34.81
885512-0022	Tube, Size 22					1	43.77
885512-0023	Tube, Size 23					1	50.60



885520

Potter-Elvehjem, PTFE Pestle and Glass Tube

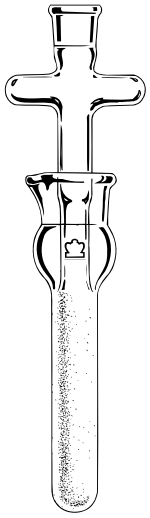
- Large volume with a finely machined PTFE pestle.
- Tube has a convenient pouring lip.
- Radial serrations on the lower portion of the pestle deliver the homogenate into the cylindrical portion of the tube. Pestle rod is stainless steel.
- Replacement components are available and completely interchangeable.
- Clearance between pestles and tubes is 0.004” to 0.006”.*

Kontes Article No.	Working Capacity (mL)	Pestle Overall x Shaft O.D. (mm)	Tube Overall x Reservoir O.D. (mm)	Case Qty.	Case Price
885520-0100	100	349 x 6	232 x 57	1	126.15
Component Parts					
885521-0100	Pestle, 100 mL			1	78.53
885303-0100	Tube, 100 mL			1	86.70

* Special clearance pestles can be manufactured upon request. Contact Customer Service at 888-546-2531.

Tenbroeck, All-Glass

- All-glass construction.
- Popular style which affords the choice of hand or motor operation.
- Pestle is tooled for an appropriately sized single hole rubber stopper (not supplied).
- By inserting a short metal rod in the stopper, these grinders can be motor driven at slow speeds by inserting the metal rod into the motor chuck.
- Replacement components are available and completely interchangeable.
- Clearance between pestles and tubes is 0.004" to 0.006".*



885000

Kontes Article No.	Working Capacity (mL)	Stopper No.	Pestle Overall x Shaft O.D. (mm)	Tube Overall x Reservoir O.D. (mm)	Case Qty.	Case Price
885000-0002	2	00	160 x 50	100 x 30	1	59.13
885000-0007	7	00	195 x 50	125 x 30	1	66.22
885000-0015	15	1	250 x 65	157 x 38	1	73.55
885000-0040	40	3	315 x 90	215 x 55	1	100.91

Component Parts

885001-0002	Pestle, 2 mL	1	32.70
885001-0007	Pestle, 7 mL	1	36.25
885001-0015	Pestle, 15 mL	1	39.78
885001-0040	Pestle, 40 mL	1	50.90
885002-0002	Tube, 2 mL	1	32.70
885002-0007	Tube, 7 mL	1	36.25
885002-0015	Tube, 15 mL	1	39.78
885002-0040	Tube, 40 mL	1	50.90

* Special clearance pestles can be manufactured upon request. Contact Customer Service at 888-546-2531.

Kit, Glass and PTFE Pestles

- Kit contains a variety of the finest microscale tissue grinders available.
- Working with micro quantities reduces heat build-up and yields greater enzyme activity.
- Samples can be handled with minimal loss, transfers can often be eliminated.
- Supplied are ground glass, smooth glass and PTFE grinders suitable for tough connective tissue and soft tissue such as brain or liver.
- Kit items are packaged in a convenient high-density polyethylene case with die cut foam inserts that protect grinders in transit and in storage.
- Each kit contains one each of the tissue grinders listed below.
- Grinders are also available individually.

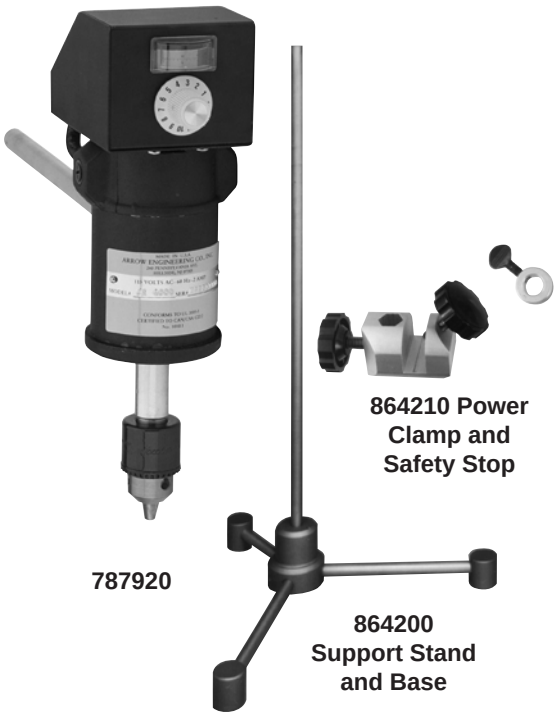


884900

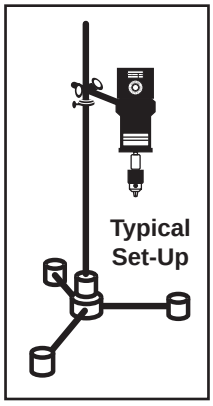
Kontes Article No.	Description	Case Qty.	Case Price
884900-0000	Complete Tissue Grinder Kit	1	372.37

Kontes Article No.	Type of Grinder	Pestle Material	Working Capacity[1] (mL)	Case Qty.	Case Price
885470-0000	Micro, 1 Supplied	Ground Glass	0.2	6	204.66
885490-0017	DUALL (with cap)	Ground Glass	0.3 mL	1	70.93
885480-0020	DUALL	PTFE	1	1	69.22
885500-0019	Potter-Elvehjem[2]	Ground Glass	1	1	75.71
886000-0019	Potter-Elvehjem[2]	PTFE	1	1	71.77
885000-0002	Tenbroeck[2]	Ground Glass	2	1	59.13
885300-0002	Dounce[3]	Smooth Glass	2	1	98.44

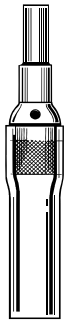
[1] Approximate volume with pestle inserted (except 885490).
[2] Suitable for motor-driven homogenization.
[3] With one large clearance pestle and one small clearance pestle.




788020




788010


788000

Electric Stirrer and Support Package

Handle light duty stirring with the Arrow Junior® direct drive stirrer - exclusively available from Kontes Glass Company. Replace your antiquated light duty motors with this unit specially designed to handle a broader operating range such as, watery to light syrupy mixtures at high speeds with constant torque (0-4000 RPM). Includes Jacobs chuck and key. Attachment to glass shaft requires stir adapter.

In addition to the electric stirrer, our rugged support package includes a stand constructed of 5/8" diameter stainless steel rods and an aluminum clamp with large "power knob" for positive gripping. A safety stop is also included with each clamp. Overall assembled height is 29".

- Powerful stall torque provides constant reproducible speed at low rpm
- Features a load meter to aid settng rpm ot performance requirements
- Totally enclosed permanent magnet DC non-ventilated motor keeps corrosive fumes and dust out for a long and trouble free service life
- Constant torque 10 in - oz. through entire range
- Aluminum stirrer support rod measures 9/16" x 10"
- Weight lbs (kg) 9 (4.1)
- Conforms to UL and CSA Certification, 115 VAC

Kontes Article No.	Description	Case Qty.	Case Price
787920-0115	Electric Stirrer and Support Package	1	811.55
Component Parts			
790040-0000	Electric Stirrer, 115 VAC	1	568.80
864200-0000	Support Stand, Tripod Base	1	195.44
864210-0000	Power Clamp and Safety Stop	1	62.57
Accessory			
788020-0020	Flex Shaft Stirrer Adapter for 6 mm Diameter Shafts	1	71.42
788020-0021	Flex Shaft Stirrer Adapter for 8-10 mm Diameter Shafts	1	71.76
788020-0022	Flex Shaft Stirrer Adapter for 19 mm Diameter Shafts	1	83.99

Adapter, Anodized Aluminum

Convenient, inexpensive adapter for connecting pestles to stirrer motors. Anodized aluminum, with attached flexible tubing serving as a friction-clutch and as a flexible coupling. Stepped-stem diameter is 1/4" and 5/16" (6.4 and 7.9 mm).

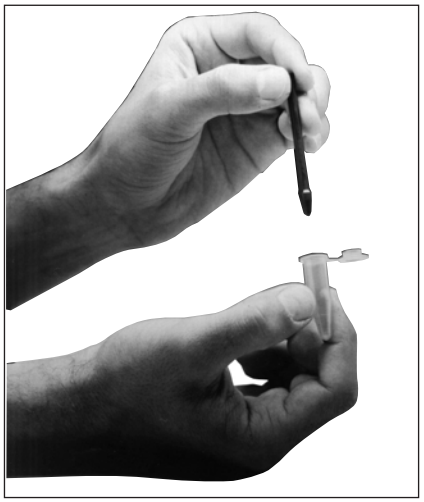
Kontes Article No.	Fits Shaft Dia. (mm)	Approx. Height (mm)	Case Qty.	Case Price
788000-0020	6	45	1	17.85
788000-0021	8-10	45	1	24.21
788000-0022	19	70	1	34.27

Adapter, Polyacetal

A polyacetal stirrer adapter for connecting shafts to stirrer motors. Knurled compression nut can be hand tightened for a positive connection. Stepped O.D. on stem allows use with 1/4" and 5/16" precision collet-type chucks.

Kontes Article No.	Fits Shaft Dia. (mm)	Size	Case Qty.	Case Price
788010-0021	8-10	0021	1	38.63

PELLET PESTLES® Resuspend Protein and DNA Pellets or Grind Soft Tissues in Micro Centrifuge Tubes



749510 and
749520

RNase-Free Disposable PELLET PESTLES® with Microtubes

- RNase, DNase and Pyrogen-free
- Individually wrapped to ensure purity

Kontes Article No.	Description	Case Qty.	Case Price
749520-0090	RNase Free Pellet Pestle w/tube 1.5mL	100	116.56
749520-0590	RNase Free Pellet Pestle w/tube 0.5mL	100	116.56
749521-0590	RNase Free Pellet Pestle Only 0.5mL	100	94.51
749521-1590	RNase Free Pellet Pestle Only 1.5mL	100	94.51
749510-0590	RNase Free Microtube Only 0.5mL	100	28.42
749510-1590	RNase Free Microtube Only 1.5mL	100	28.42

Disposable PELLET PESTLES® with Microtubes

- Autoclavable blue polypropylene
- Pestles specially designed to match microtubes
- Can be driven by Cordless Motor 749540-0000

Kontes Article No.	Description	Overall Pestle Length (cm)	Case Qty.	Case Price
749520-0500	0.5 mL Pellet Pestle with matching Microtubes	7	100	87.07
749520-0000	1.5 mL Pellet Pestle with matching Microtubes	7	100	87.07
749521-0500	0.5 mL Pellet Pestle Only	7	100	71.77
749521-1500	1.5 mL Pellet Pestle Only	7	100	71.77



749520-0500 and
749540

Reusable PELLET PESTLES®, CTFE / Stainless Steel

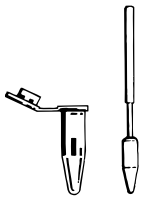
- For 500 µL and 1.5 mL micro centrifuge tubes
- Autoclavable CTFE/stainless steel
- Specially designed to match microtubes

Kontes Article No.	Size (mL)	Overall Pestle Length (cm)	Case Qty.	Case Price
749516-0500	0.5	6	1	61.67
749515-0000	1.5	14	1	59.56
749515-1500	15	21	1	77.10
749515-5000	50	21	1	93.46

Polypropylene PELLET PESTLE® Microtubes

- Autoclavable polypropylene
- Selected to give best fit to Pellet Pestles

Kontes Article No.	Size (mL)	Color	Case Qty.	Case Price
749510-1500	1.5	blue	100	17.05
749510-1501	1.5	blue	500	50.01
749560-0500	0.5	natural	1000	67.94
749560-1500	1.5	natural	500	42.77
749530-1500	15	natural	25	12.20
749530-5000	50	natural	25	19.32



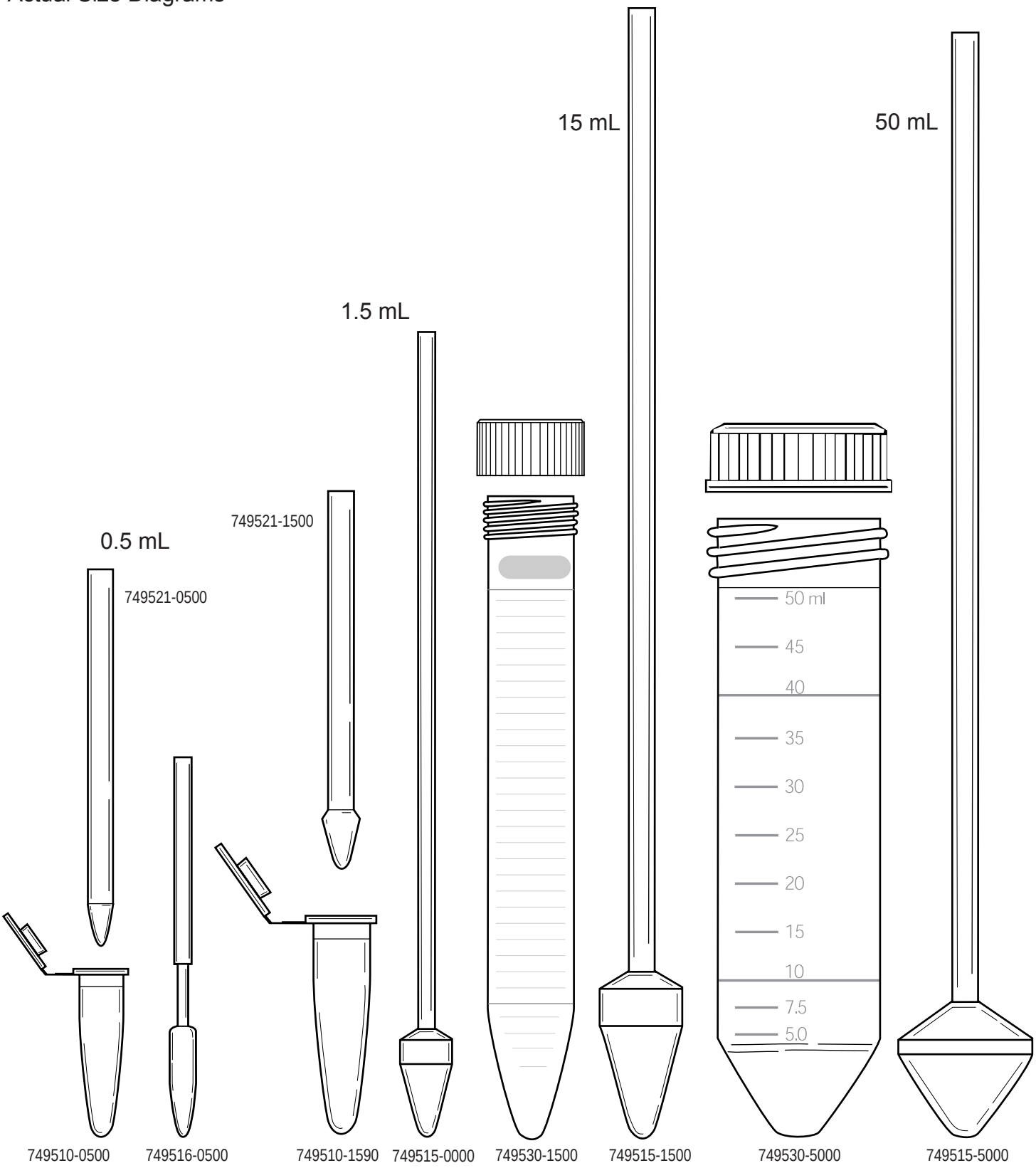
749516

PELLET PESTLE® Cordless Motor

- For all Pellet Pestle mixers
- Complete with two AA batteries
- Resuspend Protein and DNA Pellets or Grind Soft Tissues in Micro Centrifuge Tubes
- Operates at 2000-3000 RPM's with fresh batteries and no load.

Kontes Article No.	Description	Case Qty.	Case Price
749540-0000	Pellet Pestle Cordless Motor	1	101.28
Replacement Part			
749541-0000	Replacement Motor Adapter	1	5.25

Actual Size Diagrams



Caraway

Chase brand Natelson and Caraway tubes are manufactured with tapered tips for easy collection of micro blood samples, and are packed in lint-free boxes. Ends may be sealed with clay or patented caps. Heparinized tubes are evenly coated with ammonium heparin to prevent coagulation and do not interfere with sodium identification. Sodium or lithium heparin is available as a special order.

Chase Article No.	Size (mm) ID x Length	Description	Pack Qty.	Case Qty.	Case Price
42G605	2.6 X 75	Heparinized red coded	100	600	286.20
42H606	2.6 X 75	Plain blue coded	100	600	254.40



42G605
42H606

Micro-Hematocrit Capillary

KIMBLE micro-hematocrit tubes are now available in a new convenient case quantity of 1000 / case (5 vials of 200). Tubes are approximately 75 mm long and feature fire-polished ends. Supplied plain or heparinized.

Kimble Article No.	Description	Length (mm)	Case Qty.	Case Price
73812-99	heparinized	75	1000	68.61
73813-99	non-heparinized	75	1000	61.44



73813

Micro-Hematocrit Capillary

Chase brand micro-hematocrit tubes are manufactured from soda lime glass, packed in plastic vials with reclosable snap-lock caps to maintain cleanliness. Ends may be sealed by flame, sealing clay or patented caps. They are available in borosilicate glass as a special order. Heparinized capillary tubes are treated to prevent blood clotting. Ammonium Heparin does not interfere with sodium identification.

Chase Article No.	Size (mm) ID x Length	Description	Pack Qty.	Case Qty.	Case Price
40B501	1.1 X 75	Heparinized red coded	100	1200	89.04
40A502	1.1 X 75	Plain blue coded	100	1200	89.04
41B2501	1.1 X 75	Heparinized red coded	200	2400	254.40
41A2502	1.1 X 75	Plain blue coded	200	2400	228.96
40C505	1.1 X 75	Heparinized 60mm calibration	100	1200	114.48



40B501 - 40C505

Micro-Hematocrit Capillary, Bulk

Chase brand plain or heparinized micro-hematocrit tubes may be purchased in bulk quantities. **Call for quotes and minimums** on plain or heparinized capillary tubes with no color coding.

Chase Article No.	Size (mm) ID x Length	Description	Case Quantity	Case Price
44B506	1.1 X 75	Heparinized no color code	–	Call
44A507	1.1 X 75	Plain no color code	–	Call
44B508	1.1 X 75	Heparinized red code	≈ 4,075 pieces	124.32
44A509	1.1 X 75	Plain blue code	≈ 4,075 pieces	112.68

Natelson

Chase brand Natelson tubes are manufactured with tapered tips for easy collection of micro blood samples, and are packed in lint-free boxes. Ends may be sealed with clay or patented caps. Heparinized tubes are evenly coated with ammonium heparin to prevent coagulation and do not interfere with sodium identification. Sodium or lithium heparin is available as a special order.

Chase Article No.	Size (mm) ID x Length	Description	Pack Qty.	Case Qty.	Case Price
42F604	1.6 X150	Plain blue coded	100	600	222.60



42F604



Pre-labeled tubes are easy to write on.

Blood Typing

- Pre-labeled with blood type
- Convenient package quantities
- Permanent color-coded labels
- Borosilicate glass

Chase brand blood typing tubes feature a permanent ceramic label, fused to the glass, that is easily written on with marker or pencil. Tubes are pre-labeled with the blood type and a color-coded band that is placed to allow an unobstructed view of cell suspension.

A1 Yellow Color-Coded Tubes

Chase Article No.	Size (mm)	Label Color	Pack Qty.	Case Qty.	Case Price
60A10BZ1	10 x 75	yellow	250	1000	74.20
60B12BZ1	12 x 75	yellow	250	1000	74.20

ANTI A Blue Color-Coded Tubes

60A10BZ2	10 x 75	blue	250	1000	74.20
60B12BZ2	12 x 75	blue	250	1000	74.20

ANTI B Yellow Color-Coded Tubes

60A10BZ4	10 x 75	yellow	250	1000	74.20
60B12BZ4	12 x 75	yellow	250	1000	74.20

B Blue Color-Coded Tubes

60A10BZ3	10 x 75	blue	250	1000	74.20
60B12BZ3	12 x 75	blue	250	1000	74.20

IIS White Color-Coded Tubes

60A10BZ6	10 x 75	white	250	1000	74.20
60B12BZ6	12 x 75	white	250	1000	74.20

IS Green Color-Coded Tubes

60A10BZ5	10 x 75	green	250	1000	74.20
60B12BZ5	12 x 75	green	250	1000	74.20

Erythrocyte Sedimentation Rate (ESR)

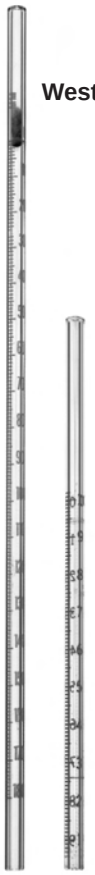
- Precision-drawn glass and accurate calibrations
- Use with standard or modified procedure

The precision-drawn glass and accurate calibrations of Chase brand sed-rate tubes provide assurance that the results are accurate with the standard normal values.

Wintrobe tubes are available with either a single black line or fully calibrated. Fully calibrated tubes come in two styles; *standard Wintrobe tubes* must be filled with a 9” pipette or the *self-zeroing Wintrobe tube* which is filled by means of an aspirating bulb.

Chase brand **Westergren sedimentation rate tubes** may be used for the standard procedure by drawing blood in a liquid sodium citrate vacuum tube or the modified procedure using a saline-diluted EDTA vacuum tube.

Sedimentation **tube racks** feature leveling bubbles and adjustment screws so that tubes are held firmly in a perpendicular position to ensure accurate readings.



Westergren Tube

Wintrobe Tube

Wintrobe Tubes

Chase Article No.	I.D. x Length (mm)	Description	Pack Qty.	Case Qty.	Case Price
64FR828B	3 x 115	Full calibration in yellow	200 pieces	10 packs	**392.20**
66F828SO	3 x 150	Full calibration in yellow, cotton plugged, fill with aspiration bulb no. 16	100 pieces	10 packs	**424.00**

Westergren Tubes

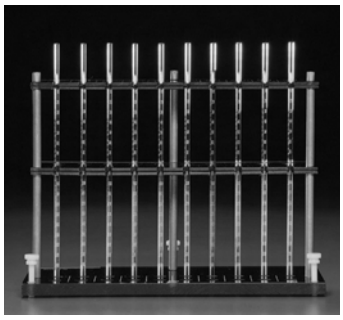
67G830SO	2.55 x 240	Calibrated in yellow, cotton plugged, fill with aspiration bulb no. 16	200 pieces	100 packs	**434.60**

Aspirating Bulb

2216	—	Bulb for 828SO, 830SO	—	1	**62.76**

Sedimentation Tube Racks with Leveling Bubbles and Adjustment Screws

2212N	—	6-Slot, Bio-Hazard Rack	—	1	**153.70**
2215N	—	10-Slot, Bio-Hazard Rack	—	1	**196.10**



Ten-Slot Rack shown with Westergren tubes

Break Seal

For a single use within a closed system. The break seal is opened by magnetically raising a metal rod, and then releasing the magnet. Fracturing occurs, releasing the contents of the tube into the system.

Kontes Article No.	Tube O.D. (mm)	Approx. Overall Height (mm)	Case Qty.	Case Price
892750-0010	10	150	1	15.50



892750

KIMAX® MELTING POINT CAPILLARY TUBES

KIMAX melting point capillary tubes are made of borosilicate glass. The use of soda-lime glasses is not recommended for this work. A partial immersion thermometer, calibrated for 75 mm, is specified in most methods for the determination of melting points. Tubes are 100 mm long when supplied with both ends open, so that approximately 90 mm will remain after sealing. Tube length insures that the open end will extend well above the bath's surface to prevent the bath liquid from entering the tube.



34502



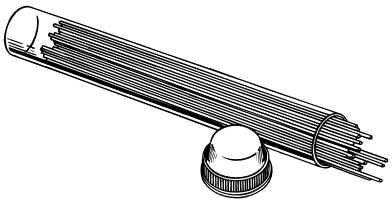
34500



34507



34505



744250

Capillary, Melting Point, Open Both Ends

Kimble Article No.	Length (mm)	Approx. O.D. (mm)	Thickness of Wall (mm)	Tubes per Vial	Vials per Case	Case Price
34500-99	100	1.5-1.8	0.2	100	20	140.40

Capillary, Melting Point, U.S.P., Open Both Ends

Smaller I.D. than 34500. Designed from requirements contained in United States Pharmacopeia. (USP)

Kimble Article No.	Length (mm)	Approx. I.D. (mm)	Thickness of Wall (mm)	Tubes per Vial	Vials per Case	Case Price
34502-99	100	0.8-1.1	0.25	100	20	142.60

Capillary, Melting Point, Open One End

With one end sealed, 90 mm in length.

Kimble Article No.	Length (mm)	Approx. O.D. (mm)	Thickness of Wall (mm)	Tubes per Vial	Vials per Case	Case Price
34505-99	90	1.5-1.8	0.2	100	20	164.80

Capillary, Melting Point, U.S.P., Open One End

Smaller I.D. than 34500, with one end sealed, 90 mm in length.

Kimble Article No.	Length (mm)	Approx. I.D. (mm)	Thickness of Wall (mm)	Tubes per Vial	Vials per Case	Case Price
34507-99	90	0.8-1.1	0.25	100	20	166.40

Capillary, Melting Point, Open One End

Closed at one end and packaged in vials of approximately 100 capillaries.

Kontes Article No.	Approx. Overall Length (mm)	Approx. O.D. x I.D. (mm)	Case Qty.	Case Price
744250-0022	100	1.5 x 1	100	13.79
744250-0023	150	1.5 x 1	100	33.83

Micro, Disposable, Microcaps®

Microcaps® are ingeniously simple . . . in concept and in use. These precision-bore glass capillary tubes are cut to predetermined lengths, so that each capillary tube will hold a known volume of fluid when filled. Drummond Microcaps are so inexpensive that it is almost always practical to dispose of the tube after use.

Filling is simple. Capillary action not externally applied suction draws the fluid into the tube. To dispense the fluid, simply squeeze the bulb. No unusual skills or training is required. Immediate, professional results. Ideal for spotting preadsorbent TLC plates.

Supplied with one bulb assembly and one dispenser vial with 100 micropipets.

Kontes Article No.	Cap. (µL)	Length (mm)	Relative I.D. (in.)	Relative O.D. (in.)	Vol. Tol.(%)	Case Qty.	Case Price
764500-0000	0.5	32	0.0056	0.022	+ 1	100	31.01
764500-0001	1.0	32	0.0078	0.025	+ 1	100	25.66
764500-0002	2.0	32	0.0111	0.030	+ 1	100	25.66
764500-0005	5.0	32	0.0174	0.0355	+ 1	100	25.66
764500-0010	10.0	41	0.0219	0.0314	+ 1	100	25.66
764500-0020	20.0	64	0.0249	0.0355	+ 1	100	25.66
764500-0025	25.0	65	0.0272	0.0382	+ 1	100	25.66
764500-0050	50.0	100	0.0314	0.043	+ 1	100	25.66
764500-0100	100.0	116	0.0410	0.0555	+ 1	100	25.66



764500

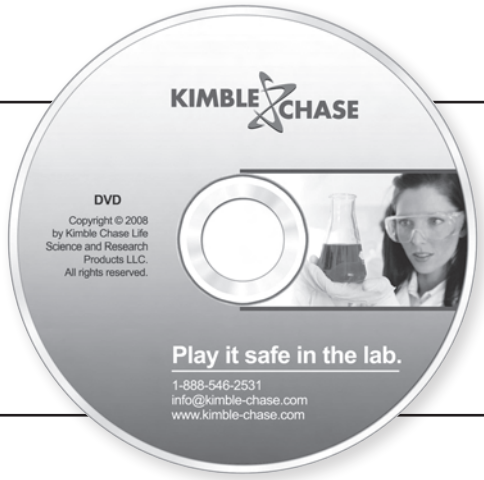
Capillary, Microcaps®, 5-Pack

The Microcaps "5-Pack" is ideal for use in spotting TLC plates. Each kit has 5 dispenser vials containing 100 micropipets each of 0.5, 1, 2, 5 and 10 µL sizes. Also included are a bulb assembly and spotting holder.

Kontes Article No.	Case Qty.	Case Price
764520-0000	1	95.87



764520



Safety Program - *Play it safe in the lab.*

Our Safety Program discusses the ten basic safety rules of handling glassware as well as the technical properties and physics of glass. Available as a DVD.

Kimble Article No.	Format	Case Qty.	Case Price
99991D-99	DVD	1	23.99

See more safety products in the *SAFETYWARE* section.

NOMOGRAM FOR COMPUTING RELATIVE CENTRIFUGAL FORCES

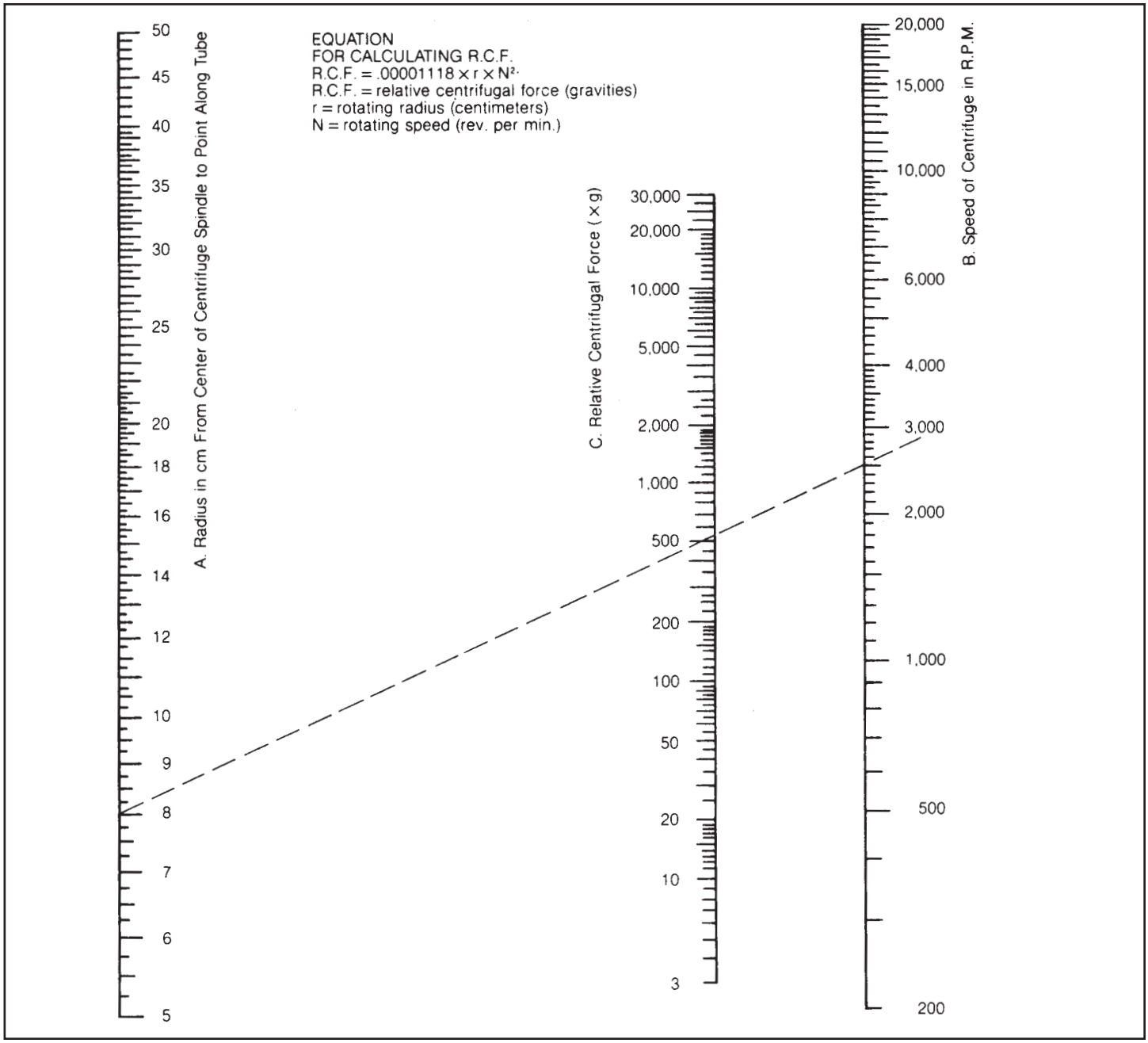
One of the questions asked most frequently in the field of centrifugation is how does one relate revolutions per minute (R.P.M.) to relative centrifugal force (R.C.F.)? The following nomograph may be used directly or the R.C.F. may be calculated from the formula.

Equation for Calculating R.C.F.

R.C.F. = .00001118 x r x N^2 (R.C.F. = relative centrifugal force (gravities); r = rotating radius; N = rotating speed)

Sample Calculation
The relative centrifugal force (R.C.F.) at a radial distance of 8 cm from the center of centrifuge spindle when operating at a speed of 2500 R.P.M., may be determined by placing a straight edge on the nomogram connecting the 8 cm point on the Radius from Center Spindle Scale (A), with the 2500 R.P.M. point on the Speed Scale (B). The point of intersection on the Relative Centrifugal Force Scale (C), or 550 g is the relative centrifugal force (550 x 32 =17600 psi).

If the desired R.C.F. is known, the speed of rotation for a given radius may be found by connecting the two points and reading the Speed Scale at intersection.



Centrifuge, Disposable, Plain, Screw Thread Finish

Tubes are made from borosilicate glass in compliance with ASTM Specification E438, Type I, Class A or B glass requirements. With conical shaped bottoms on the 5, 10, and 15 mL sizes and a bullet nosed shape on the 50 mL size to withstand centrifugation up to 2980 RCF. Tubes are plastic shrink wrapped in modular trays for cleanliness and safety. **Closures are not supplied. See 73800 and 73802 below.**

Kimble Article No.	Nominal Capacity (mL)	Approx. O.D. (mm)	Approx. Length (mm)	GPI Thread Finish	Case Qty.	Case Price
73785-5	5	13	110	13-415	125	86.45
73785-10	10	16	114	15-415	125	87.03
73785-15	15	17	126	15-415	125	90.95
73785-50	50	29	137	24-400	72	83.25

Accessory Closures

73800-13415	Closures, Screw Thread, Rubber Lined, 13-415	1000	90.49
73800-15415	Closures, Screw Thread, Rubber Lined, 15-415	1000	103.89
73802-13415	Closures, Screw Thread, PTFE Lined, 13-415	500	78.31
73802-15415	Closures, Screw Thread, PTFE Lined, 15-415	500	83.55
73802-24400	Closures, Screw Thread, PTFE Lined, 24-400	144	119.64



73785



73800
73802

Centrifuge, Disposable, Plain, Snap Cap Finish

Tubes are made from borosilicate glass in compliance with ASTM Specification E438, Type I, Class A or B glass requirements. With conical shaped bottoms on the 5, 10, and 15 mL sizes and a bullet-nosed shape on the 50 mL size to withstand centrifugation up to 2980 RCF. The 5, 10, and 15 mL sizes have a finished top for a snap-cap closure. The 50 mL size has a tooled top. Tubes are plastic shrink wrapped in modular trays to keep them clean and safe in transit. **Snap-cap closures are not supplied. See 73837 below.**

Kimble Article No.	Nominal Capacity (mL)	Approx. O.D. (mm)	Approx. Length (mm)	Snap-Cap Size	Case Qty.	Case Price
73790-5	5	13	110	1	125	74.60
73790-10	10	16	114	2	125	75.43
73790-15	15	17	126	2	125	78.54
73790-50	50	29	137	-	72	84.53

Accessory Closures

73837-1	Snap Cap, Polyethylene, cap size 1	500	22.39
73837-2	Snap Cap, Polyethylene, cap size 2	500	22.39



73790

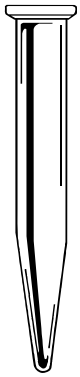


73837

KONTES
custom glass shop
*call toll-free **800-682-6644***
customglass@kimble-chase.com

Contact the **Kontes Custom Glass Shop** at KIMBLE CHASE for modifications of standard products or fabrication of your unique designs. And when it comes to repairs, we can save you up to 75% of the cost of a new item. Save an additional 10% on repairs of Kontes or Kimble Brand products. Fax your requirements to **856-692-6644**.

- **Custom Fabrications**
- **Quality Repairs**
- **Modifications of All Kinds**
- **No Order Too Small**
- **Quick Turnaround**



411800



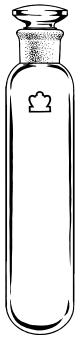
45150



45160



410090



411050

Centrifuge, Plain, Beaded Top, with Snap Cap

Ungraduated, conical centrifuge tube with a beaded top.

Kontes Article No.	Capacity (mL)	Approx. Overall Height x O.D. (mm)	Case Qty.	Case Price
411800-0015	15	120 x 20	125	204.95
411800-1015	15	120 x 20	10	21.92
Replacement Part				
410150-0002 Snap Cap			125	11.74

Centrifuge, Plain, Beaded Top, Micro

KIMAX tube with a regular beaded top. Designed from ASTM Specification E237.

Kimble Article No.	Capacity (mL)	O.D. x Length (mm)	Case Qty.	Case Price
45150-2	2	11 x 66	12	42.24
45150-5	5	13 x 101	12	46.44

Centrifuge, Plain, Beaded Top

Standard taper KIMAX tube. Top is beaded for strength. Designed from Federal Specification NNN-T-780, Type II ungraduated requirements.

Kimble Article No.	Capacity (mL)	O.D. x Length (mm)	Case Qty.	Case Price
45160-15	15	17 x 118	12	53.88

Centrifuge, Plain, Threaded, with Screw Cap

Conical tube with a PTFE/rubber lined black phenolic screw cap.

Kontes Article No.	Capacity (mL)	GPI Thread Size	Fits I.E.C. Sheild No.	Approx. Overall Height x O.D. (mm)	Case Qty.	Case Price
410090-0015	15	15-415	302	130 x 17	12	124.15
410090-0050	50	24-410	320	158 x 28	12	169.50

Centrifuge, Plain, Round Bottom, with Flat Head $ Stopper

Round bottom ungraduated centrifuge tube with a flat head $ stopper. The flat head design permits stoppers to be placed on work surfaces without contaminating the ground zone and also facilitates the use of this vessel as a shaking tube. Do not centrifuge with stopper in tube. Replacement stoppers are 5100113 and 5100116.

Kontes Article No.	Capacity (mL)	$ Stopper	Fits I.E.C. Shield No.	Approx. Overall Height x O.D. (mm)	Case Qty.	Case Price
411050-0050	50	13	320	140 x 28	1	24.97
411050-0100	100	16	340	210 x 32	1	28.76

Centrifuge, Graduated, Beaded Top, White Scale, with Pour Spout

KIMAX tube with a short tapered bottom. Graduated and calibrated to contain. Top end has a pour spout. Scale, legend and marking spot are durable white ceramic enamel.

Kimble Article No.	Capacity (mL)	Subdivision (mL)	±Tolerance (mL)	O.D. x Length (mm)	Case Qty.	Case Price
45186-50	50	0-10 in 0.5	0 to 2 - ±0.2 Above 2 to 10- 0.3	29 x 118	12	367.44
		10-50 in 1	Above 10 - 0.5			

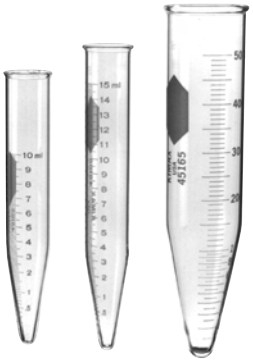


45186

Centrifuge, Graduated, Beaded Top, White Scale

Standard taper KIMAX tube. Graduated and calibrated to contain. Top is beaded for strength. Scale, legend and marking spot are printed in durable white ceramic enamel.

Kimble Article No.	Capacity (mL)	Subdivision (mL)	±Tolerance (mL)	O.D. x Length (mm)	Case Qty.	Case Price
45165-10	10	0.1	0 to 0.2 - ±0.05	17 x 108	12	185.04
45165-15	15	0.1	Above 0.2 to 1 - ±0.10 Above 1 to 3 - 0.15 Above 3 - 0.20	17 x 118	12	143.16
45165-50	50	0-10 in 0.5	0 to 1 - ±0.075 Above 1 to 2 - 0.15 Above 2 to 5 - 0.30 Above 5 to 10 - 0.50	29 x 133	12	239.64
		10-50 in 1	Above 10 - 1.00			



45165

Centrifuge, Graduated, Beaded Top, White Scale

Conical-type with a beaded rim.

Kontes Article No.	Capacity (mL)	Subdivision (mL)	Fits I.E.C. Shield Nos.	Approx. Overall Height x O.D. (mm)	Case Qty.	Case Price
410500-0005	5	0.1	322	101 x 13	12	297.33
410500-0015	15	0.1	302, 303, 356	120 x 17	12	206.20



410500

Centrifuge, Graduated, Beaded Top, Red Stain Scale

Standard taper KIMAX tube. Calibrated to contain. Top is beaded for strength. Scale and legend are printed in permanent red stain. Marking spot is blasted on both sizes. **For a 50 mL tube with finer lower end subdivisions, see 45167 .** Designed from Federal Specification NNN-T-780, Type I requirements.

Kimble Article No.	Capacity (mL)	Subdivision (mL)	±Tolerance (mL)	O.D. x Length (mm)	Case Qty.	Case Price
45164-15	15	0.1	0 to 0.2 -± 0.05 Above 0.2 to 1 - 0.10 Above 1 to 3 - 0.15 Above 3- 0.20	17 x 118	12	143.16



45164

Centrifuge, Graduated, Hopkins Vaccine

KIMAX tube used to standardize vaccines. The stem is graduated at 0.01 mL to 0.05 mL in 0.01 mL subdivisions, and the body has graduations at 1, 5 and 10 mL. Scale and legend are durable white ceramic enamel.

Kimble Article No.	Capacity (mL)	±Tolerance Stem	±Tolerance Body	O.D. x Length (mm)	Shelf-Pack Qty.	Case Qty.	Case Price
45225-10	10	0.0025	0.20	17 x 119	4	12	412.68



45225



45166

Centrifuge, Graduated, Threaded, with Screw Cap

Standard taper KIMAX tube with a screw thread finish. Graduated and calibrated to contain. Cap is packaged separately. Scale, legend and marking spot are durable white ceramic enamel. **Replacement cap is 45066B.**

Kimble Article No.	Capacity (mL)	Subdivision (mL)	±Tolerance (mL)	O.D. x Length (mm)	GPI Thread Finish	Case Qty.	Case Price
45166-15	15	0.1	0 to 0.2 - ±0.050 Above 0.2 to 1 - 0.100 Above 1 to 3 - 0.150 Above 3 - 0.200	17 x 130	15-415	12	224.04
45166-50	50	0-10 in 0.5 10-50 in 1	0 to 1 - ±0.075 Above 1 to 2 - 0.150 Above 2 to 5 - 0.300 Above 5 to 10 - 0.500 Above 10 - 1.000	29 x 147	24-410	12	341.88



45246

Centrifuge, Graduated, Screw Thread, 100 mL, Caps PTFE-Faced Liners (Caps Unattached)

Kimble, large-capacity, 100 mL tube with screw thread closure, 28-410 GPI. Cap supplied has PTFE-faced liner. For replacement, use 45066C-28. Scale, legend and marking spot are durable white ceramic enamel. Dimensions from 8" oil and weathering tube used in ASTM D2158.

Kimble Article No.	Cap. (mL)	Subdiv. (mL)	Tolerance ±(mL)		O.D. x Length (mm)	Shelf-Pack Qty.	Case Qty.	Case Price
45246-100	100	0-1 in 0.05	0-0.1	±0.02	37 x 203	6	12	522.84
			Above 0.1-0.30	0.03				
			Above 0.3-1	0.05				
		1-3 in 0.1	Above 1-3	0.10				
		3-6 in 0.2	Above 3-5	0.20				
		6-10 in 0.5	Above 5-10	0.50				
		10-100 in 1	Above 10	1.00				



45153

Centrifuge, Graduated, with Pennyhead ⅌ Glass Stopper

KIMAX tube with a top finished to accept a ⅌ stopper. Graduated and calibrated to contain. Scale, legend and marking spot are durable white ceramic enamel. Do not centrifuge with stopper in tube. **Replacement stopper is 41900R.**

Kimble Article No.	Cap. (mL)	Subdivision (mL)	±Tolerance (mL)	O.D. x Length without Stopper (mm)	⅌ Stopper Size	Shelf-Pack Qty.	Case Qty.	Case Price
45153-15	15	0.1	0 to 0.2 - ±0.050 Above 0.2 to 1 - 0.100 Above 1 to 3 - 0.150 Above 3- 0.200	17 x 136	13	6	12	311.76
45153-50	50	0-10 in 0.5 10-50 in 1	0 to 1 - ±0.075 Above 1 to 2 - 0.15 Above 2 to 5 - 0.30 Above 5 to 10 - 0.50	29 x 148	19	6	12	464.64



410550

Centrifuge, Graduated, with Flat Head ⅌ Stopper

Conical-type graduated centrifuge tube with a flat head ⅌ stopper. Flat head design permits stoppers to be placed on work surfaces without contaminating the ground zone and also facilitates the use of this vessel as a shaking tube. Do not centrifuge with stopper in tube. Replacement stoppers are 5100109, 5100113 and 5100116.

Kontes Article No.	Capacity (mL)	⅌ Stopper	Subdiv. (mL)	Fits I.E.C. Shield No.	Approx. Overall Ht. x O.D. (mm)	Case Qty.	Case Price
410550-0025	2.5	9	0.1	-	98 x 11	1	38.64
410550-0005	5	9	0.1	322	123 x 13	1	36.52
410550-0013	13	13	0.1	302	141 x 17	1	37.56
410550-0045	45	16	0-10 x 0.5 10-45 x 1	320	167 x 28	1	44.28
Tube Only							
410551-0025	Centrifuge Tube, 2.5 mL					1	30.74
410551-0005	Centrifuge Tube, 5 mL					1	30.74
410551-0013	Centrifuge Tube, 13 mL					1	30.74
410551-0045	Centrifuge Tube, 45 mL					1	33.49

Centrifuge, Plain, Beaded Top, Heavy-Duty

Standard taper KIMAX tube. Made with heavier walled tubing to withstand higher centrifugation speeds. Top is beaded for strength. **Note:** Outside dimensions are the same as 45160, however tubes will hold less due to heavier wall thickness.

Kimble Article No.	Capacity (mL)	O.D. x Length (mm)	Case Qty.	Case Price
45194-12	12	17 x 118	12	47.88



45194

Centrifuge, Plain, Heavy-Duty, Screw Thread, with Cap

Standard taper KIMAX tube is a heavy-duty version of 45161. Made with heavier walled tubing to withstand higher centrifugation speeds. Top has screw thread finish. Cap with rubber liner is included but not attached. **Replacement cap is 45066B.**

Kimble Article No.	Capacity (mL)	O.D. x Length (mm)	GPI Thread Finish	Case Qty.	Case Price
45196-40	40	29 x 140	24-410	12	244.44



45196

Centrifuge, Plain, Heavy-Duty, Screw Thread, with Cap

KIMAX tube with a heavy wall to withstand higher speeds in centrifuging. Especially useful in separating neutralized sediment for culturing, from specimens of sputum. Will be found useful also for other clinical work and in many microbiological applications. Marking spot is sandblasted. Supplied with autoclavable caps having cemented-in rubber liners. Cap is not attached. **Replacement cap is 45066B.**

Kimble Article No.	Capacity (mL)	O.D. x Length (mm)	GPI Thread Finish	Case Qty.	Case Price
45212-35	35	29 x 100	24-410	12	122.52
45212-50	50	29 x 123	24-410	12	173.04



45212

Centrifuge, Plain, Heavy-Duty, with Flathead PTFE Stopper

Standard taper KIMAX tube with color-coded, PTFE stopper. Made with heavier walled tubing to withstand higher centrifugation speeds. (Do not centrifuge with stopper in tube) **Replacement stopper is 41921R.**

Kimble Article No.	Capacity (mL)	℔ Stopper Size	O.D. (mm)	Length Without Stopper (mm)	Length With Stopper (mm)	Case Qty.	Case Price
45174-13	13	13	17	130	141	6	103.14
45174-50	50	16	29	155	167	6	150.30



45174

Centrifuge, Heavy-Duty, with Unattached Screw Cap

With a small bottom area for better concentration of sediment thus facilitating decanting of liquid. KIMAX bottle has a screw thread finish. Supplied with an unattached, white polypropylene closure with a pulp/vinyl coated liner.

Kimble Article No.	Capacity (mL)	Approx. O.D. x Length (mm)	GPI Thread Finish	Case Qty.	Case Price
14720-200	200	60 x 145	38-400	1	42.40



14720

Oil Centrifuge Tubes can be found in the ***PETROCHEMICAL*** Section.



45199

Centrifuge, Graduated, Beaded Top, Heavy-Duty

Standard taper KIMAX tube is a heavy-duty version of 45165. Made with heavier walled tubing to withstand higher centrifugation speeds. Top is beaded for strength. Graduated and calibrated to contain. Scale is white ceramic enamel.

Kimble Article No.	Cap. (mL)	Subdiv. (mL)	±Tolerance (mL)	O.D. x Length (mm)	Shelf-Pack Qty.	Case Qty.	Case Price
45199-12	12	0.1	0 to 0.2 -± 0.05 Above 0.2 to 1 - 0.10 Above 1 to 3 - 0.15 Above 3 - 0.20	17 x 118	-	12	169.32



45200

Centrifuge, Graduated, Screw Thread, Heavy-Duty, with Screw Cap

Standard taper KIMAX tube is a heavy-duty version of 45166. Graduated and calibrated to contain. Scale is durable white ceramic enamel. Made with heavier walled tubing to withstand higher centrifugation speeds. Top has a screw thread finish. Autoclavable cap with rubber liner is included but not attached. **Replacement cap is 45066B.**

Kimble Article No.	Cap. (mL)	Subdiv. (mL)	±Tolerance (mL)	O.D. x Length (mm)	GPI Thread Finish	Case Qty.	Case Price
45200-10	10	0.1	0 to 0.2 - ±0.05 Above 0.2 to 1 - 0.10 Above 1 to 3 - 0.15 Above 3 - 0.20	17 x 116	15-415	12	280.44
45200-40	40	0-10 in 0.5 10-40 in 1	0 to 1 -± 0.10 Above 1 to 2 - 0.20 Above 2 to 5 - 0.30 Above 5 to 10 - 0.50 Above 10 - 1.00	29 x 140	24-410	12	371.52



45176

Centrifuge, Graduated, To Contain, Heavy-Duty, with Color-Coded Flathead PTFE Stopper

KIMAX tube with a standard taper bottom and a graduated scale. Calibrated to contain. With top finish to accept a ⅋ stopper. Scale and legend are printed in permanent red stain on the 13 mL size and permanent brown stain on 50 mL size. Marking spot is blasted on both sizes. (Do not centrifuge with stopper in tube) **Replacement stopper is 41921R.**

Kimble Article No.	Cap. (mL)	Subdiv. (mL)	±Tolerance (mL)	O.D. x Length without Stopper (mm)	⅋ Stopper Size	Case Qty.	Case Price
45176-13	13	0.1	0 to 0.2 - ±0.05 Above 0.2 to 1 - 0.10 Above 1 to 3 - 0.15 Above 3 - 0.20	17 x 130	13	6	180.36
45176-50	50	0-10 in 0.5 10-50 in 1	0 to 1 - ±0.10 Above 1 to 2 - 0.20 Above 2 to 5 - 0.30 Above 5 to 10 - 0.50 Above 10 - 1.00	29 x 155	16	6	223.20



45201

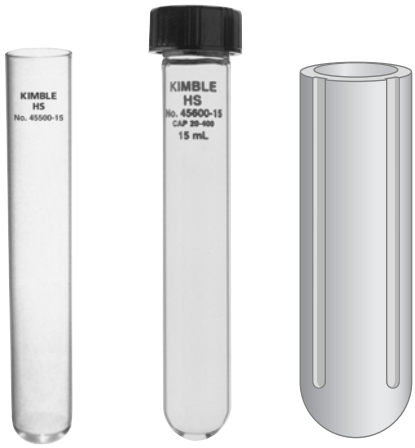
Centrifuge, Graduated, To Contain, Heavy-Duty, with ⅋ Glass Stopper

Standard taper KIMAX tube is a heavy-duty version of 45153. Calibrated to contain. Scale, legend and marking spot are durable white ceramic enamel. Tooled for a ⅋ stopper, which is included. (Do not centrifuge with stopper in tube) **Replacement stopper is 41900R.**

Kimble Article No.	Cap. (mL)	Subdiv. (mL)	±Tolerance (mL)	O.D. x Length without Stopper (mm)	⅋ Stopper Size	Case Qty.	Case Price
45201-10	10	0.1	0 to 0.2 - ±0.05 Above 0.2 to 1 - 0.15 Above 1 to 3 - 0.10 Above 3 - 0.20	17 x 117	13	6	179.10

Centrifuge, Plain, High Strength

KIMBLE (HS) High Strength 15 mL and 30 mL reusable centrifuge tubes are manufactured from Type 1, Class B, borosilicate glass. The tubes have been chemically strengthened to achieve a greater mechanical strength than standard borosilicate centrifuge tubes. These tubes can be centrifuged up to 13,100 RCF when used with an accessory rubber adapter sleeve in a 50 mL rotor cavity. They can withstand temperatures up to 300°C. Screw Cap tube is supplied with 73802 cap with PTFE-faced Rubber Liner.



45500 45600 45550

Plain

Kimble Article No.	Cap. (mL)	Approx. O.D. x Length (mm)	Case Qty.	Case Price
45500-15	15	18 x 102	6	49.80
45500-30	30	24 x 106	6	87.42

Screw Thread

Kimble Article No.	Cap. (mL)	GPI Thread Size	Approx. O.D. x Length (mm)	Case Qty.	Case Price
45600-15	15	20-400	18 x 102	6	131.16
45600-30	30	24-400	24 x 106	6	132.96

Replacement Caps and Accessory Sleeves

45550-15	Rubber Adapter Sleeve, 15 mL	2	25.92
45550-30	Rubber Adapter Sleeve, 30 mL	2	29.42
73802-20400	Cap, 20-400, For use with 45600-15	144	113.67
73802-24400	Cap, 24-400, For use with 45600-30	144	119.64



422560
422561



422570

Chromatography Sample Tube, with Flat Head ⅌ Stopper

Design allows total access to the sample via a microliter syringe needle. 422560 is supplied with an 850550-1018 flat head stopper. 422561 is supplied without a stopper.

Kontes Article No.	Capacity (mL)	⅌ Joint	Approx. Body O.D. (mm)	Graduations x Subdiv. (mL)	Approx. Overall Height (mm)	Case Qty.	Case Price
422560-0000	2	10/18	13	0-0.3 x 0.01, 0.3-2 x 0.1	118	1	60.11
422561-0000	2	10/18	13	0-0.3 x 0.01, 0.3-2 x 0.1	107	1	53.16
Replacement Stopper							
850550-1018	Stopper, ⅌ 10/18					1	11.35

Chromatography Sample Tube, with Screw Cap

Design allows access to the sample via a microliter syringe needle through the hole in the PTFE-lined screw cap.

Kontes Article No.	Capacity (mL)	GPI Thread Size	Approx. Body O.D. (mm)	Graduations x Subdiv. (mL)	Approx. Overall Height (mm)	Case Qty.	Case Price
422570-0000	2	13-425	14	0-0.3 x 0.01	105	1	45.63
Replacement Screw Cap							
410116-1325						48	6.48



45290

Color Comparison, AOCS

With the “Shadowless Bottom” feature. Used to determine the color of refined vegetable oils, such as cottonseed, corn and soybean oils, and also tallows, greases, fatty acids, etc., with Wesson type tintometers (AOCS Method Cc 13b), and of whole and refined tall oils with a Lovibond tintometer. Rings and legend are durable white ceramic enamel. Rings are located at specific distances from the inside bottom of the tube.

Kimble Article No.	Length (mm)	Approx. I.D. (mm)	Approx. O.D. (mm)	Distance Rings are from Inside Bottom (mm)	Case Qty.	Case Price
45290-154	154	19	22	25.4, 67, 133	6	66.66

KIMBLE NESSLER TUBES

The top graduation line on unmatched Kimble Nessler Color Comparison Tubes may be any distance from the outside bottom within the range of scale lengths shown in individual descriptions.

In matched sets, the top graduation lines of all the tubes in a set will be within the very close limits for a set given in catalog descriptions. However, the average distance of these lines from the outside bottom for a set may be anywhere within the range of scale lengths.

In case lots of matched sets, the average distances of the top lines from the outside of the bottom may vary from set to set anywhere within range of scale lengths. All graduation lines and legends are durable white ceramic enamel.



45310

Color Comparison, Low Form, Nessler (Unmatched)

With the “Shadowless Bottom” feature. Rings and legend are durable white ceramic enamel. Rings coincide with specific volumes of liquid.

Kimble Article No.	Graduations (mL)	Approx. O.D. and Height (mm)	Scale Length (mm)	Case Qty.	Case Price
45310-50	50	25 x 175	125-136	6	82.56
45310-100	100	32 x 200	145-158	6	100.98
45310-50100	50 & 100	32 x 200	145-158	6	128.34

Color Comparison, Low Form, Nessler (Matched Set of 6)

With the “Shadowless Bottom” feature. Rings and legend are durable white ceramic enamel. Rings coincide with specific volumes of liquid. Supplied in a matched set of 6. Graduated ring scale of any of the six **tubes will not vary by more than 3 mm** from that of any other tube within the set.

Kimble Article No.	Graduations (mL)	Approx. O.D. and Height (mm)	Scale Length (mm)	Sets Per Case	Case Price
45310A-50	50	25 x 175	125-136	1	102.14
45310A-100	100	32 x 200	145-158	1	140.57



45310A

Color Comparison, Nessler, APHA Standard (Unmatched)

With the “Shadowless Bottom” feature. Narrower and taller with a much longer scale length than 45310. The 50 mL size is specifically mentioned by the American Public Health Association in Standard Methods for the Examination of Water and Waste Water. Rings and legend are durable white ceramic enamel. Rings coincide with specific volumes of liquid. Designed from Federal Specification NNN-T-175, Type 1, Class 2 requirements.

Kimble Article No.	Graduations (mL)	Approx. O.D. and Height (mm)	Scale Length (mm)	Case Qty.	Case Price
45315-50	50	20 x 300	200-220	6	101.34
45315-100	100	24 x 375	275-295	6	125.22
45315-50100	50 & 100	24 x 375	275-295	6	141.00



45315

Color Comparison, Nessler, APHA Standard, (Matched Set of 6)

With the “Shadowless Bottom” feature. Narrower and taller with a much longer scale length than 45310. The 50 mL size is specifically mentioned by the American Public Health Association in Standard Methods for the Examination of Water and Waste Water (Method 4500-NH^3). Rings and legend are durable white ceramic enamel. Rings coincide with specific volumes of liquid. Designed from Federal Specification NNN-T-175, Type 1, Class 2 requirements. Supplied in a matched set of 6. Graduated ring scale of any of the 6 tubes **will not vary by more than 1.5 mm** for the 50 mL and 2.0 mm for the 100 mL sizes, from that of any other tube within the set.

Kimble Article No.	Graduations (mL)	Approx. O.D. and Height (mm)	Scale Length (mm)	Sets Per Case	Case Price
45315A-50	50	20 x 300	200-220	1	113.53
45315A-100	100	24 x 375	275-295	1	156.63
45315A-50100	50 & 100	24 x 375	275-295	1	162.51



45315A

Color Comparison, Nessler, APHA Standard, (Matched Set of 12)

With the “Shadowless Bottom” feature. Taller and more narrow with a much longer scale length than 45310. The 50 mL size is specifically mentioned by the American Public Health Association in Standard Methods for the Examination of Water and Waste Water (Method 4500-NH^3). Rings and legend are durable white ceramic enamel. Rings coincide with specific volumes of liquid. Designed from Federal Specification NNN-T-175, Type 1, Class 2 requirements. Supplied in a matched set of 12. Graduated ring scale of **all 12 tubes is within 1.5 mm** (50 mL) and 2.0 mm(100 mL sizes).

Kimble Article No.	Graduations (mL)	Approx. O.D. and Height (mm)	Scale Length (mm)	Sets Per Case	Case Price
45315B-50	50	20 x 300	200-220	1	259.38
45315B-100	100	24 x 375	275-295	1	334.83



45315B



45325A



45325B

Nessler, APHA Standard, with Cap Stopper (Matched Set of 6)

Taller and more narrow with a much longer scale length than 45310. Features the "Shadowless Bottom" and ⅋ cap style stoppers that need not be removed to take readings. The word "Shadowless" is printed on the side of the stopper to distinguish between these stoppers and regular weighing bottle stoppers of the same size. Supplied in a matched set of 6. Graduated ring scale of any of the **six tubes will not vary by more than 1.5 mm** for the 50 mL and 2.0 mm for the 100 mL sizes, from that of other tube within the set. The 50-100 mL size is designed from ASTM D1209. Replacement cap is 15182.

Kimble Article No.	Graduations (mL)	Approx. O.D. (mm)	Approx. Height Including Stopper (mm)	Scale Length (mm)	⅋ Joint	Sets Per Case	Case Price
45325A-50	50	20	312	200-220	19/10	1	209.47

Nessler, APHA Standard, with Cap Stopper (Matched Set of 12)

Taller and more narrow with a much longer scale length than 45310. With the "Shadowless Bottom" feature and ⅋ cap style stoppers that need not be removed when making readings. The word "Shadowless" is printed on the side of the stopper to distinguish between these stoppers and regular weighing bottle stoppers of the same size. Supplied in a matched set of 12. Graduated ring scale of any of the **twelve tubes will not vary by more than 1.5 mm** for the 50 mL and 2.0 mm for the 100 mL sizes, from that of any other tube within set. The 50-100 mL size is designed from ASTM D1209.

Kimble Article No.	Graduations (mL)	Approx. O.D. (mm)	Approx. Height Including Stopper (mm)	Scale Length (mm)	⅋ Joint	Sets Per Case	Case Price
45325B-50100	50 & 100	24	390	275-295	24/12	1	609.80



15182

Cap for Series 45320A and 45325A & B Nessler Tubes

Kimble Article No.	Description	Case Qty.	Case Price
15182-1910	Nessler Tubes, size ⅋ 19/10	1	23.04
15182-2412	Nessler Tubes, size ⅋ 24/12	1	31.05

Rim Top, N-51A Borosilicate Glass

Borosilicate glass KIMAX-51 composition assures the best all-around chemical durability of commercial glasses now available for laboratory ware. Complies with ASTM Specification E438, Type I, Class B glass requirements. KIMAX-51 has excellent chemical resistance against sodium leaching - a factor common in soda lime glass products. These are premium quality tubes with sturdy, uniform bottoms and consistent lengths. The 10 and 12 x 75 mm sizes are suitable for cell washing procedures. Tubes are packed in convenient trays for ease of use on bench topsand in drawers The 10 and 12 x 75 mm sizes fit into Kimble 73510 stainless steel dispensers. The 6 x 50 mm size is often referred to as a “Durham tube”. Trays are shrink wrapped in plastic film with tubes remaining in constant alignment for protection against in-transit breakage and contamination. Designed from ASTM Specification E890.



73500

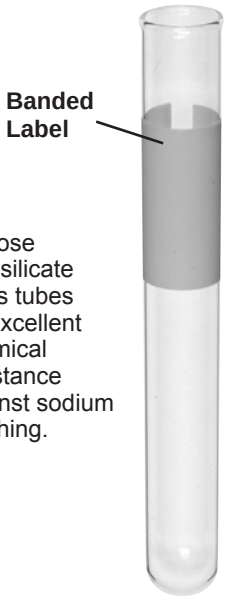
Kimble Article No.	Size (mm)	Pkg. Qty.	Case Qty.	Case Price
73500-650	6 x 50	100	1000	64.90
73500-1075	10 x 75	250	1000	67.44
73500-1275	12 x 75	250	1000	72.72
73500-13100	13 x 100	250	1000	80.05
73500-16100	16 x 100	250	1000	100.36
73500-16125	16 x 125	250	1000	118.76
73500-16150	16 x 150	250	1000	114.50
73500-18150	18 x 150	125	500	89.94
73500-20150	20 x 150	250	500	139.36
73500-25150	25 x 150	125	500	159.37

KIM-KAP®, Polypropylene Closures, Autoclavable, Color Coded - natural, red, green, yellow and blue



73660

Kimble Article No.	Size (For tubes of OD, mm)	Color	Shelf-Pack Qty.	Case Qty.	Case Price
73660-13	13	Natural	500	1000	57.25
73660-16	16	Natural	500	1000	61.05
73660-18	18	Natural	500	1000	68.59
73660-20	20	Natural	250	500	58.63
73660-25	25	Natural	250	500	77.56
73660-38	38	Natural	125	250	81.19
73662-13	13	Red	100	1000	66.51
73662-16	16	Red	100	1000	69.00
73662-18	18	Red	100	1000	79.55
73662-20	20	Red	100	500	67.52
73662-25	25	Red	100	500	86.02
73663-13	13	Green	100	1000	66.51
73663-16	16	Green	100	1000	69.00
73663-18	18	Green	100	1000	79.55
73663-20	20	Green	100	500	67.52
73663-25	25	Green	100	500	86.02
73664-13	13	Yellow	100	1000	66.51
73664-16	16	Yellow	100	1000	69.00
73664-18	18	Yellow	100	1000	79.55
73664-20	20	Yellow	100	500	67.52
73664-25	25	Yellow	100	500	86.02
73665-13	13	Blue	100	1000	66.51
73665-16	16	Blue	100	1000	69.00
73665-18	18	Blue	100	1000	79.55
73665-20	20	Blue	100	500	67.52
73665-25	25	Blue	100	500	86.02



Choose borosilicate glass tubes for excellent chemical resistance against sodium leaching.



Other tube sizes and label colors are available. Please contact us for details.

Mark-M™, Rim Top, with Marking Labels

- **Mark-M™ Tubes** with Permanent marking spots
- Choose borosilicate or soda lime glass
- Uniform dimensions

Chase brand Mark-M glass culture tubes feature a permanent ceramic label, fused to the glass, that is easily written on with marker or pencil. Labels are located 3/4" from the open end and are available in a variety of colors. All tubes have sturdy, uniform bottoms and consistent lengths.

Borosilicate Glass Tubes with 3/4" Banded Labels

Chase Article No.	Size (mm)	Label Color	Pack Qty.	Case Qty.	Case Price
60A10BZXB	10 x 75	Blue (25± 10% case min.)	250	1000	74.20
60A10BZXG	10 x 75	Green (25± 10% case min.)	250	1000	74.20
60A10BZXL	10 x 75	Yellow (25± 10% case min.)	250	1000	74.20
60A10BZXW	10 x 75	White	250	1000	74.20
60B12BZXB	12 x 75	Blue (25± 10% case min.)	250	1000	84.80
60B12BZXG	12 x 75	Green (25± 10% case min.)	250	1000	84.80
60B12BZXL	12 x 75	Yellow (25± 10% case min.)	250	1000	84.80
60B12BZXW	12 x 75	White	250	1000	84.80

Borosilicate Glass Tubes with 1-3/8" Vertical Labels

60A10BZB	10 x 75	Blue	250	1000	74.20
60A10BZG	10 x 75	Green (25± 10% case min.)	250	1000	74.20
60A10BZL	10 x 75	Yellow	250	1000	74.20
60A10BZW	10 x 75	White	250	1000	74.20
60B12BZB	12 x 75	Blue	250	1000	84.80
60B12BZG	12 x 75	Green (25± 10% case min.)	250	1000	84.80
60B12BZL	12 x 75	Yellow	250	1000	84.80
60B12BZW	12 x 75	White	250	1000	84.80
60C13BZW	13 x 100	White	250	1000	84.80
60E16BZW	16 x 100	White	250	1000	116.60

Soda Lime Glass Mark-M™ Tubes with 3/4" Banded Labels

60BM12MXW	12 x 75	White	250	1000	63.60

Soda Lime Glass Mark-M™ Tubes with 1-3/8" Vertical Labels

60AM10MW	10 x 75	White	250	1000	63.60
60AM10MXW	10 x 75	White	250	1000	63.60
60BM12	12 x 75	Plain	250	1000	62.40
60BM12MW	12 x 75	White	250	1000	74.20

Soda Lime Glass Mark-M™ Tubes, Plain

60AM10	10 x 75	Plain	250	1000	52.00
60BM12	12 x 75	Plain	250	1000	62.40
60CM13	13 x 100	Plain	250	1000	62.40
60MM190	16 x 75	Plain	250	1000	104.00
60EM16	16 x 100	Plain	250	1000	83.20
60FM165	16 x 125	Plain	250	1000	93.60
60GM166	16 x 150	Plain	250	1000	104.00
60KM18	18 x 150	Plain	250	1000	72.80

Blood Typing

- Pre-labeled with blood type
- Convenient package quantities
- Permanent color-coded labels
- Borosilicate glass

Chase brand blood typing tubes feature a permanent ceramic label, fused to the glass, that is easily written on with marker or pencil. Tubes are pre-labeled with the blood type and a color-coded band that is placed to allow an unobstructed view of cell suspension.

A1 Yellow Color-Coded Tubes

Chase Article No.	Size (mm)	Label Color	Pack Qty.	Case Qty.	Case Price
60A10BZ1	10 x 75	yellow	250	1000	74.20
60B12BZ1	12 x 75	yellow	250	1000	74.20

ANTI A Blue Color-Coded Tubes

60A10BZ2	10 x 75	blue	250	1000	74.20
60B12BZ2	12 x 75	blue	250	1000	74.20

ANTI B Yellow Color-Coded Tubes

60A10BZ4	10 x 75	yellow	250	1000	74.20
60B12BZ4	12 x 75	yellow	250	1000	74.20

B Blue Color-Coded Tubes

60A10BZ3	10 x 75	blue	250	1000	74.20
60B12BZ3	12 x 75	blue	250	1000	74.20

IIS White Color-Coded Tubes

60A10BZ6	10 x 75	white	250	1000	74.20
60B12BZ6	12 x 75	white	250	1000	74.20

IS Green Color-Coded Tubes

60A10BZ5	10 x 75	green	250	1000	74.20
60B12BZ5	12 x 75	green	250	1000	74.20



Pre-labeled tubes are easy to write on.



73750



90H13100F-
90P20125F



73770



73800

Culture, Screw Thread, Borosilicate Glass

Tubes are suitable for tissue culture work and general bacteriological use. Tubes are made from KIMAX-51 borosilicate glass in compliance with ASTM Specification E438, Type I, Class A or B glass requirements. Each tube has a chevron marking area. Trays are shrink wrapped in plastic film in modular trays. Supplied without caps. **See 73800, 73802 and 73805 for caps.**

Kimble Article No.	Approx. O.D. (mm)	Approx. Length (mm)	Approx. Overflow Capacity (mL)	GPI Thread Finish	Approx. Inner Pack Qty	Case Qty.	Case Price
73750-13100	13	100	8	13-415	500	1000	286.82
73750-16100	16	100	12	15-415	250	1000	280.06
73750-16125	16	125	16	15-415	250	1000	307.49
73750-16150	16	150	20	15-415	250	1000	308.03
73750-20125	20	125	25	18-415	250	500	206.11
73750-20150	20	150	30	18-415	250	500	244.71

Culture, Screw Thread, Flat Bottom, Borosilicate Glass

Tubes are a suitable for tissue culture work and general bacteriological use. With a flat bottom and without a marking area. Flat bottoms contribute to stability when tubes are set on end. Trays are shrink wrapped in plastic film in modular trays. Supplied without caps. **See 73800, 73802 and 73805 for caps.**

Chase Article No.	Approx. O.D. (mm)	Approx. Length (mm)	Approx. Overflow Capacity (mL)	GPI Thread Finish	Approx. Inner Pack Qty	Case Qty.	Case Price
90H13100F	13	100	8	13-415	250	1000	290.08
90J15103F	15	103	10	15-415	250	1000	290.08
90K16100F	16	100	12	15-415	250	1000	310.80
90K16125F	16	125	16	15-415	250	1000	372.96
90P20113F	20	113	20	18-415	125	500	196.84
90P20125F	20	125	25	18-415	125	500	196.84

Culture, Screw Thread, Round Bottom, Borosilicate Glass

Tubes are suitable for tissue culture work and general bacteriological use. Without a marking area. Trays are shrink wrapped in plastic film in modular trays. Supplied without caps. **See 73800, 73802 and 73805 for caps.**

Kimble Article No.	Approx. O.D. (mm)	Approx. Length (mm)	Approx. Overflow Capacity (mL)	GPI Thread Finish	Approx. Inner Pack Qty	Case Qty.	Case Price
73770-13100	13	100	8	13-415	500	1000	239.61
73770-16100	16	100	12	15-415	250	1000	277.10
73770-16125	16	125	16	15-415	250	1000	284.97
73770-16150	16	150	20	15-415	250	1000	305.34
73770-20125	20	125	25	18-415	250	500	210.57
73770-20150	20	150	30	18-415	250	500	239.61

Cap with Cemented-In Rubber Liner

Closure is made of a special phenolic material (wood filled) very resistant to the effects of temperature and steam encountered in autoclaving. A cemented-in rubber liner is provided, and the cement used has also been selected to retain its adhesive properties during autoclaving. Intended for use with 73750, 73760 and 73770 disposable culture tubes. May also be used with 73785 disposable centrifuge tubes. Designed from ASTM Specification E982.

Kimble Article No.	GPI Thread Finish	Approx. Case Qty.	Case Price
73800-13415	13-415	1000	90.49
73800-15415	15-415	1000	103.89
73800-18415	18-415	1000	128.58

Culture, Rim Top, N-51A Borosilicate Glass

Borosilicate glass KIMAX-51 glass tubes with fire-polished top rims and uniform wall thicknesses for maximum heat transfer and chemical resistance. Without a marking spot. Designed from ASTM Specification E982, Type IV requirements. The 6 x 50 mm size is often referred to as a “Durham tube”.

Kimble Article No.	Approx. O.D. (mm)	Approx. Length (mm)	Overflow Capacity (mL)	Shelf-Pack Qty.	Case Qty.	Case Price
45060-650	6	50	0.7	72	720	143.44
45060-13100	13	100	10	72	720	264.23
45060-16150	16	150	24	72	576	265.74
45060-19150	19	150	30	72	576	265.74
45060-25150	25	150	55	72	288	247.62
45060-25200	25	200	75	24	192	181.19



45060

Culture, Rim Top, KG-33 Borosilicate Glass, with Marking Spot

KIMAX culture tube made from KG-33 glass tubing, with a fire-polished top rim and uniform wall thickness for maximum heat transfer and chemical resistance. Durable white ceramic enamel marking spot. Designed from ASTM Specification E982, Type IV requirements.

Kimble Article No.	Approx. O.D. (mm)	Approx. Length (mm)	Overflow Capacity (mL)	Shelf-Pack Qty.	Case Qty.	Case Price
45048-1075	10	75	4	72	720	264.23
45048-1275	12	75	6	72	720	264.23
45048-13100	13	100	10	72	720	279.33
45048-15125	15	125	16	72	720	332.18
45048-16100	16	100	15	72	576	277.82
45048-16125	16	125	20	72	576	265.74
45048-16150	16	150	24	72	576	320.10
45048-18150	18	150	28	72	576	356.34
45048-20150	20	150	36	72	576	404.65
45048-25150	25	150	55	72	288	341.24
45048-25250	25	250	95	24	144	410.69



45048

Culture, Rim Top, Graduated, with Marking Spot

KIMAX culture tube has a smooth, fire-polished top. Graduation line is located at the 10 mL level. Intended primarily for use in the testing of milk for the presence of bacteria by the methylene blue reductase test. Described in APHA Standard Methods for the Examination of Dairy Products. Designed from ASTM Specification E982, Type II requirements.

Kimble Article No.	Capacity (mL)	±Tol. (mL)	Approx. O.D. (mm)	Approx. Length (mm)	Shelf-Pack Qty.	Case Qty.	Case Price
45071-10	10	0.12	16	150	12	72	219.69



45071

KIM-KAP®, Polypropylene Closures, Autoclavable, Color Coded - natural, red, green, yellow and blue

Kimble Article No.	Size (For tubes of OD, mm)	Color	Shelf-Pack Qty.	Case Qty.	Case Price
73660-13	13	Natural	500	1000	57.25
73660-16	16	Natural	500	1000	61.05
73660-18	18	Natural	500	1000	68.59
73660-20	20	Natural	250	500	58.63
73660-25	25	Natural	250	500	77.56
73660-38	38	Natural	125	250	81.19
73662-13	13	Red	100	1000	66.51
73662-16	16	Red	100	1000	69.00
73662-18	18	Red	100	1000	79.55
73662-20	20	Red	100	500	67.52
73662-25	25	Red	100	500	86.02
73663-13	13	Green	100	1000	66.51
73663-16	16	Green	100	1000	69.00
73663-18	18	Green	100	1000	79.55
73663-20	20	Green	100	500	67.52
73663-25	25	Green	100	500	86.02

Kimble Article No.	Size (For tubes of O.D., mm)	Color	Shelf-Pack Qty.	Case Qty.	Case Price
73664-13	13	Yellow	100	1000	66.51
73664-16	16	Yellow	100	1000	69.00
73664-18	18	Yellow	100	1000	79.55
73664-20	20	Yellow	100	500	67.52
73664-25	25	Yellow	100	500	86.02
73665-13	13	Blue	100	1000	66.51
73665-16	16	Blue	100	1000	69.00
73665-18	18	Blue	100	1000	79.55
73665-20	20	Blue	100	500	67.52
73665-25	25	Blue	100	500	86.02



73660



45066

Culture, Screw Thread, KG-33 Borosilicate Glass, with Rubber Lined Cap, Unattached

KIMAX culture tube made from tubing with uniform wall thickness for maximum heat transfer and chemical resistance. Thread finish complies with Glass Packaging Institute (GPI) requirements. Cap is not attached. The 20 x 125 mm size is suitable for the determination of insulin according to the method of Alving, Rubin and Millor, Journal of Biological Chemistry, 127, 3 (March 1939). Designed from ASTM E982, Type VI, Class A requirements. **Replacement caps are 45066B.**

Kimble Article No.	Approx. O.D. and Length (mm)	Capacity to Neck (mL)	GPI Thread Finish	Shelf-Pack Qty.	Case Qty.	Case Price
45066-13100	13 x 100	8	13-415	72	288	326.14
45066-16100	16 x 100	12	15-415	72	288	455.99
45066-16125	16 x 125	16	15-415	72	288	455.99
45066-16150	16 x 150	20	15-415	72	288	455.99
45066-20125	20 x 125	25	18-415	48	192	370.43
45066-20150	20 x 150	30	18-415	48	192	422.77
45066-25150	25 x 150	50	24-410	36	144	348.79
45066-25200	25 x 200	70	24-410	36	144	388.04
45066-38200	38 x 200	160	38-430	-	24	234.03



45066A

Culture, Screw Thread, KG-33 Borosilicate Glass, with PTFE-Faced Rubber Lined Cap, Unattached

KIMAX culture tube made from tubing with uniform wall thickness for maximum heat transfer and chemical resistance. Thread finish complies with Glass Packaging Institute (GPI) requirements. Cap has a PTFE-faced rubber liner and is not attached. Designed from ASTM E982, Type VI, Class B requirements. **Replacement caps are 45066C.**

Kimble Article No.	Approx. O.D. and Length (mm)	Capacity to Neck (mL)	GPI Thread Finish	Shelf-Pack Qty.	Case Qty.	Case Price
45066A-13100	13 x 100	8	13-415	72	288	434.85
45066A-16100	16 x 100	12	15-415	72	288	474.11
45066A-16125	16 x 125	16	15-415	72	288	522.42
45066A-16150	16 x 150	20	15-415	72	288	555.64
45066A-20125	20 x 125	25	18-415	48	192	465.05
45066A-20150	20 x 150	30	18-415	48	192	489.21
45066A-25150	25 x 150	50	24-410	36	144	437.87
45066A-25200	25 x 200	70	24-410	36	144	460.52



45066B

Culture Tube Cap, Phenolic with White Rubber Liner

Cap is made of a special phenolic material (mineral filled) to withstand the effects of repeated autoclaving. White rubber liner/cap bond was selected to retain its adhesive properties during autoclaving. This cap is threaded from the liner down approximately to half the total weight, except 38-430 which has full threads. The cap is identified in ASTM Specification E982, Class A requirements.

Kimble Article No.	Size	Approx. Cap Height (mm)	Case Qty.	Case Price
45066B-13	13-415	14	300	87.00
45066B-15	15-415	16	300	69.00
45066B-18	18-415	18	225	85.50
45066B-24	24-410	19	150	84.00
45066B-28	28-410	20	150	316.50
45066B-38	38-430	26	150	303.00



45066C

Culture Tube Cap, Phenolic with PTFE-Faced Rubber Liner

Cap is made of a special phenolic material (mineral filled) to withstand the effects of repeated autoclaving. With a PTFE-faced rubber liner. Liner/cap bond was selected to retain its adhesive properties during autoclaving. This cap is identified in ASTM Specification E982, Class B requirements.

Kimble Article No.	Size	Approx. Cap Height (mm)	Case Qty.	Case Price
45066C-13	13-415	14	300	228.00
45066C-15	15-415	16	300	228.00
45066C-18	18-415	18	225	216.00
45066C-24	24-410	19	150	244.50
45066C-28	28-410	20	150	738.00
45066C-38	38-430	26	50	284.00

Culture Tube Cap, White Polypropylene, Linerless, Economy

White polypropylene. Of one-piece construction with a seal achieved by a unique interior design. Will withstand repeated autoclavings, but closures should be removed or loosely applied as they may melt. Intended for use with 73750, 73760, 73770 disposable culture tubes and 73785 disposable centrifuge tubes. Designed from ASTM Specification E982.

Kimble Article No.	GPI Thread Finish	Approx. Case Qty.	Case Price
73805-15415	15-415	1000	63.32

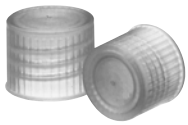


73805

Culture Tube Cap, Natural Polypropylene, Linerless, Economy

Natural polypropylene. Of one-piece construction with a seal achieved due to a unique inner sealing ring. Autoclavable. Intended for use with 73750, 73760, 73770 disposable culture tubes and 73785 disposable centrifuge tubes. Designed from ASTM Specification E982.

Kimble Article No.	GPI Thread Finish	Approx. Case Qty.	Case Price
73805B-13415	13-415	1000	63.12
73805B-15415	15-415	1000	63.32
73805B-18415	18-415	500	35.71



73805B

For a complete listing of closures, see the ***CAPS / CLOSURES*** section.

Coliwasa, Glass

The two-part borosilicate glass tube has a ball in the lower end which acts as a check valve to prevent sample loss during transfer. Both parts are prescored, allowing the unit to be easily snapped apart for safe disposal. Each part comes wrapped in corrugated paper.

Kimble Article No.	Approx. Capacity (mL)	Approx. O.D. (Inches)	Approx. Length (Inches)	Case Qty.	Case Price
76100-200	200	.875	42	12	197.18



76100

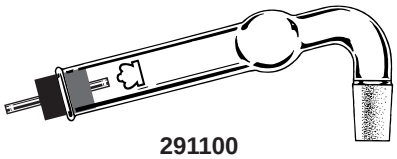
Drum Sampler, Glass

Conventional open-end drum thieves. Insert empty tube in the drum, hold thumb over the top end and withdraw. Borosilicate glass units are easily broken for quick disposal.

Kimble Article No.	Approx. Capacity (mL)	Approx. Dia. (mm)	Approx. Length (Inches)	Case Qty.	Case Price
76000-25	25	7.5	43	100	219.83
76000-75	75	12	43	25	79.66
76000-150	150	18	43	25	136.04



76000

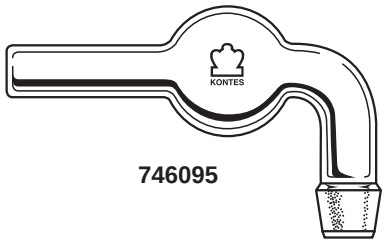


291100

Bent, ⅋ Joint

75° angle-type for use in fume hoods where a vertical-type tube will not fit. Beaded rim resists breakage. Supplied with rubber stopper and glass inlet tube.

Kontes Article No.	⅋ Joint	Rubber Stopper Size	Approx. Overall Height x Width (mm)	Case Qty.	Case Price
291100-0000	14/20	#00	65 x 105	1	28.57
291100-0019	19/22	#00	65 x 105	1	31.43



746095

Drying Tube, Bent

Modified drying tube with an expansion bulb for $CaCl_2$, as shown in the textbook, Microscale Organic Chemistry, Szafran, Pike, Singh, John Wiley & Sons, Inc.

Used to protect moisture sensitive reactions from the atmosphere with an unsealed system.

Kontes Article No.	⅋ Joint	Approx. Bulb O.D. (mm)	Approx. Overall Height x Width (mm)	Case Qty.	Case Price
746095-0000	14/10	30	45 x 85	1	22.72



562490

Straight, Beaded Rim

Straight tube with a bulb desiccant chamber. Also useful as a molecular sieve for running anhydrous reactions. Designed for use with BEVEL-SEAL™ adapters or a rubber stopper.

Kontes Article No.	Stem O.D. (mm)	Approx. Overall Height x Width (mm)	Case Qty.	Case Price
562490-0000	8	145 x 30	1	17.07

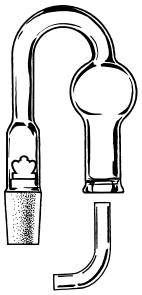


291000

Straight, ⅋ 14/20 Joints

Vertical-type for use with a suitable desiccant such as calcium chloride, or a molecular sieve.

Kontes Article No.	⅋ Joints	Approx. Overall Height (mm)	Case Qty.	Case Price
291000-0000	14/20	130	1	36.01

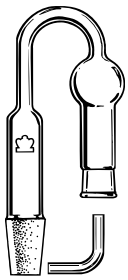


291200
291210

U-Shaped, Medium Length ⅋ Joint

"U" shaped and supplied with a bent inlet tube.

Kontes Article No.	⅋ Joint	Approx. Overall Height x Width (mm)	Case Qty.	Case Price
291200-0000	14/20	90 x 55	1	30.42
291210-0000	19/22	120 x 80	1	32.23

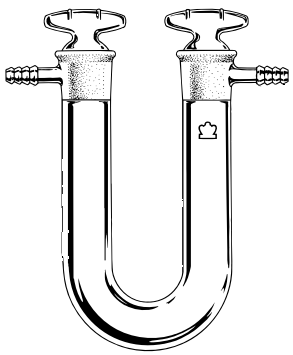


562500

U-Shaped, Full Length ⅋ Joint

Inner joint at the bottom with a bulb desiccant chamber. Unit is supplied with a vent tube as illustrated.

Kontes Article No.	⅋ Joint	Approx. Overall Height x Width (mm)	Case Qty.	Case Price
562500-2440	24/40	185 x 80	1	39.15



891000

U-Shaped, Schwartz-Type, Medium Length ⅋ Joints

Schwartz-type absorption tube with hollow, medium length, ⅋ stoppers. Each stopper hole aligns with a side hose connector for on/off action.

Kontes Article No.	⅋ Joints	Tube O.D. (mm)	Hose Connections	Approx. Overall Height x Width (mm)	Case Qty.	Case Price
891000-1420	14/20	17	#1	168 x 133	1	151.09

Fermentation, Small, 13 x 100

KIMAX tube with a bulb and glass foot. Vertical tube has a closed rounded top. Bulb is made to have a capacity greater than that of the vertical tube.

Kimble Article No.	Vertical Tube O.D. x Length (mm)	Approx. O.D. of Bulb (mm)	Case Qty.	Case Price
46150-99	13 x 100	30	1	26.28



46150

Fermentation, Large, 17 x 140

KIMAX tube with a bulb and a glass foot. Larger in size than 46150. Vertical tube has a closed rounded top.

Kimble Article No.	Vertical Tube O.D. x Length (mm)	Approx. O.D. of Bulb (mm)	Case Qty.	Case Price
46155-99	17 x 140	38	1	29.45



46155

Fermentation, Graduated, 13 x 100

KIMAX tube with a bulb and glass foot. Graduated vertical tube. Durable white ceramic enamel graduations start at 0.3 mL.

Kimble Article No.	Capacity (mL)	Sub-division (mL)	±Tol. (mL)	Vertical Tube O.D. x Length (mm)	Approx. O.D. of Bulb (mm)	Case Qty.	Case Price
46162-5	5	0.1	0.10	13 x 100	30	1	34.24



46162

Gas Measuring

KIMAX gas measuring tube with a durable black ceramic enamel scale. Closed at the zero end of the tube. Without stopcock.

Kimble Article No.	Capacity (mL)	Interval Grad. (mL)	Sub-Division (mL)	±Tol. (mL)	Overall Length (mm)	Case Qty.	Case Price
30060-50	50	0.5 to 50	0.1	0.10	635	1	63.02

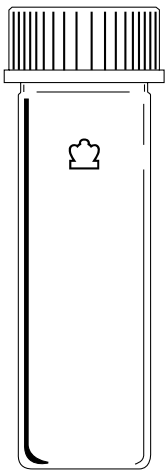


30060

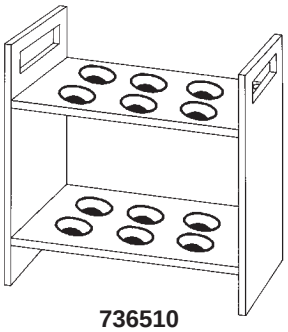
KONTES
custom glass shop
*call toll-free **800-682-6644***
customglass@kimble-chase.com

Contact the **Kontes Custom Glass Shop** at KIMBLE CHASE for modifications of standard products or fabrication of your unique designs. And when it comes to repairs, we can save you up to 75% of the cost of a new item. Save an additional 10% on repairs of Kontes or Kimble Brand products. Fax your requirements to **856-692-6644**.

- **Custom Fabrications**
- **Quality Repairs**
- **Modifications of All Kinds**
- **No Order Too Small**
- **Quick Turnaround**



736500



736510

Hybridization, with Screw cap

For use with hybridization incubators with rotators, the tubes offer a cleaner and safer alternative to hybridizing in bags. Multiple Northern, Southern or Western blots (up to 5 per tube) can be hybridized in a single tube, using nylon mesh sheets to separate the hybridization membranes. Probe volumes are significantly reduced with tubes; approximately 5 mL of probe per blot. Use one long (300 mm) tube per rotator position or two short (150 mm) tubes per position (one tube per clamp) in most standard hybridization incubators. Tubes are complete with 45 mm polypropylene caps and silicone o-rings.

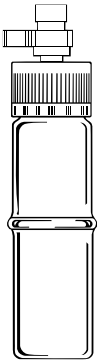
Kontes Article No.	Approx. Dimensions I.D. x Length (mm)	O-ring Size	Cap Size	Case Qty.	Case Price
736500-3515	35 x 150	323	45-4	2	102.34
736500-3530	35 x 300	323	45-4	2	118.35
Replacement Part					
758210-0323	O-Ring, Silicone			1	8.75
Accessory Racks					
736510-4506	Rack, 6 Place Polypropylene			1	134.78

Hydrolysis / Derivatization Vial, for Proteins and Peptides

This reaction vial has been designed to interface with the Waters PICO-TAG™ Work Station. It features a PTFE cap with a CTFE screw-type on-off valve. The PTFE flap that makes the cap-to-vial seal is backed up by a FKM o-ring to prevent leaks that could occur through “cold flow” of the PTFE. Vial holds twelve 6 x 50 mm sample tubes. This vial can also be used independently of the PICO-TAG work station as a versatile reaction vial for protein hydrolysis and derivatization.

Note: Not Recommended for use over 150°C.

Kontes Article No.	Approx. Top Port O.D. (mm)	Approx. Overall O.D. x Height (mm)	Case Qty.	Case Price
896820-0000	3	30 x 120	1	179.09



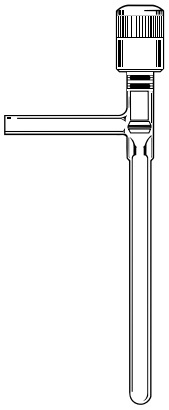
896820

Hydrolysis, Vacuum

Versatile tube for use where a vacuum environment is desired. Useful in protein hydrolysis and amino acid separations. Other applications include sealed tube reactions, freeze drying, and concentration.

Kontes Article No.	Vacuum Valve Size (mm)	Tube O.D. x Height (mm)	Tube Volume (mL)	Plug Article Number	Approx. Overall Height (mm)	Case Qty.	Case Price
896860-2860	2	8 x 60	1.5	826601-4002	108	1	98.44
896860-4010	4	10 x 100	5	826601-4004	158	1	101.99
896860-4015	4	10 x 150	7.5	826601-4004	208	1	104.48
896860-8910	8	19 x 100	20	826501-4008	165	1	167.71
Replacement Parts							
826601-4004	Valve Plug, Size 4, with PEEK Knob				1	1	31.85
826501-4008	Valve Plug, Size 8, with PEEK Knob				1	1	42.84

Note: Not Recommended for use over 150°C.

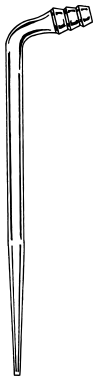


896860

Inlet, Bleed-Type

For the introduction of gases or liquids during reactions. Fits either PTFE or glass universal adapters.

Kontes Article No.	Approx. Body O.D. (mm)	Tip I.D. (mm)	Hose Connection	Approx. Overall Height x Width (mm)	Case Qty.	Case Price
275501-0000	6	0.6-0.8	#1	135 x 35	1	16.56

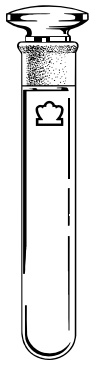


275501

Oxidation

Used for collecting and drying chromatography eluates in an above ambient temperature air stream. Supplied complete with a ⅋ 16 flat head stopper. Replacement stopper is 5100116. Reference: “Double Isotope Derivative Assay of Aldosterone in Biological Extracts.” Journal of Biological Chemistry, 235 : 1640.

Kontes Article No.	Approx. Cap. (mL)	⅋ Joint	Body O.D. x Height (mm)	Approx Overall Height (mm)	Case Qty.	Case Price
896900-0021	20	16	18 x 115	142	1	26.58



896900

Recrystallization, Craig

Combination crystallizing and filtration centrifuge tube. Filtered solutions are allowed to cool in the Craig tube, inducing crystallization. The Craig stopper is placed in the tube neck and the whole apparatus is inverted into a test or centrifuge tube. Centrifuging forms a mat of crystals between the stopper and the walls of the Craig tube, and draws away excess solvent. Further washing and crystallization steps are possible. Two are required to balance in a centrifuge.

Kontes Article No.	Tube Capacity (mL)	Approx. Height (mm)	Tube O.D. (mm)	Case Qty.	Case Price
283550-0004	4	80	14	1	23.09
283550-0007	7	100	14	1	23.75



283550

Recrystallization, Craig

The Craig stopper is placed in the tube neck and the whole apparatus is inverted into a test or centrifuge tube. Centrifuging forms a mat of crystals between the stopper and the walls of the Craig tube, and draws away excess solvent. Sold in sets.

Kontes Article No.	Cap. (mL)	Case Qty.	Case Price
747330-0002	1	1	18.29
747330-0003	2	1	19.16
Component Parts			
747332-0001	Tube, 1 mL	1	8.88
747332-0002	Tube, 2 mL	1	8.88
747331-0001	Plug, Glass, 1 & 2 mL	1	7.96
Accessory Part			
747331-0631	Plug, PTFE, 1 & 2 mL	1	9.12



747330



Accessory
747331
PTFE Plug



898250



46350



898500

Test, Graduated

KIMAX tube with a reinforced bead top. Scale is permanent brown stain.

Kimble Article No.	Cap. (mL)	Interval Grad. (mL)	Sub-division (mL)	±Tol. (mL)	Approx. O.D. x Length (mm)	Case Qty.	Case Price
46350-10	10	0.5 to 10	0.1	0.20	16 x 125	1	36.84

Test, Graduated

Plain top tube with a beaded rim. For general laboratory use.

Kontes Article No.	Cap. (mL)	Graduations x Subdiv. (mL)	Approx. O.D. x Length (mm)	Case Qty.	Case Price
898250-0005	5	0-5 x 0.1	13 x 90	1	21.02
898250-0025	25	0-25 x 0.5	19 x 170	1	24.04

Test, Graduated, with Flat Head $ Stopper

Graduated round bottom tube with a solid flat head $ stopper. Replacement stoppers are 5100109, 5100113 and 5100116.

Kontes Article No.	Cap. (mL)	$ Joint	Graduations x Subdiv. (mL)	Approx. O.D. x Length (mm)	Case Qty.	Case Price
898500-0005	5	9	0-5 x 0.1	13 x 98	1	36.52
898500-0010	10	13	0-10 x 0.2	16 x 126	1	38.64
898500-0025	25	16	0-25 x 0.5	19 x 177	1	42.45



Safety Program - *Play it safe in the lab.*

Our Safety Program discusses the ten basic safety rules of handling glassware as well as the technical properties and physics of glass. Available as a DVD.

Kimble Article No.	Format	Case Qty.	Case Price
99991D-99	DVD	1	23.99

See more safety products in the *SAFETYWARE* section.

Test, Plain

KIMAX-51 tube made from N-51A borosilicate glass tubing with a sturdy lip and uniform wall thickness for maximum heat transfer and chemical resistance. Without a marking spot.

Kimble Article No.	Approx. O.D. x Length (mm)	Overflow Cap. (mL)	Shelf-Pack Qty.	Case Qty.	Case Price
45050-19150	19 x 150	30	72	576	314.06
45050-25150	25 x 150	55	72	288	262.72
45050-25200	25 x 200	75	24	192	195.28



45050

Test, with Marking Spot

KIMAX test tube made from KG-33 glass tubing with a sturdy lip and uniform wall thickness for maximum heat transfer and chemical resistance. Durable white ceramic enamel marking spot on each tube. Designed from ASTM Specification E982, Type I requirements.

Kimble Article No.	Approx. O.D. x Length (mm)	Overflow Cap. (mL)	Shelf-Pack Qty.	Case Qty.	Case Price
45042-1075	10 x 75	4	72	720	279.33
45042-1275	12 x 75	6	72	720	279.33
45042-13100	13 x 100	10	72	720	309.53
45042-15125	15 x 125	16	72	720	400.13
45042-16150	16 x 150	24	72	576	338.22
45042-18150	18 x 150	28	72	576	410.69
45042-20150	20 x 150	36	72	576	465.05
45042-25150	25 x 150	55	72	288	368.42
45042-25200	25 x 200	75	24	192	281.85

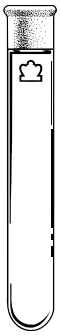


45042

Test, with ⅋ Joint

Round bottom tube with an appropriate ⅋ outer joint.

Kontes Article No.	Approx. Cap. (mL)	⅋ Joint	Approx. O.D. x Length (mm)	Case Qty.	Case Price
897900-0005	5	12/18	14 x 98	1	18.64
897900-0010	10	14/20	17 x 100	1	20.23
897900-0025	25	19/22	22 x 142	1	21.02
897900-0050	50	24/25	25 x 175	1	23.24
422542-0000	50	24/40	25 x 178	1	23.64
897900-0100	100	29/26	32 x 226	1	27.07
926252-0021	100	29/42	35 x 230	1	29.61
926252-0022	200	34/45	40 x 260	1	37.19
926252-0023	300	40/50	45 x 340	1	47.23
926252-0024	350	45/50	50 x 295	1	55.45
926252-0025	500	50/50	55 x 325	1	61.21
926252-0026	800	55/50	60 x 405	1	67.54
926252-0027	1200	71/60	75 x 395	1	99.17



897900
422542
926252

Test, Glass-Stoppered, with Marking Spot

KIMAX test tube made from KG-33 glass tubing with a top finish to receive a ⅋ glass stopper, and with uniform wall thickness for maximum service. Durable white ceramic enamel marking spot on each tube. Designed from ASTM Specification E982, Type III requirements. **Replacement stopper is 41900R.**

Kimble Article No.	Approx. O.D. x Length (mm)	Capacity to Neck (mL)	⅋ Stopper Size	Shelf-Pack Qty.	Case Qty.	Case Price
45100-13100	13 x 100	7	9	-	6	135.83
45100-16150	16 x 150	18	13	6	24	549.85
45100-19150	19 x 150	26	13	6	24	489.71
45100-25200	25 x 200	65	19	6	24	510.09

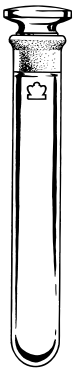


45100

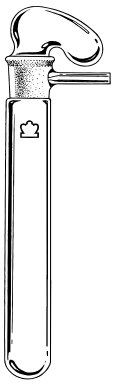
Test, with Flat Head ⅋ Stopper

Round bottom tube with a solid flat head ⅋ stopper. Replacement stoppers are 5100109, 5100113 and 5100116.

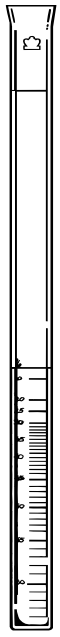
Kontes Article No.	Approx. Cap. (mL)	⅋ Stopper Size	Approx. O.D. x Height Below Joint (mm)	Case Qty.	Case Price
898000-0005	5	9	13 x 80	1	21.02
898000-0010	10	13	16 x 100	1	23.24
898000-0025	25	16	19 x 150	1	24.04



898000



899250



899400

Thunberg

Thunberg tube has a ⅋ hollow stopper with a hole and a side tube. The stopper can be rotated to produce a valve action. When the tube is tilted, the contents of the 2 mL size reservoir can be emptied into the main tube.

Kontes Article No.	⅋ Joint	Approx. O.D. x Length w/o Stopper (mm)	Side Tube Approx. O.D. x Length (mm)	Case Qty.	Case Price
899250-0000	19/22	22 x 150	6.4 x 30	1	78.84

Williams Alcohol

Williams tube for the determination of alcohol percentage by volume. Specific procedure is detailed in the Official Methods of Analysis of the Association of Official Analytical Chemists. Ref: AOAC Methods (1980) page 149. Top is flared for a size 00 rubber stopper.

Kontes Article No.	Approx. O.D. x Overall Length (mm)	Case Qty.	Case Price
899400-0000	12 x 215	1	38.36

Viscometer Tube, Cannon-Fenske, Uncalibrated, Serialized

KIMAX tube designed from ASTM Specification D446. Permanently marked with an individual serial number. For use in obtaining kinematic viscosities of transparent liquids (ASTM Method of Test D445). Viscosity ranges shown below are for an efflux time greater than 200 seconds, except for size 25 where minimum time should be greater than 250 seconds. Lines and legend are printed black. Tubes have **not** been calibrated for constant value and must be before use. Calibration against a standard liquid of known viscosity or against a second viscometer with a known constant must be made.

Kimble Article No.	Size No.	Constant (c) Approx.	Kinematic Centistokes	Case Qty.	Case Price
46460-50	50	0.004	0.8 to 4	1	165.66
46460-100	100	0.015	3 to 15	1	165.66
46460-150	150	0.035	7 to 35	1	165.66
46460-200	200	0.1	20 to 100	1	165.66
46460-300	300	0.25	50 to 250	1	165.66
46460-350	350	0.5	100 to 500	1	165.66
46460-400	400	1.2	240 to 1200	1	165.66



46460



46463

Viscosity, Varnish (Bubble Tube)

Flat-bottomed. With lines at 27 mm, 100 mm and 108 mm from the outside bottom. For rough control work where bubble comparison is made to limit samples of known viscosity, reference ASTM D1545. Lines are durable white ceramic enamel.

Kimble Article No.	Approx. I.D. (mm)	Length (mm)	Shelf-Pack Qty.	Case Qty.	Case Price
46463-1075	10.75	114	36	144	275.04

Precision Bore Glass

We manufacture a wide variety of precision bore tubing. Fabrication in special configurations to tolerances as small as ±0.0001" have been attained to achieve customer engineering requirements. Commonly formed shapes include taper tubes, fluted columns, triangular, square, and rectangular shapes, and threaded components. Prices are quoted upon request. For more information, call Customer Service toll-free at 888-546-2531.



Tubing, Amber Latex Rubber

Seamless, translucent, flexible, smooth-walled tubing is autoclavable. Provides excellent gripping power to connectors.

Kontes Article No.	Bore x O.D. x Wall Thickness (in.)	Case Qty.	Case Price
869770-0014	1/4 x 5/8 x 3/16	10 Ft.	44.58

Tubing, General Purpose Silicone Rubber

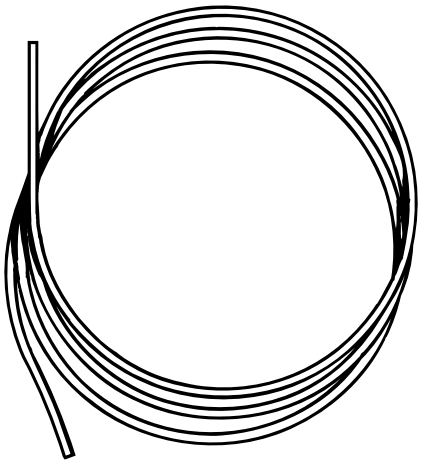
Seamless, flexible, smooth-walled, red tubing is autoclavable. Tubing is also non-absorbent, sulfur-free, odorless and highly resistant to heat, cold, and chemical attack. Usable at temperatures from -73° to +260°C. Not recommended for use with concentrated acids, bromine, carbon tetrachloride, butanol or toluene.

Kontes Article No.	Bore x O.D. x Wall Thickness (in.)	Case Qty.	Case Price
869780-0014	1/4 x 1/2 x 1/8	10 Ft.	67.46

Tubing, Rubber Vacuum

A cloth-impression tubing of semi-pure gum. Tubing is flexible and has an extra heavy wall to prevent collapse.

Kontes Article No.	Bore x O.D. x Wall Thickness (in.)	Case Qty.	Case Price
869790-0014	1/4 x 5/8 x 3/16	10 Ft.	80.03
869790-0012	1/2 x 1 1/8 x 5/16	10 Ft.	206.35



869770
869780
869790

NO-OX® Tubing cuts regassing rates to negligible levels.

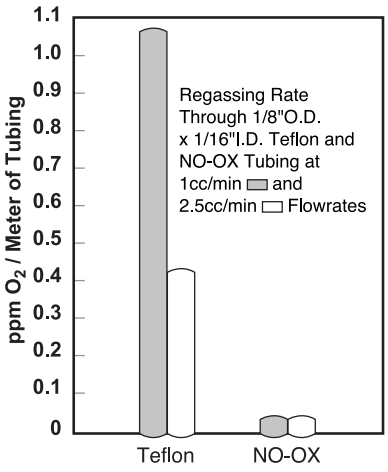


Figure 1

NO-OX's double wall maintains PTFE's inertness without its gas permeability

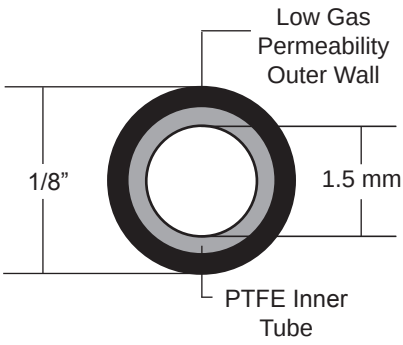


Figure 2

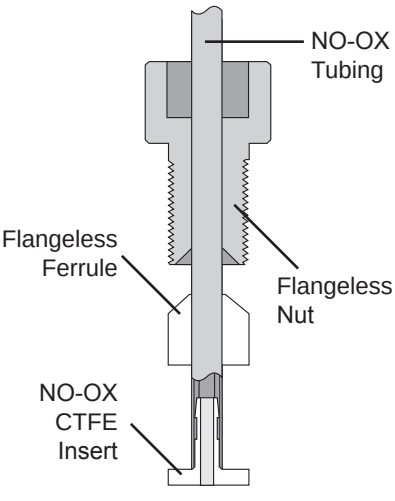


Figure 3

NO-OX® Tubing

Even if you thoroughly degas your mobile phase by helium sparging, vacuum filtration, sonication, or in-line vacuum degassing, the mobile phase will not stay degassed if PTFE tubing is used to deliver it to the pump. That's because PTFE is gas permeable and allows ambient gases, such as oxygen, to diffuse through the tubing wall and into the mobile phase. The amount of ambient gases that enter the mobile phase depends on the tubing dimensions and mobile phase flowrate, but no matter how well you have degassed, some oxygen will re-enter the mobile phase on its way to the pump, possibly detracting from system performance.

NO-OX Tubing solves this problem with a unique double-wall design that eliminates regassing. The chemically inert inner FEP PTFE tube carries the mobile phases. The non-wetted outer wall is made from a translucent, flexible polymer with extremely low gas permeability. NO-OX cuts regassing rates to negligible levels, while preserving PTFE's excellent chemical resistance, transparency and handling properties.

Flexible NO-OX Tubing bends easily to fit your system's layout and cuts easily with a razor blade or plastic tubing cutter. The translucent wall lets you see the tubing's interior for fast, simple troubleshooting. NO-OX fitting connect in seconds. Simply slide the flangeless nut and ferrule over the tubing, push NO-OX insert into the tubing end, and connect finer-tight into any flat bottom 1/4-28 threaded port.

Kontes Article No.	Description	Case Qty.	Case Price
869800-1305	NO-OX Tubing, 1/8" O.D. x 1.5 mm I.D. 5 ft.	5 Ft.	38.65
869801-1006	NO-OX Insert, CTFE	10	47.33

Tubing, FEP PTFE, 1/16" x 10 ft.

This tubing is made for easy connection to Flex-Columns.

Kontes Article No.	Description	Material	Case Qty.	Case Price
420823-0116	Tubing, 1/16" OD x 0.030" ID	PTFE	10 Ft.	18.91
420823-0018	Tubing, 1/8" OD x 0.063" ID	PTFE	10 Ft.	29.28
420823-0014	Tubing, 1/4" OD x 0.156" ID	PTFE	10 Ft.	70.09

Tubing, with Luer Lock Adapter

This tubing is supplied with an integral male luer lock for easy connection to Flex-Columns.

Kontes Article No.	Description	Material	Case Qty.	Case Price
H90669-0005	Tubing, 1/16" OD	Tubing - PTFE Luer Lock - CTFE	5 Ft.	142.14

See 953921, 420821, H90669, H88800 and 420817 for a complete listing of chromatography adapters, fittings, valves and tubing.

NO-OX is a registered trademark of RHEODYNE, LLC.

100 Watt Ultrasonic Homogenizer, with 1/8" Microprobe

- Thumb Activated
- Digital LCD Display
- 100 Watt Generator
- Load Monitoring
- Automatic Tuning
- Compact & Portable
- Economical Price

The thumb activated Microson Sonicator incorporates revolutionary advances in circuitry design, power delivery and load monitoring in a compact, portable, economical ultrasonic homogenizer.

Equipped with a digital wattmeter and LCD display, the Microson accurately monitors the power delivered to the probe tip for greater intensity when processing difficult cells or other demanding applications. Automatic tuning and load monitoring improve efficiencies by maintaining the probe's frequency and amplitude under varying load conditions, such as changes in temperature, viscosity and sample volume.

The Microson has proven to be a powerful and versatile tool for processing small sample volumes from 200 µL to 100 mL. It is used in many analytical, biological and quality control labs.

The Microson's compact, portable design makes it ideal for use in mobile labs. Simple controls and lightweight, hand-held probes provide easy operation. An optional footswitch allows manual pulsing and hands-free operation.

881300-0100



UL listed and CE certified.

Kontes Article No.	Description	Case Qty.	Case Price
881300-0100	100 Watt Ultrasonic Homogenizer with 1/8" Microprobe (#881350-0018) and Thumb-Activated Switch	1	3,089.26
Accessories			
881365-0010	Cooling Cell, Jacketed, 0.5-10 mL	1	151.27
881360-0515	Rosett® Cell, 5-15 mL	1	119.40
881338-0000	Jack Stand	1	333.69

600 Watt Ultrasonic Processor — *Sonicator 4000*

The new Sonicator 4000 is the world's most advanced ultrasonic processor. A variety of new features including digital processing and touch screen control make this the most intuitive and easy to use system available. Output amplitude is controlled from 0-100% giving a greater degree of resolution and the ability to pinpoint the amplitude needed to effectively process your sample.

The Sonicator tracks frequency changes in the convertor / tip assembly caused by load and temperature changes and maintains electrical efficiency at all times. This results in more efficient operation and consistent, reproducible results. Self diagnostics and help screens make operation simple and trouble-free. UL listed and CE Certified.

*The **Sonicator 4000** includes the following components:*

Generator	1/2" replaceable tip horn	Wrench Set
Converter	Power Cable	Owner's Manual
Converter Cable		

881300-0600



Specifications:

Maximum Power Output . . . .600 Watts
Operating Frequency . . . . . .20 kHz
Input . . . . . .100 - 240V, 50 - 60Hz
Programmability . . . . . .10 memories plus sequencing
Programmable Timer . . . . . .1 second to 72 hours
Adjustable Pulse On/Off. . . . .1 second to 24 hours
Dimensions . . . . . .11" wide x 20" long x 5.5" high

Kontes Article No.	Description	Case Qty.	Case Price
881300-0600	600 Watt Ultrasonic Processor with 1/2" Replaceable Tip Horn	1	5,609.00



881365-0010



881365-0025



881360



881312

Cell, Cooling

KONTES jacketed cooling cells are designed for multipurpose sonication of samples while maintaining a controlled internal temperature.

Kontes Article No.	Capacity (mL)	Case Qty.	Case Price
881365-0010	10 mL w/ jacket	1	151.27
881365-0025	25 mL w/ jacket	1	175.00

Cell, Rosett

KONTES Rosett cells are designed to circulate the liquid beneath the probe or microtip through the 3 cooling arms utilizing the force generated by the ultrasonic energy. This circulation allows for homogenous treatment of the medium. These cells are available as jacketed for controlled external liquid cooling or unjacketed for air cooling.

Kontes Article No.	Capacity (mL)	Case Qty.	Case Price
881360-0515	5-15	1	119.40
881360-0175	175-500	1	198.74
881360-2175	175-500 w/ jacket	1	421.19

Acoustic Enclosure, Sonabox

Open vessel sonication may produce cavitation noise levels which might be disturbing. The ultrasonic generator and horn operate at a frequency above that of normal hearing. However, the sound produced by harmonics emanating from the vessel walls and the liquid surface can produce noise levels near or above NIOSH levels requiring hearing protection. The Sonabox Acoustic Enclosure reduces noise levels down to safe, comfortable levels.

Processing with the Sonabox Enclosure is simplified by the large, clear acrylic door and integral support rod. Samples may be clamped to the rod or placed on a small lab jack to hold the sample in position. The box is large enough for use with Microtip probes and has legs for inverted use with cup horns. Special features include: easy conversion for use with probes or cup horns, precut ports allow lines for coolant or product circulation, interior is waterproof, chemically resistant and easily cleaned, large interior work space includes removable support rod.

Kontes Article No.	**Inside Dimensions of** Sonabox, Inches (cm)	**Case** Qty.	**Case** Price
881312-0000	9-1/4"W x 10-3/4"D x 19-3/4"H (23.5W x 27.3D x 50.2H)	1	1,048.53

Selecting the Appropriate Horns and Probes

Titanium Disruptor Horns and probes radiate and focus energy into the liquid being processed. Horn and probe sizes are determined by the volume to be processed and the intensity desired. As tip diameter increases, intensity or amplitude decreases. Volumes less than 10 mL require the use of Microtip probes.



881350-0018

Microprobes, for 100 Watt Microson Sonicator

Microprobes are extremely high amplitude tips specifically designed for small volume processing below 50 mL.

Kontes Article No.	Processing Volume (mL)	Tip Dia., Inches (mm)	Type / Intensity	Amplitude* (µm)	Length, Inches (mm)	Case Qty.	Case Price
881350-0018	0.5 - 15	1/8" (3.2)	Stepped / Very High	180++	5" (127)	1	269.91
881350-0332	0.2 - 5	3/32" (2.4)	Stepped. / Very High	210++	5-5/8" (143)	1	342.58

*Double (peak-to-peak) amplitude of the radiating face of the tip in micrometers on Sonicator Processors operating at maximum output control setting 5.

++Double (peak-to-peak) amplitude of the radiating face of the tip in micrometers on Microson operating at output control setting 20.

Tip, Flat, Replacement for Tapped Horns

Kontes Article No.	Dia. Inches (mm)	Case Qty.	Case Price
881342-0012	1/2" (12.7)	1	55.61



881342

Ultrasonic Applications

BIOLOGICAL

Understanding the sophisticated chemical and physical properties of the cell helps in dealing with problems faced in medicine, agriculture, and industry. Sonication enhances our understanding by taking research subcellular. It helps in the lysing of bacteria, viruses, yeasts and tissue cells for the extraction of protein, DNA, RNA, enzymes and other cellular components.

CHEMICAL

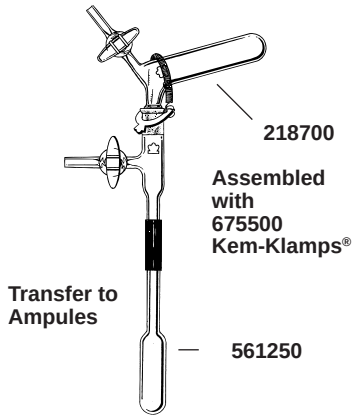
Acoustic cavitation accelerates both physical and chemical reactions, creating new fields of research. Major advances in sonochemistry include chemical synthesis of catalysts and new alloys, catalyzing organometallic reactions, microencapsulation of protein and hydrolyzing esters. The use of sonication provides greater yields, increases overall efficiency and saves energy.

ENVIRONMENTAL

Sonication is used by environmental testing labs to process soil and sediment samples according to EPA Method SW846-3550 in lieu of soxhlet extraction methods. Sonication takes just 8-10 minutes per sample versus 4-18 hours by soxhlet extraction. It also uses half the solvent and improves contaminant yields. Single Horn and Dual Horn system are available. A Dual Horn system is advisable if the sample load is high. The Dual Horn allows you to process two samples simultaneously, saving time and money.

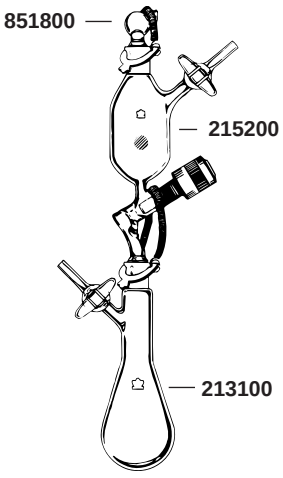
PHARMACEUTICAL

Ultrasonic homogenizers have been used for years in analytical, quality control, and R&D labs to perform numerous functions from mixing and degassing of analytical samples, to cracking open of tablets for dissolution tests. Liposomes and emulsions are easily formed by sonication for microencapsulation purposes in the production of creams and lotions.



TRANSFER OF SOLIDS

The transfer of a solid into seal-off ampuls or other types of containers is easily accomplished by using the 211400 Transfer Adapter. The ampul or other receiver is first attached to the capped adapter, and several purge cycles are performed. It is then attached to the fritted funnel or AIRLESS-WARE flask under brisk nitrogen flush, and the solids are poured into it. If the solid is not free-flowing, it may be first necessary to break it up, using a long spatula while a brisk flow of nitrogen is maintained out of the AIRLESS-WARE flask or fritted funnel.



Addition of Liquids

AIRLESS-WARE® Assemblies

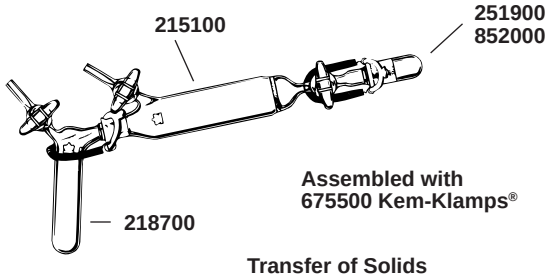
AIRLESS-WARE® is a family of ground-jointed glassware designed for the manipulation of air-sensitive compounds on a medium to large scale, using an inert gas to exclude air or moisture vapors.

The essential feature of most of the AIRLESS-WARE apparatus is a sidearm fitted with a stopcock. Through this sidearm the apparatus is evacuated to eliminate air and an inert gas is introduced. A high vacuum is not necessary because the purge cycle is repeated several times. For example, suppose an initial evacuation of 2 mm pressure; after the second pumping and filling, the pressure of residual air is 2 x 2/760 mm., and after the third cycle it is 2 x $(2/760)^2$ mm, or approximately 10^{-5} mm of residual air.

Due to the frequency with which these purging cycles are performed, it is useful to have a 216060 manifold equipped with a series of vacuum valves. Attached to this manifold is a source of purified nitrogen or argon and a source of vacuum. The nitrogen or argon is a pre-purified grade or a standard grade purified by the 655950 Oxygen Removal Tower followed by the 655900 Drying Tower. A 652250 Oil Bubbler or 216100 Pressure Release Valve on the nitrogen line serves as an approximate flow indicator. If the diaphragm regulator on the nitrogen tank is unreliable, a 216150 Gas Pressure Regulator is necessary on the nitrogen line.

The source of vacuum should be a mechanical vacuum pump. The pump should be protected by a dry ice-cooled or liquid nitrogen-cooled trap. A 926050 size 25 vacuum trap would serve this purpose. This trap must have a relatively large volume and be easily removed from the system since considerable quantities of condensables are accumulated at this point. For moderately air sensitive materials, the solvent may be purged with an inert gas stream prior to use. More sensitive compounds require solvents which are freshly distilled under an inert atmosphere, for which a 547600 Solvent Purification Still can be used. Two boiling flasks of appropriate capacity are ideal.

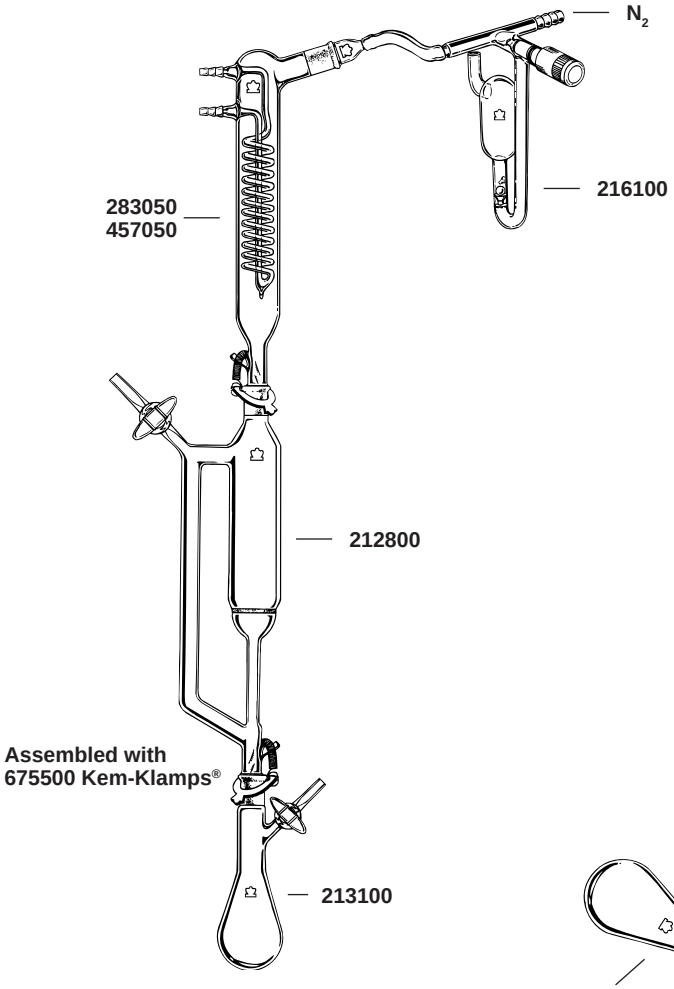
AIRLESS-WARE is compatible with BANTAM-WARE® and the 925100 Airless Vacuum Rack. This unit provides great versatility in the manipulation of air-sensitive compounds. In general, AIRLESS-WARE provides much better exclusion of air than can be achieved with inert atmosphere enclosures.



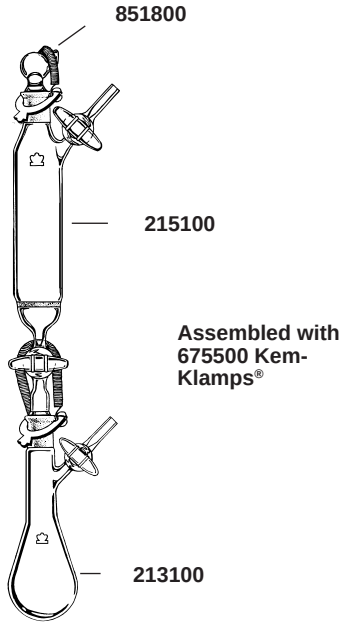
Transfer of Solids

ADDITION OF LIQUIDS

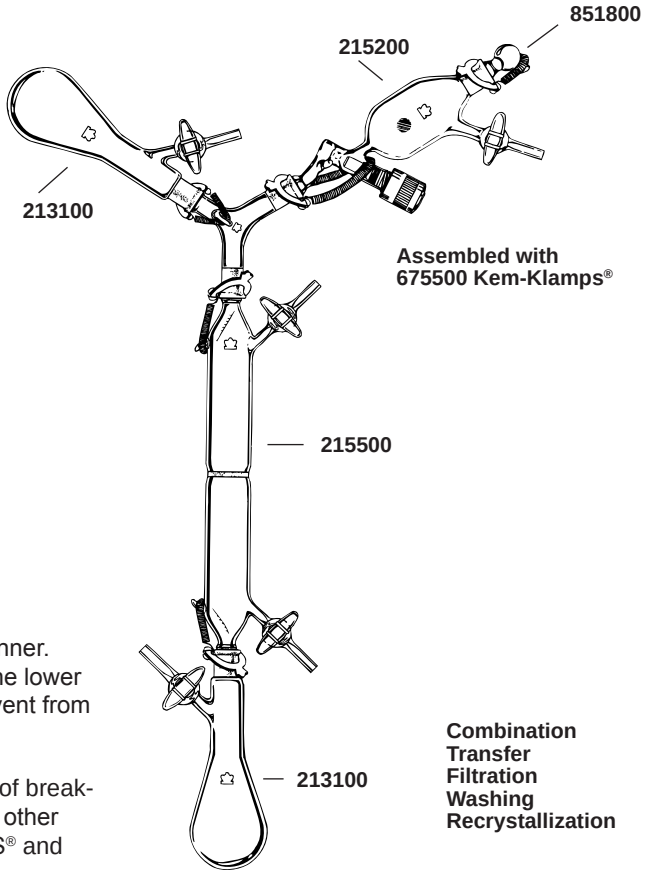
For the addition of an air-free solvent to a sensitive solid contained in an AIRLESS-WARE tube, the dropping funnel must first be purged with a cap in place over the bottom standard taper joint. This ensures that the bore of the lower stopcock and the dead space inside the bottom joint are air-free. After the purge the oxygen-free solvent is either distilled directly into the dropping funnel or transferred to it under a blanket of nitrogen. The connection between the dropping funnel and AIRLESS-WARE flask is made rapidly, while a brisk flow of nitrogen is maintained through the latter. If possible, the connection is followed by a quick purge cycle.



Extraction of Solids



Filtration



Combination
Transfer
Filtration
Washing
Recrystallization

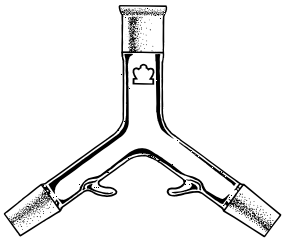
EXTRACTION AND FILTRATION

Extraction and Filtration of Solids are shown in the above illustrations. Several purge cycles must be performed prior to the actual operation. To maintain an inert atmosphere and avoid pressure build-up, a nitrogen line and pressure release valve are attached to the extraction apparatus.

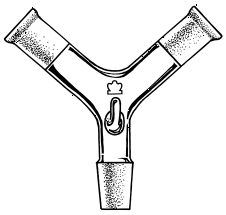
FILTRATION / WASHING / RECRYSTALLIZATION

A precipitate may be collected and washed in the following manner. Suction filtration is accomplished by the partial evacuation of the lower flask. The precipitate is then washed by the introduction of solvent from the dropping funnel.

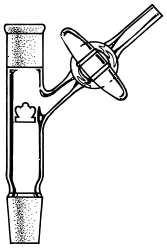
When a complex assembly is attached to a lattice, the chance of breakage is reduced by clamping one of the central pieces firmly. All other pieces are held together at the joints by 675500 KEM-KLAMPS® and further steadied by loose clamping.



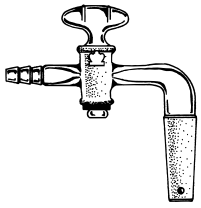
211050



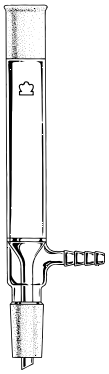
211100



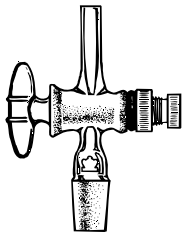
211200



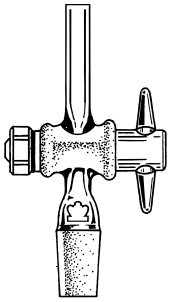
251200



211230



211300



211330

Adapter, Connecting, AIRLESS-WARE®

Three-arm design for the assembly of three vessels. Top is an ⅋ outer joint; others are ⅋ inner joints.

Kontes Article No.	⅋ Joint	Approx. Overall Height x Width (mm)	Case Qty.	Case Price
211050-1420	14/20	60 x 90	1	57.17
211050-2440	24/40	120 x 150	1	64.34

Adapter, Connecting, AIRLESS-WARE®

Three-arm design for the assembly of three vessels. Bottom is an ⅋ inner joint; tops are ⅋ outer joints.

Kontes Article No.	⅋ Joint	Approx. Overall Height x Width (mm)	Case Qty.	Case Price
211100-1420	14/20	70 x 80	1	60.68
211100-2440	24/40	120 x 145	1	65.12

Adapter, Connecting, Glass Plug, AIRLESS-WARE®

Converts standard flasks, funnels, etc. to airless applications. Stopcock has an 801001 glass plug and the patented 809000 pressure/vacuum retainer.

Kontes Article No.	⅋ Joint	Approx. Overall Height x Width (mm)	Case Qty.	Case Price
211200-1420	14/20	115 x 80	1	78.95
211200-2440	24/40	155 x 80	1	82.21

Adapter, Drying, Micro, Glass Plug

Unique tip design with a sealed bottom has two small orifices on the side to minimize the loss of vacuum-dried material. Can also be used as a gas inlet or outlet adapter. Stopcock has a 305751 glass plug.

Kontes Article No.	⅋ Joint	Hose Connection	Case Qty.	Case Price
251200-0000	14/20	#1	1	70.15

Adapter, Filling, AIRLESS-WARE®

Designed to complement the 547600 solvent repurifier and to facilitate product removal from the storage area. This adapter will provide clearance from the boiling flask and attaches to a 213210 solvent storage flask. Hose connection allows access to vacuum source or inert gas.

Kontes Article No.	⅋ Joint	Hose Connection	Approx. Overall Height x Width (mm)	Case Qty.	Case Price
211230-2440	24/40	#2	250 x 54	1	55.20

Adapter, Inlet, Glass Plug, AIRLESS-WARE®

Gas inlet type with inner ⅋ joint. Supplied with an 801001 glass plug and the patented 809000 pressure/vacuum retainer. Used with sleeved stopper 774260 or 882311.

Kontes Article No.	⅋ Joint	Approx. Overall Height x Width (mm)	Case Qty.	Case Price
211300-1420	14/20	98 x 60	1	52.08
211300-2440	24/40	135 x 60	1	53.64

Adapter, Inlet, PTFE Plug, AIRLESS-WARE®

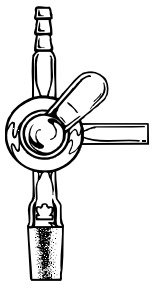
Gas inlet type with an outer ⅋ joint. Supplied with an 801001 glass plug and the patented 809000 pressure/vacuum retainer. Used with sleeved stopper 774260 or 882311.

Kontes Article No.	⅋ Joint	Approx. Overall Height x Width (mm)	Case Qty.	Case Price
211330-1420	14/20	98 x 60	1	52.08
211330-1922	19/22	110 x 60	1	54.14
211330-2440	24/40	135 x 60	1	55.07

Adapter, Inlet, Balloon Type, Glass Plug, AIRLESS-WARE®

Gas balloon type for protective storage in jointed vessels. One arm of the T-bore stopcock is connected to the inert gas source. The arm with a hose connector is connected to a balloon. Vessels connected to this adapter may be flushed and filled with inert gas. The balloon can be expanded with inert gas for storage at the same time or separately. The stopcock bore is then rotated to connect the balloon to the vessel. The inert gas tubing may be disconnected giving the vessel its own portable inert gas source to balance volume changes caused by sample removal. Supplied without the balloon. Replacement plug is 802001 and the retainer is 809000.

Kontes Article No.	Joint	Hose Connection	Approx.Overall Height x Width (mm)	Case Qty.	Case Price
211250-1420	14/20	#1	115 x 55	1	71.45
211250-2440	24/40	#1	152 x 68	1	75.37

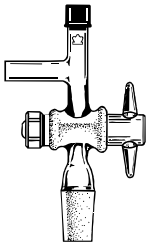


211250

Adapter, Inlet, Septum, PTFE Plug, AIRLESS-WARE®

Gas inlet adapter with a joint. Sidearm has a 2 mm bore 821001 PTFE stopcock with a port for gas introduction and a rubber-stoppered port for syringe retrieval. Supplied complete with one 882311 septum stopper.

Kontes Article No.	Joint	Height Above Joint (mm)	Approx.Overall Height x Width (mm)	Case Qty.	Case Price
211275-1420	14/20	80	100 x 55	1	79.95
211275-2440	24/40	80	120 x 55	1	82.55

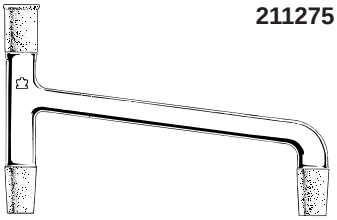


211275

Adapter, Transfer, AIRLESS-WARE®

Transfer adapter used to transfer fluids between two flasks or as a one-piece distillation unit. A variety of flasks or adapters may be connected to this unit to use at reduced pressure or under an inert atmosphere.

Kontes Article No.	Joint	Approx.Overall Height x Width (mm)	Case Qty.	Case Price
211410-2440	24/40	155 x 270	1	65.12

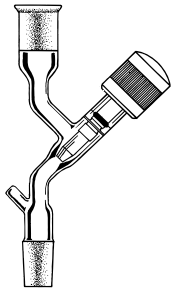


211410

Adapter, Vacuum Valve, PTFE Plug, AIRLESS-WARE®

Vacuum valve adapter for closing joints on Airless-ware® vessels, yet allowing reconnection to funnels, etc., with minimum exposure to air or water vapor. A Kontes PTFE vacuum valve minimizes contamination and maintains vacuum in the micron region. Tip seal of the valve is directed toward a normal storage vessel. Plug is 826601.

Kontes Article No.	Joint	Approx.Overall Height x Width (mm)	Case Qty.	Case Price
211450-1420	14/20	130 x 60	1	113.53
211450-2440	24/40	190 x 60	1	116.79



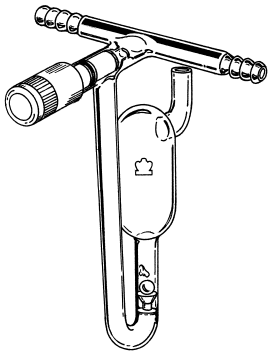
211450

Valve, Pressure Release, AIRLESS-WARE®

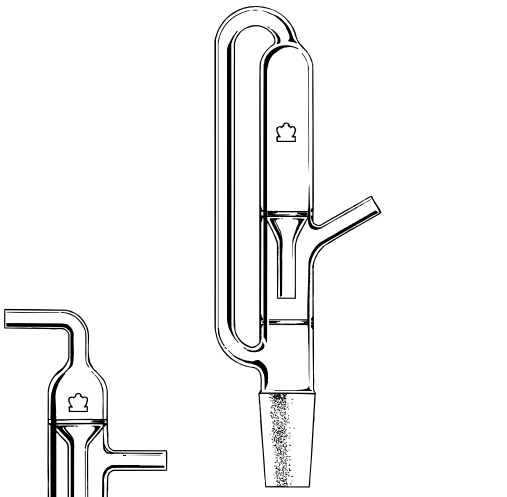
Designed for applications that require evacuated apparatus to be filled with an inert gas to one atmosphere. Uses include the introduction of an inert gas into a vacuum desiccator or nitrogen into Airless-ware® apparatus. A pressure release valve should be placed between the nitrogen source and nitrogen manifold on all Airless-ware manifold installations.

Operation: Three mL of paraffin or silicone oil is added to the bubbler. One arm is connected to the low-pressure gas source, the other to the manifold or Airless-ware equipment. The check valve prevents oil or air from surging into the apparatus.

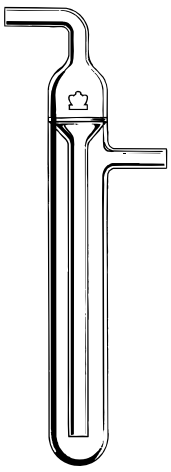
Kontes Article No.	Hose Connectors	Approx. Overall Height x Width x Depth (mm)	Case Qty.	Case Price
216100-0000	#2	130 x 80 x 102	1	152.63



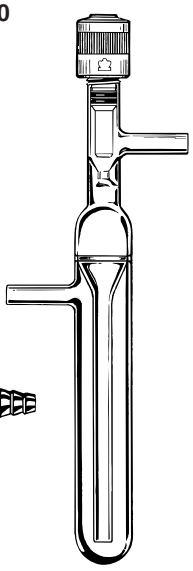
216100



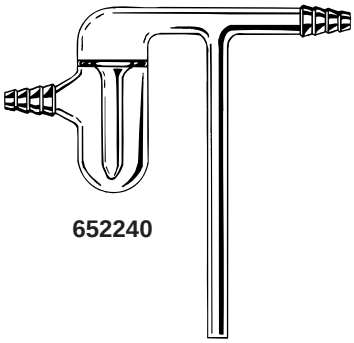
652210



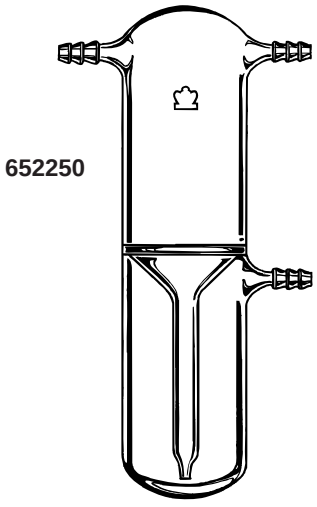
652220



652230



652240



652250

Bubbler, Gas, ⅌ 24/40 Joint

Designed to be used with mineral oil or a similar liquid to monitor gas flow to organic reactions. Unit has a ⅌ ground joint and can be used with single or multi-necked flasks having a similar opening. Approximately 10 mL of oil is required to seal the lower inner tube. The rate of gas flow can then be observed. Tubing connection is 8 mm O.D. The 625215 bubbler has an additional side port for connecting 8 mm O.D. tubing.

Kontes Article No.	⅌ Joint	Body O.D. (mm)	Approx. Overall Height x Width (mm)	Case Qty.	Case Price
652210-0000	24/40	22	205 x 70	1	57.61

Bubbler, Gas

Used with mineral oil to observe gaseous addition to reactions. May be used to vent a reaction mixture to the atmosphere. Tubing connections are 8 mm O.D. and may be used with 179730-0808 or 179920-0808 to join multiple bubblers if necessary.

Kontes Article No.	Body O.D. (mm)	Approx. Overall Height x Width (mm)	Case Qty.	Case Price
652220-0000	25	185 x 80	1	36.01

Bubbler, Gas, with HI-VAC® Valve

Designed with an integral valve for controlling gas flow in reactions or to provide an inert atmosphere when either nitrogen or argon is used. The inner tube is positioned to within 5 mm of the tube bottom. This requires a minimal amount of mineral oil. Valve plug is 826601-0004.

Kontes Article No.	Body O.D. (mm)	Valve Arm O.D. (mm)	Outlet Tube O.D. (mm)	Approx. Overall Height x Width (mm)	Case Qty.	Case Price
652230-0000	25	9	8	225 x 80	1	100.17

Bubbler, Gas

Designed to monitor gas flow to reactions. It can be used with nitrogen or argon to provide an inert atmosphere, or gaseous reagents such as acetylene or ammonia can be added to reactions. Unit may be used with 179700 or 179800 adapters. This provides access to most standard taper systems.

Kontes Article No.	Stem O.D. (mm)	Hose Connections	Approx. Overall Height x Width (mm)	Case Qty.	Case Price
652240-0000	8	#2	135 x 135	1	42.94

Bubbler, Gas

For gas washing, bubble counting, etc. Extra opening provides a safety release in the event of overpressure.

Kontes Article No.	Hose Connections	Approx. Overall Height x Width (mm)	Approx. Capacity (mL)	Case Qty.	Case Price
652250-0000	#2	190 x 51	100	1	88.08

Hose Connector Tubing Size Chart

Hose Connector Size	Fits Flexible Tubing I.D.
1	1/4"
2	3/8"
3	1/2"
4	3/4"

Clamp, Ⓢ Polyacetal, Standard Taper

An easy to use Ⓢ positive closure clamp made of tough, color coded plastic. Clamp will not scratch glass and can be autoclaved to 200°C. This clamp has good chemical resistance at a lower cost than metal clips.

Kontes Article No.	Fits Ⓢ Joint Sizes	Color Coded	Case Qty.	Case Price
675300-0010	10/18, 10/30	Aqua	12	34.70
675300-0014	14/20, 14/35	Yellow	12	37.72
675300-0019	19/22, 19/38	Blue	12	38.46
675300-0024	24/40, 24/25	Green	12	39.53
675300-0029	29/42, 29/26	Red	12	40.77
675300-0034	34/45, 34/28	Orange	12	43.52
675300-0040	40/35, 40/50	Gold	12	45.29
675300-0045	45/50	Brown	12	51.63

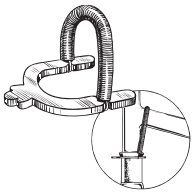


675300

Clamp, Ⓢ KEM-KLAMP®, Standard Taper

Yoke-type designed to maintain tension on assembled Ⓢ apparatus. This clamp permits quick set-ups without using fragile glass hooks. The spring extends over hose connectors or adapters as shown. Fabricated from stainless steel, this clamp is corrosion resistant and unaffected by high temperatures.

Kontes Article No.	Fits Ⓢ Joint Sizes	Case Qty.	Case Price
675500-1420	14/20, 14/35	1	10.11
675500-1922	19/22, 19/38	1	6.13
675500-2440	24/40, 24/25	1	6.54
675500-2942	29/42, 29/26	1	6.69
675500-3445	34/45, 34/28	1	6.98

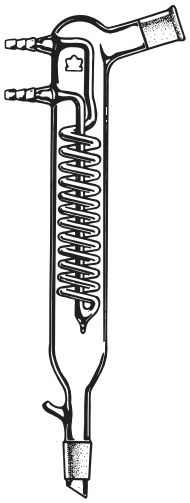


675500

Condenser, Reflux, Coil Type, Ⓢ Joints

Coil-type for greater cooling capacity. Hook above lower Ⓢ joint for use with a 675500 KEM-KLAMP®. 675000 series polyacetal Ⓢ clamps may also be used.

Kontes Article No.	Ⓢ Joints	Hose Connections	Approx. Condensing Area (cm^2)	Approx. Height (mm)	Case Qty.	Case Price
283050-0000	14/20	#1	103	240	1	131.81
457050-0000	24/40	#2	261	370	1	160.50

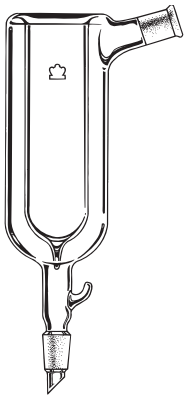


283050
457050

Condenser, Dewar, Ⓢ Joints

For rapid cooling of volatile solvents. Large top opening for easy introduction of coolant mixtures such as solid carbon dioxide/alcohol, dry ice/alcohol, dry ice, or liquid nitrogen. Lower joint will work with 675500 Kem-Klamps® or 675300 polyacetal Ⓢ clamps.

Kontes Article No.	Ⓢ Joints	Approx. Overall Height x Width (mm)	Approx. Coolant Capacity (mL)	Case Qty.	Case Price
283400-0000	14/20	210 x 105	200	1	131.81
457750-2425	24/40	347 x 110	650	1	279.27

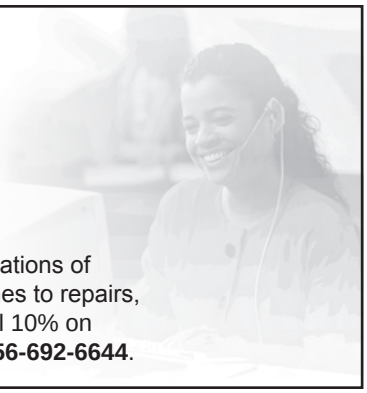


283400
457750

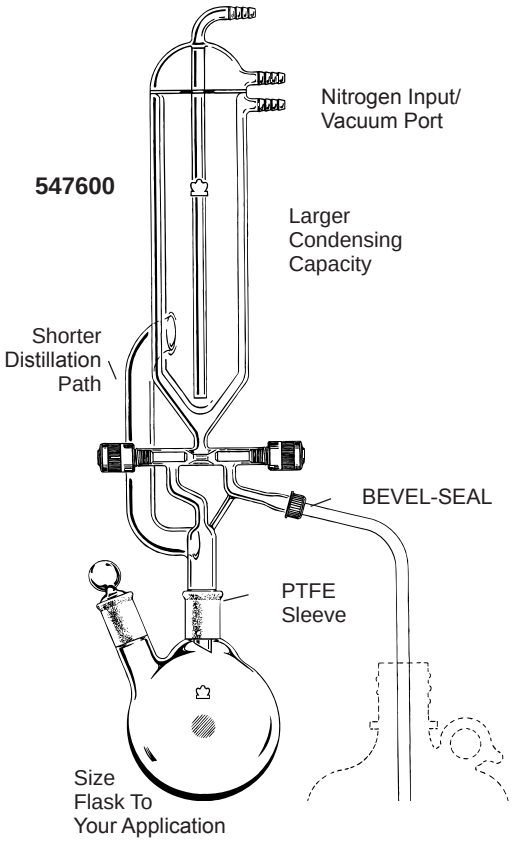


- **Custom Fabrications**
- **Quality Repairs**
- **Modifications of All Kinds**
- **No Order Too Small**
- **Quick Turnaround**

KONTES
custom glass shop
*call toll-free **800-682-6644***
customglass@kimble-chase.com



Contact the **Kontes Custom Glass Shop** at KIMBLE CHASE for modifications of standard products or fabrication of your unique designs. And when it comes to repairs, we can save you up to 75% of the cost of a new item. Save an additional 10% on repairs of Kontes or Kimble Brand products. Fax your requirements to **856-692-6644**.



Distillation Apparatus, Solvent Repurification

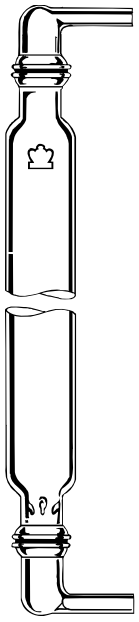
Designed for the distillation, reflux, storage and delivery of solvents. Two grease-free 4 mm lower PTFE valves with 826601-0004 plugs permit the distilled solvent to be returned to the flask, taken-off or stored in the graduated receiver. Access port has 1/2”-20 male threads to accept a PTFE-faced silicone septum with a polypropylene open top cap. Hose connections are #2.

Kontes Article No.	Capacity (mL)	Graduations x Subdiv. (mL)	Lower ⅀ Joint	Approx. Overall Height x Width (mm)	Case Qty.	Case Price
547600-0125	Head Only 125	30 to 125 x 5	24/40	600 x 200	1	354.94
547600-0500	Head Only 500	50 to 500 x 25	24/40	710 x 200	1	471.08
Replacement parts						
774161-0013	PTFE-Faced Silicone Septum, 13 mm, Pkg./48 (1 Supplied)				48	34.65
179802-0021	Polypropylene Open Top Cap, 1/2”-20 Thread, Pkg./6 (1 Supplied)				6	28.30
Accessories						
605020-1024	Two-Neck Boiling Flask, ⅀ 24/40, 500 mL				1	62.42
605020-1424	Two-Neck Boiling Flask, ⅀ 24/40, 1000 mL				1	76.63
605020-1824	Two-Neck Boiling Flask, ⅀ 24/40, 2000 mL				1	97.87
294000-0050	Single-Neck Take-Off Flask, ⅀ 14/20, 50 mL				1	18.32
294000-0100	Single-Neck Take-Off Flask, ⅀ 14/20, 100 mL				1	18.32
294000-0250	Single-Neck Take-Off Flask, ⅀ 14/20, 250 mL				1	22.01
179850-2314	Vacuum Take-Off Adapter, ⅀ 14/20				1	67.21
675500-1420	Kem-Klamp®, ⅀ 14/20				1	10.11
851000-2440	Pennyhead Stopper, ⅀ 24/40				1	26.63
675300-0024	Polyacetal Clamp, Fits ⅀ 24/40 and 24/25 Joints, Pkg./12				12	39.53

Drying Tower, AIRLESS-WARE®

Desiccant may be easily added and removed from the joint on top of the column. Column can be charged with potassium hydroxide or sodium hydroxide to protect mechanical vacuum pumps from corrosive acids. Joints are size 25 o-ring connectors. Supplied with two size 124 FKM o-rings.

Kontes Article No.		Column Body O.D. x Height (mm)	Approx. Overall Height (cm)	Case Qty.	Case Price
655910-0000		54 x 845	103.5	1	147.48
Component Parts					
655911-0000	Tower Only			1	101.80
655912-0000	Adapter, Size 25 O-Ring Connector, Pkg./1, (2 Supplied)			1	30.92
Accessories					
675000-0035	Pinch Clamp, Size 35			1	19.36

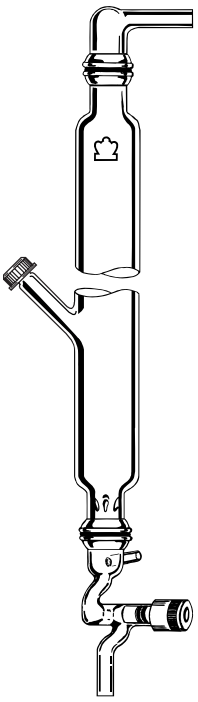


655910

Drying Tower, Oxygen Removal, AIRLESS-WARE®

External heating cord, available as an accessory, maintains elevated operating temperatures to increase the capacity of the catalyst. Catalyst may be regenerated in the tower with a reducing stream of hydrogen at 150°C. Lower adapter allows removal of water collected after regeneration. BASF catalyst and 250°C thermometer are included. HI-VAC® valve is 0-4 mm. Replacement plug is 826501-0004. Replacement thermometer port cap is 410119-1508 and o-ring is 758252-0010. Supplied with two size 124 FKM o-rings.

Kontes Article No.		Column Body O.D. x Height (mm)	Approx. Overall Height (cm)	Case Qty.	Case Price
655960-0000		54 x 845	118.5	1	486.77
Component Parts					
655962-0000	Tower Only, with thermometer port, 15-415			1	105.70
655912-0000	Adapter, Size 25 O-Ring Connector			1	30.92
655961-0000	Valve Adapter, Size 25 O-Ring Connector			1	127.55
655952-0000	BASF Catalyst, Pkg./1 kg			1	220.55
870605-1260	Thermometer 250°C (Not Shown)			1	19.83
675310-0035	Polyacetal Clamp, Pkg./12, 2 Supplied, Lt. Orange			12	62.71
Accessories					
729520-0448	Heating Cord, 8'			1	108.15
675000-0035	Pinch Clamp, Size 35			1	19.36

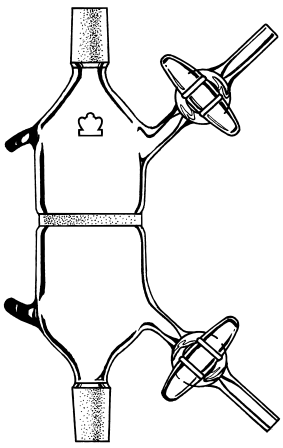


655960

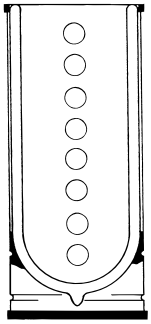
Filter, Double-Ended, AIRLESS-WARE®

Double-ended filter with two sidearm stopcocks allows filtration followed by crystallization and the collection of crystals on the opposite side of the frit. Ⓣ inner joints attach to standard round bottom flasks. Supplied with 801001 glass plugs and patented 809000 pressure/vacuum retainers.

Kontes Article No.	Ⓣ Joints	Capacity **Each End** (mL)	**Frit** Porosity	Pore **Size** (Microns)	Frit **Dia.** (mm)	Approx. **Overall** Height (mm)	**Case** Qty.	**Case** Price
215500-6023	14/20	60	Coarse	40-60	30	165	1	182.70
215500-6044	14/20	60	Medium	10-15	30	165	1	182.70
215500-1523	24/40	150	Coarse	40-60	40	240	1	215.32
215500-1544	24/40	150	Medium	10-15	40	240	1	215.32



215500



611795

Flask, Dewar

Specially constructed dewar is fully jacketed with aluminum. Viewing ports allow a visible inspection of the contents through the strip-silvered glass dewar flask.

Kontes Article No.	I.D. x Depth (mm)	Case Qty.	Case Price
611795-2430	95 x 300	1	294.92



611290

Flask, Dewar, Cylindrical Low-Form

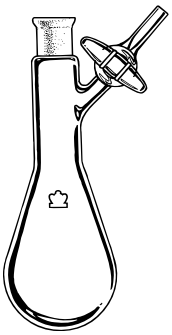
Unique, low-form design provides users with an ideal container for subambient work. Biological applications such as rapid freeze and recovery of tissue/organ specimens are possible. Dewar is solid-silvered.

Configuration allows for agitation in a flask with a magnetic stirrer. Coolant temperatures can range from dry ice/acetone to liquid nitrogen.

These dewar flasks are made of borosilicate glass and come equipped with an aluminum base. Procedures used in the silvering process meet or exceed those of the N.I.S.T. Journal of Research.

Kontes Article No.	Overall **Capacity (mL)**	**Flask (mL)**	Approx. Coolant Capacity **with Round Bottom Flask Inserted (mL)**	Approx. **I.D. x Depth (mm)**	**Case Qty.**	**Case Price**
611290-0150	150	100	100	80 x 35	1	193.13
611290-0350	350	100	200	80 x 75	1	193.13
611290-0500	500	300	250	105 x 80	1	236.20
611290-0850	850	500	450	130 x 75	1	251.86
611290-1500	1500	1000	500	145 x 100	1	351.83
611290-2500	2500	1000	1500	170 x 135	1	793.42

Special dewar flasks are available, for information call 1-888-546-2531.

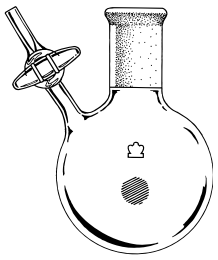


213100

Flask, Reaction / Storage, AIRLESS-WARE®

Improved version of classic Schlenk tube. The modified Kjeldahl shape facilitates heating, stirring and solvent stripping without impairing ease of liquid and solid transfer. Bottom of the flask is shaped to fit spherical heating mantles. Supplied with an 801001-0002 glass plug and the patented 809000-0021 pressure/vacuum retainer.

Kontes Article No.	Capacity (mL)	$ Joint	Approx. Overall Height (mm)	Case Qty.	Case Price
213100-0114	10	14/20	105	1	58.85
213100-0214	25	14/20	120	1	65.91
213100-0514	50	14/20	135	1	69.50
213100-1014	100	14/20	155	1	71.12
213100-2014	200	14/20	190	1	76.33
213100-1024	100	24/40	185	1	78.30
213100-2024	200	24/40	205	1	81.56
213100-5024	500	24/40	245	1	84.16



213202

Flask, Reaction / Storage, AIRLESS-WARE®

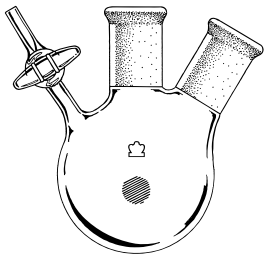
Round bottom flask with a $ joint and a 2 mm bore stopcock used for short-term storage of solvents and reactions of air-sensitive materials. Supplied with an 801001-0002 glass plug and the patented 809000-0021 pressure/vacuum retainer.

Kontes Article No.	Capacity (mL)	$ Joint	Approx. Dia. (mm)	Case Qty.	Case Price
213202-0514	50	14/20	48	1	88.73
213202-1014	100	14/20	60	1	88.73
213202-2514	250	14/20	83	1	90.37
213202-2524	250	24/40	83	1	95.92
213202-5024	500	24/40	102	1	99.51

Flask, Reaction / Storage, Two Neck, AIRLESS-WARE®

Round bottom flask with a ⅋ joint and an additional angled side neck with the same size ⅋ joint as the center neck. A 2 mm bore glass stopcock is used for short-term storage of solvents and reactions of air-sensitive materials. Supplied with an 801001-0002 glass plug and the patented 809000-0021 pressure/vacuum retainer.

Kontes Article No.	Capacity (mL)	⅋ Joint	Approx. Dia. (mm)	Case Qty.	Case Price
213205-0514	50	14/20	48	1	95.92
213205-1014	100	14/20	60	1	96.57
213205-2514	250	14/20	83	1	97.55
213205-2524	250	24/40	83	1	106.04
213205-5024	500	24/40	102	1	108.96

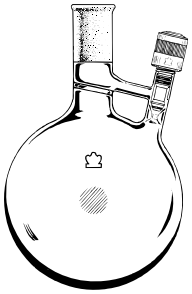


213205

Flask, Airless / Straus, AIRLESS-WARE®

Round bottom type developed by Kontes for solvent storage as required by many inorganic reactions. Dry, deoxygenated, and grease-free solvents are maintained in this state for relatively long periods of time. Solvent integrity is provided by the Kontes HI-VAC® valve which provides access to the flask contents. Quantities of solvent are withdrawn from the flask using either a cannula or a syringe with a proper length needle. Valve is 0-4 mm, with an 826601 plug.

Kontes Article No.	Capacity (mL)	⅋ Joints	Approx. Overall Height x Width (mm)	Case Qty.	Case Price
213210-0500	500	24/40	195 x 110	1	92.32
213210-1000	1000	24/40	220 x 135	1	110.59

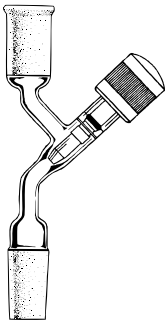


213210

Transfer Valve Adapter, AIRLESS-WARE®

For attachment to flasks having the same joint size. Valve component permits liquid or gas addition to the receiving vessel. Can be used with the 216080 solvent transfer manifold. HI-VAC valve is 0-4 mm with a 826601 plug.

Kontes Article No.	⅋ Joints	Approx. Overall Height x Width (mm)	Case Qty.	Case Price
211460-2440	24/40	180 x 65	1	88.73



211460

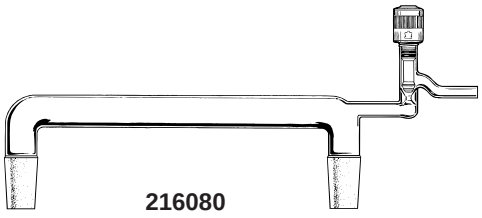
Manifold, Solvent Transfer, AIRLESS-WARE®

Designed for the purification and transfer of solvents under airless conditions. The manifold allows the vacuum transfer of solvent at room temperature from a boiling flask with a vacuum valve directly into an evacuated solvent storage flask. Solvent is then cooled to a low temperature with liquid nitrogen or dry ice/acetone. Manifold incorporates a HI-VAC valve with an 826601-0004 plug and 3/8" ground connection. For solvent transfer, open valves A and C; close valve B. System is evacuated and valve C is closed. Open valve B carefully while stirring the dry, deoxygenated solvent. Vacuum transfer begins.

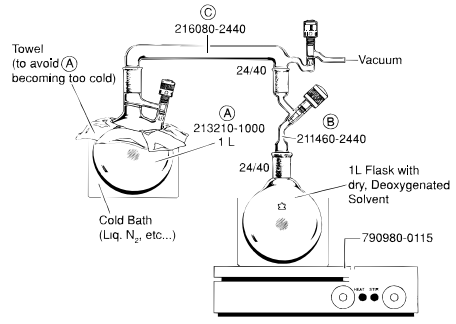
Solvent transfer time for: Ether - 1-2 hours
THF - 2-4 hours
Toluene - 10 hours

When finished transferring, close valves A and B. Vent through valve C.

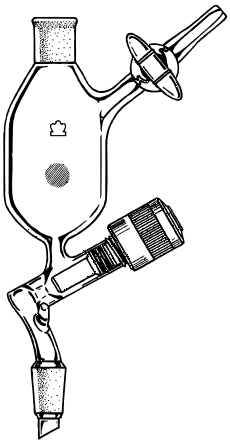
Kontes Article No.	⅋ Joints	Approx. Overall Height x Width (mm)	Case Qty.	Case Price
216080-2440	24/40	380 x 140	1	129.52



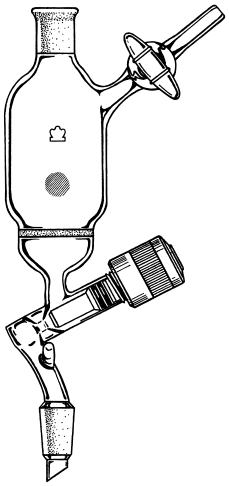
216080



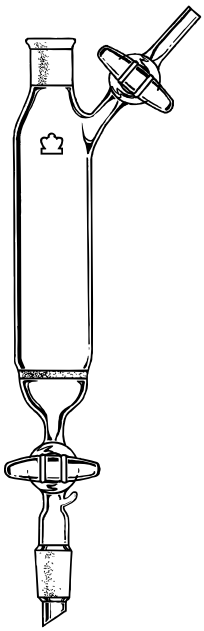
Typical Application



215200



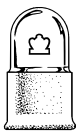
215000



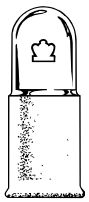
215100



851800



851900



852000

Funnel, Addition, AIRLESS-WARE®

With sidearm stopcock and ⅌ joints. Kontes HI-VAC® valve minimizes contamination and maintains vacuum in the micron region. Tip seal of the valve is directed toward the normal storage area of the funnel.

Kontes Article No.	⅌ Joints	Capacity (mL)	Approx. Overall Height (mm)	Case Qty.	Case Price
215200-0100	14/20	100	220	1	168.35
215200-0250	24/40	250	290	1	185.32
Replacement Parts					
801001-0002	Stopcock for Side Arm, Size 2, ⅌ Stopcock Size Bore (mm) 12/30			1	15.88
809000-0021	Stopcock Pressure/Vacuum Retainer, Fits Plug Sizes (mm) 12/30, 12.60/40, 14.5/50, O-Ring Size 205			1	6.37
826601-0004	PTFE Valve Plug, Size 4			1	8.14

Funnel, Filter, AIRLESS-WARE®

With frit, sidearm stopcock, and ⅌ joints. Kontes HI-VAC valve minimizes contamination and maintains vacuum in the micron region. Tip seal of the valve is directed toward the normal storage area of funnel.

Kontes Article No.	⅌ Joints	Capacity (mL)	Frit Porosity	Pore Size (Microns)	Frit Dia. (mm)	Approx. Overall Height (mm)	Case Qty.	Case Price
215000-6023	14/20	60	Coarse	40-60	30	200	1	207.50
215000-6044	14/20	60	Medium	10-15	30	200	1	207.50
215000-2023	24/40	200	Coarse	40-60	40	300	1	229.68
215000-2044	24/40	200	Medium	10-15	40	300	1	229.68
Replacement Parts								
801001-0002	Stopcock for Side Arm, Size 2, ⅌ Stopcock Size Bore (mm) 12/30						1	15.88
809000-0021	Stopcock Pressure/Vacuum Retainer, Fits Plug Sizes (mm) 12/30, 12.60/40, 14.5/50, O-Ring Size 205						1	6.37
826601-0004	PTFE Valve Plug, Size 4						1	8.14

Funnel, Filter, AIRLESS-WARE®

With frit, glass stopcocks, and ⅌ joints.

Kontes Article No.	⅌ Joints	Capacity (mL)	Frit Porosity	Pore Size (Microns)	Frit Dia. (mm)	Approx. Overall Height (mm)	Case Qty.	Case Price
215100-6023	14/20	60	Coarse	40-60	30	240	1	181.40
215100-6044	14/20	60	Medium	10-15	30	240	1	181.40
215100-2023	24/40	200	Coarse	40-60	40	360	1	191.84
215100-2044	24/40	200	Medium	10-15	40	360	1	191.84
Replacement Parts								
801001-0002	Stopcock for Side Arm, Size 2, ⅌ Stopcock Size Bore (mm) 12/30						1	15.88
809000-0021	Stopcock Pressure/Vacuum Retainer, Fits Plug Sizes (mm) 12/30, 12.60/40, 14.5/50, O-Ring Size 205						1	6.37

Stopper, Glass, Solid ⅌, Pennyhead with Lug, KEM-KLAMP®

Designed for use with 675500 Kem-Klamps. Pennyhead top has a lug attachment to engage the spring portion of the Kem-Klamp.

Kontes Article No.	⅌ Joint	Case Qty.	Case Price
851800-1420	14/20	1	15.01
851800-2440	24/40	1	20.88

Stopper, Glass, Cap-Type

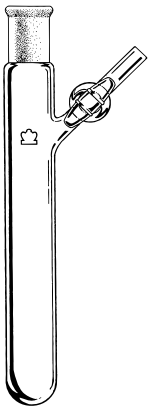
Cap-type ⅌ stopper fits over tubes and other apparatus having a ⅌ inner opening.

Kontes Article No.	⅌ Joint	Case Qty.	Case Price
851900-1420	14/20	1	16.56
852000-2440	24/40	1	22.43

Tube, Schlenk, Reaction / Storage, AIRLESS-WARE®

Used for storage and reactions of air-sensitive materials. Complete with a ⧩ outer joint and a 2 mm bore stopcock. Supplied with a 801001-0002 glass plug and the patented 809000-0021 pressure/vacuum retainer.

Kontes Article No.	Capacity (mL)	⧩ Joint	Tube Size O.D. x Height (mm)	Case Qty.	Case Price
218702-0214	25	14/20	25 x 198	1	73.08
218702-0514	50	14/20	28 x 231	1	73.08
218702-1014	100	14/20	32 x 281	1	74.06
218702-1024	100	24/40	32 x 299	1	77.98

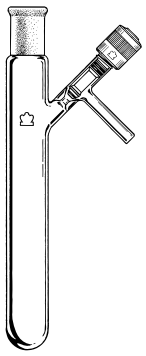


218702

Tube, Schlenk, Reaction / Storage, AIRLESS-WARE®

Used for storage and reactions of air-sensitive materials. Tubes with ⧩ 14/20 outer joints have 0-4 mm valves with 826601-0004 plugs. Tubes with ⧩ 24/40 outer joints have 0-8 mm valves with 826601-0008 plugs.

Kontes Article No.	Capacity (mL)	⧩ Joint	Valve Stem O.D. (mm)	Approx. Tube O.D. x Overall Height (mm)	Case Qty.	Case Price
218706-0214	25	14/20	9	25 x 207	1	77.98
218706-0514	50	14/20	9	28 x 241	1	77.98
218706-1014	100	14/20	9	32 x 288	1	79.95
218706-1024	100	24/40	13	32 x 315	1	80.91
218706-2524	250	24/40	13	41 x 379	1	82.87

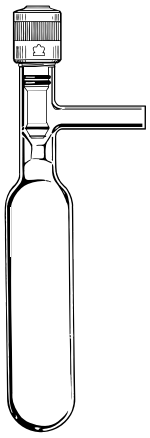


218706

Tube, Schlenk, Vacuum, AIRLESS-WARE®

Tube has a HI-VAC valve to control gas flow to the reaction tube. Suitable for use with 216050 or 216060 manifolds. Tubes are constructed of medium wall borosilicate glass and perform well under both thermal and pressure-type reactions. The 25 and 50 mL tubes have 0-4 mm valves with 826601-0004 plugs. The 100 and 350 mL tubes have 0-8 mm valves with 826601-0008 plugs.

Kontes Article No.	Capacity (mL)	Approx. Stem O.D. (mm)	Approx. Body O.D. x Height (mm)	Approx. Overall Width x Height (mm)	Case Qty.	Case Price
218710-0015	15	9	19 x 100	65 x 165	1	83.50
218710-0025	25	9	25 x 100	70 x 165	1	83.50
218710-0050	50	9	32 x 120	75 x 190	1	97.55
218710-0100	100	13	38 x 150	80 x 235	1	110.59
218710-0350	350	13	51 x 250	90 x 335	1	124.62

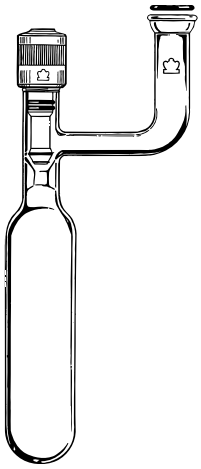


218710

Tube, Schlenk, Vacuum, O-Ring Sidearm, AIRLESS-WARE®

Modified version of the Schlenk Tube having a size 15 standard socket joint at the sidearm. Suitable for connection to 216030 or 216040 vacuum manifolds. The 25 and 50 mL tubes have 0-4 mm valves with 826601-0004 plugs. The 100 and 350 mL tubes have 0-8 mm valves with 826601-0008 plugs. All sizes have #116 o-ring.

Kontes Article No.	Capacity (mL)	Approx. Body O.D. x Height (mm)	Approx. Overall Width x Height (mm)	Case Qty.	Case Price
218720-0015	15	19 x 100	80 x 165	1	92.32
218720-0025	25	25 x 100	80 x 165	1	92.32
218720-0050	50	32 x 120	90 x 200	1	106.36
218720-0100	100	38 x 150	100 x 235	1	120.39
218720-0350	350	51 x 250	120 x 335	1	134.42

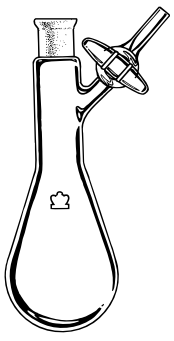


218720

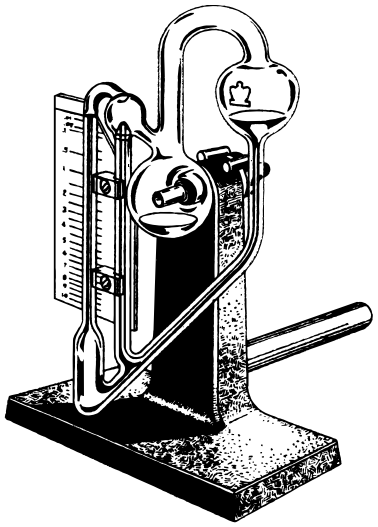
Tube / Flask, Vacuum, AIRLESS-WARE®

Improved version of Schlenk tube. The modified Kjeldahl shape facilitates heating, stirring and solvent stripping without impairing ease of liquid and solid transfer. Bottom of the flask is shaped to fit Kontes spherical heating mantles. Supplied with an 801001-0002 glass plug and the patented 809000-0021 pressure/vacuum retainer.

Kontes Article No.	Capacity (mL)	⧩ Joint	Approx. Overall Height (mm)	Case Qty.	Case Price
213100-0114	10	14/20	105	1	58.85
213100-0214	25	14/20	120	1	65.91
213100-0514	50	14/20	135	1	69.50
213100-1014	100	14/20	155	1	71.12
213100-2014	200	14/20	190	1	76.33
213100-1024	100	24/40	185	1	78.30
213100-2024	200	24/40	205	1	81.56
213100-5024	500	24/40	245	1	84.16



213100



923000

Gauge, McLeod-Lippincott

Tilting-type McLeod-Lippincott gauge similar to 922500, except with the addition of a unique mercury self-leveling device which allows **automatic zeroing.** The top of the reference (center) capillary is in precise horizontal alignment with the top of the closed (left) capillary and the zero point on the scale, when the gauge is in the reading (vertical) position. Mercury, after rising in the reference capillary, overflows at the zero point and falls into the built-in trap. When the gauge is tilted, the entrapped mercury returns to the reservoir at the right. Gauge can be used as a bench instrument, mounted on a framework, or connected to an all-glass system by means of the $\overline{\$}$ 19/38 inner joint on the rotating shaft. Supplied complete as described with precision capillaries, replaceable engraved scales, automatic stops, a cast aluminum base, a 1/2" diameter support rod and instructions, but without mercury. Vacuum Gauge Trap 923250 is recommended for use with this gauge. The range letter is sandblasted on the center bulb to facilitate identifying the proper scale.

Kontes Article No.	Range (mm)	Letter	Lowest Reading (mm)	Approx. Vol. of Mercury Req'd. (mL)	Approx. Overall Height x Width (mm)	Case Qty.	Case Price
923000-0021	0-1	A	0.001	11	270 x 170	1	507.62
923000-0022	0-5	B	0.005	9	270 x 170	1	507.62
923000-0023	0-10	C	0.01	10	270 x 170	1	507.62
923000-0024	0-15	D	0.05	8	270 x 170	1	507.62
Component Parts							
923001-0021	Scale, 0-1					1	27.02
923001-0022	Scale, 0-5					1	27.02
923001-0023	Scale, 0-10					1	27.02
923001-0024	Scale, 0-15					1	27.02
923002-0021*	Gauge, Without Stand, 0-1					1	442.39
923002-0022*	Gauge, Without Stand, 0-5					1	442.39
923002-0023*	Gauge, Without Stand, 0-10					1	442.39
923002-0024*	Gauge, Without Stand, 0-15					1	442.39
922504-0000	Vacuum Gauge Stand					1	69.16

*Includes gauge glass, scale, automatic stop and hardware.



923250

Gauge Trap

For direct connection to vacuum gauges and to trap particulates which would contaminate these instruments when they are vented to the atmosphere. Comes packed with glass wool.

Kontes Article No.	Hose Connections	Approx. O.D. x Overall Length (mm)	Case Qty.	Case Price
923250-0000	#2	22 x 120	1	24.93



931000

Check Valve

Glass body with a 1/4" ceramic ball to effect a liquid seal. Hose connection at both ends for connection to flexible tubing.

Kontes Article No.	Hose Connections	Approx. O.D. x Overall Length (mm)	Case Qty.	Case Price
931000-0000	#1	13 x 95	1	64.06

Hose Connector Tubing Size Chart

Hose Connector Size	Fits Flexible Tubing I.D.
1	1/4"
2	3/8"
3	1/2"
4	3/4"

Gauge, Medium Vacuum, 1 to 10^{-3} mm Hg, 1000 micron to micron

Compact versatile gauges ideal for all vacuum applications. Solid state circuitry with voltage regulation assures long life and low maintenance. All models supplied with gauge and connecting cables. Cabinet dimensions 8"W x 5"H x 5"D; meter face dimensions 4" x 4" with 7" depth. All meters are 115 VAC for 50/60Hz. Accuracy 2% full scale angular meter deflection.

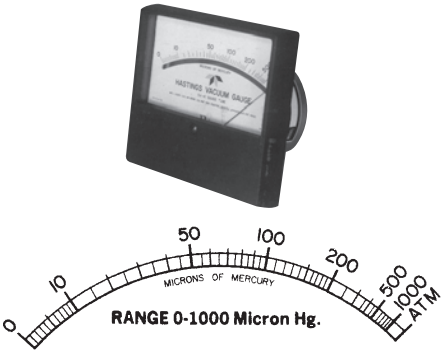
Kontes Article No.	Description	Case Qty.	Case Price
923510-0115	Cabinet Model	1	873.03
923530-0115	Compact Model	1	679.89

Gauge Tube - Required Accessory

Kontes Article No.	Used With Meter	Base Color	Case Qty.	Case Price
923512-0000	923510, 923530	Yellow	1	96.91
923537-0000	923535	Orange	1	139.63
923513-0000	Gauge Tube Adapter		1	92.63



923510



923530

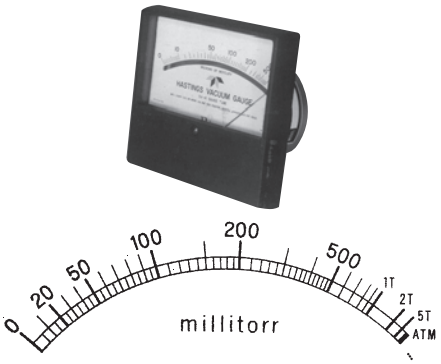
Gauge, Economy, 5 to 5 x 10-2 mm Hg, 5 torr to 5 millitorr

Compact versatile gauges ideal for all vacuum applications. Solid state circuitry with voltage regulation assures long life and low maintenance. All models supplied with gauge and connecting cables. Cabinet dimensions 8"W x 5"H x 5"D; meter face dimensions 4" x 4" with 7" depth. All meters are 115 VAC for 50/60Hz. Accuracy 2% full scale angular meter deflection.

Kontes Article No.	Description	Case Qty.	Case Price
923535-0115	Compact Model	1	524.60

Gauge Tube - Required Accessory

Kontes Article No.	Used With Meter	Base Color	Case Qty.	Case Price
923512-0000	923510, 923530	Yellow	1	96.91
923537-0000	923535	Orange	1	139.63
923513-0000	Gauge Tube Adapter		1	92.63

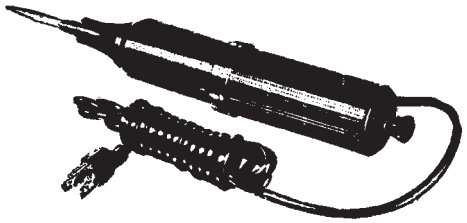


923535

KONTES
custom glass shop
*call toll-free **800-682-6644***
customglass@kimble-chase.com

Contact the **Kontes Custom Glass Shop** at KIMBLE CHASE for modifications of standard products or fabrication of your unique designs. And when it comes to repairs, we can save you up to 75% of the cost of a new item. Save an additional 10% on repairs of Kontes or Kimble Brand products. Fax your requirements to **856-692-6644**.

- **Custom Fabrications**
- **Quality Repairs**
- **Modifications of All Kinds**
- **No Order Too Small**
- **Quick Turnaround**

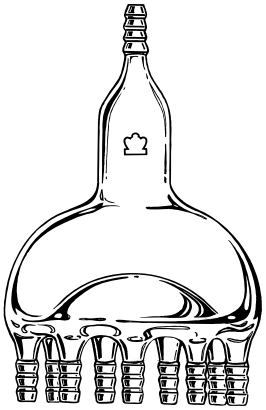


691550

Leak Detector, Vacuum, Tesla Coil

The Tesla Coil is designed for the detection of small leaks in evacuated glass systems. Requires a 115 VAC 50/60 Hz power supply. CAUTION: Care should be used with the coil near the tip of the seal in sealed systems such as dewars. Punctures occur because of the concentration of high voltage at this point.

Kontes Article No.	Case Qty.	Case Price
691550-0000	1	233.58

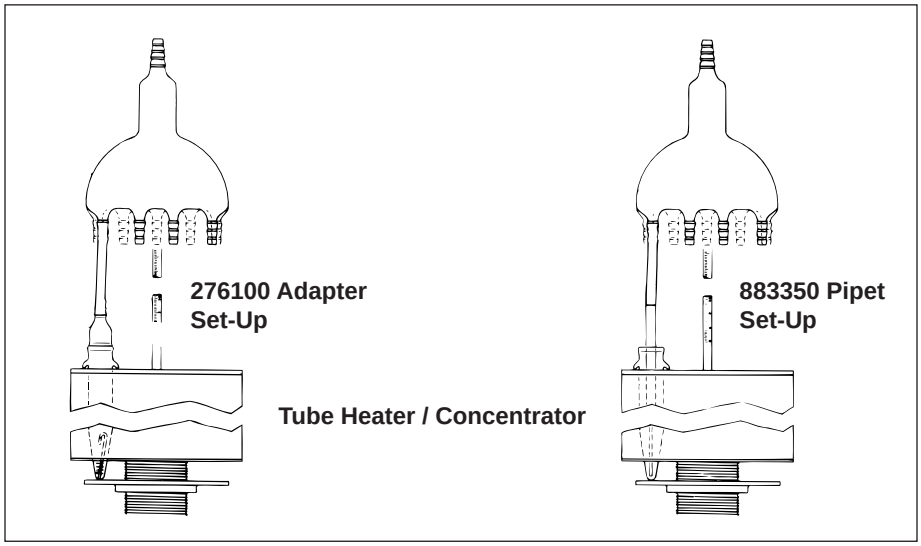


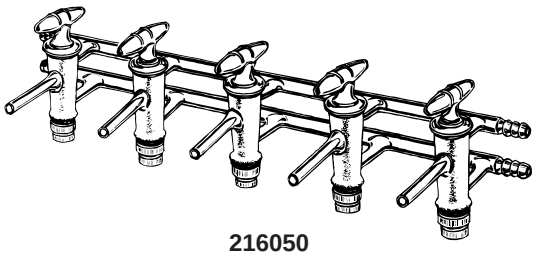
655800

Manifold, Circular, Tube Heater Gas, 9-Place, for Concentration with Nitrogen Gas or Vacuum

A nine place unit specifically for use with tube heaters. Designed for vacuum reactions and sample concentration by gas flow through pipets. Easily clamped just below vacuum outlet. For vacuum adapter, use 276100. For pipet, use 883350.

Kontes Article No.	Top Hose Connection	Bottom Hose Connections	Case Qty.	Case Price
655800-0000	#2	#1	1	310.07



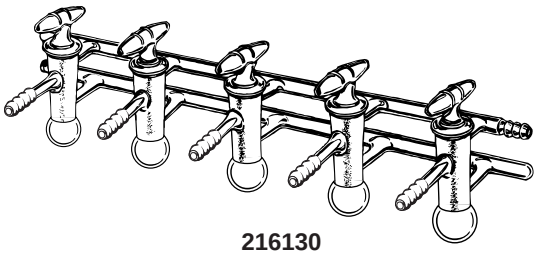


216050

Manifold, Double, Vacuum / Gas, Glass Plugs

An all-glass manifold for connecting inert gas and vacuum sources to sidearm stopcocks. Each stopcock has a metering groove cut into the plug to provide fine control of vacuum and inert gases. Distance between stopcocks is 65 mm for the 3 position size and 100 mm for the 5 position size. Supplied with patented 809000-0021 pressure/vacuum retainers.

Kontes Article No.	**No. of** Places	**Hose** Connections	**Approx. Overall** Width x Height x Depth (mm)	**Case** Qty.	**Case** Price
216050-0000	3	#2	230 x 87 x 90	1	383.66
216050-0005	5	#2	500 x 87 x 90	1	598.98



216130

Manifold, Double, Vacuum / Gas, Glass Plugs

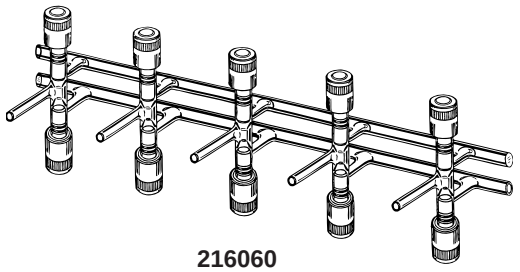
An all-glass manifold for connecting inert gas and vacuum sources. Fabricated from ½" medium wall tubing. Stopcocks are 4mm bore glass with lower vacuum chamber and are spaced 85mm apart. Top right connection is for inert gas and lower left connection is for vacuum.

Kontes Article No.	**No. of** Places	**Hose** Connections	**Approx. Overall** Width (mm)	**Case** Qty.	**Case** Price
216130-0003	3	#2	280	1	533.95
216130-0004	4	#2	365	1	693.81
216130-0005	5	#2	450	1	844.67

Manifold, Double, Vacuum / Gas, PTFE Valves

For connecting inert gas and vacuum sources. 4 mm PTFE vacuum valves provide grease-free fine control. Sample contacts only PTFE and borosilicate glass. Beams are 1/2" (12.7 mm) O.D. with upper-left and lower-right ends open. Delivery ports are 9 mm O.D. Distance between valves is 100 mm. Plugs are 826501-0004.

Kontes Article No.	No. of Places	Distance Between Ports (mm)	Approx. Overall Width x Height x Depth (mm)	Case Qty.	Case Price
216060-0003	3	100	300 x 148 x 83	1	525.90
216060-0000	5	100	500 x 148 x 83	1	711.21

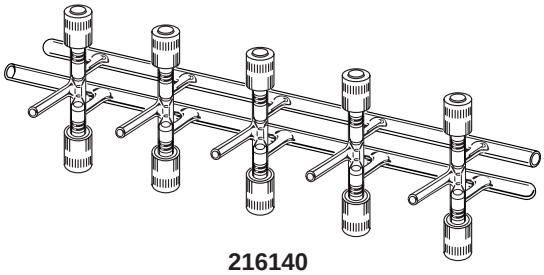


216060

Manifold, Double, Vacuum/Gas, PTFE Valves

For connecting inert gas and vacuum sources. Supplied with 4mm PTFE vacuum valves for grease-free operation. Fabricated from 1/2" medium wall tubing. Upper left and lower right beams are open. Ports have 9mm O.D. openings.

Kontes Article No.	No. of Places	Distance Between Ports (mm)	Approx. Overall Width (mm)	Case Qty.	Case Price
216140-0003	3	100	400	1	510.15
216140-0004	4	100	500	1	612.17
216140-0005	5	100	600	1	691.07

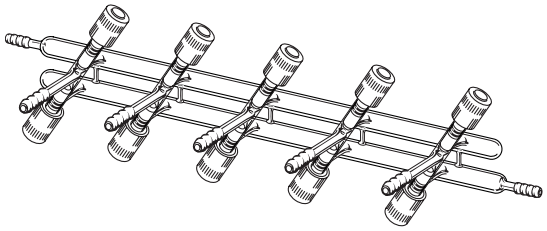


216140

Manifold, Double, Vacuum/Gas, PTFE Valves Sealed at 45° Angle

For connecting inert gas and vacuum sources. Supplied with 4mm PTFE vacuum valves for grease-free operation. Fabricated from larger 3/4" medium wall tubing. Upper left and lower right beams are open. Ports are spaced 100mm apart and have serrated hose connections. Rod braces are located between each bank for added strength. The valves are sealed at a 45° angle to allow easier manipulation.

Kontes Article No.	No. of Places	Hose Connections	Distance Between Ports (mm)	Approx. Overall Width (mm)	Case Qty.	Case Price
216145-0003	3	#2	100	400	1	612.17
216145-0004	4	#2	100	500	1	734.61
216145-0005	5	#2	100	600	1	829.84

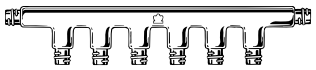


216145

Manifold, Vacuum, 6-Place, Microscale, Threaded (GPI 13-425)

Designed for concentration of multiple samples using an inert atmosphere or vacuum. Also useful for molecular distillation. Unused ports are easily closed off with caps.

Kontes Article No.	GPI Thread Size	Approx. Overall Width x Height (mm)	Case Qty.	Case Price
747650-0006	13-425	200 x 40	1	129.52
Accessories				
747185-0013	Hose Connector, PTFE, 13-425 to 1/4"-28		1	11.35
410121-1325	Cap, 13-425		48	33.62
747205-1313	Connector, 13-425 to 13-425		1	12.27
747205-1320	Connector, 13-425 to 20-400		1	13.18



747650



747185



747205-1313



410119
410121



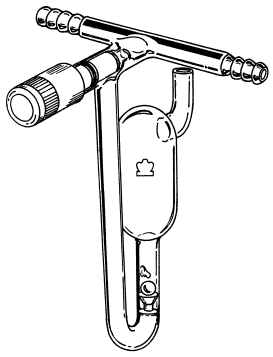
747205-1320

Valve, Pressure Release, AIRLESS-WARE®

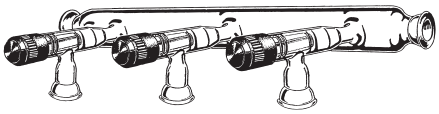
Designed for applications that require evacuated apparatus to be filled with an inert gas to one atmosphere. Uses include the introduction of an inert gas into a vacuum desiccator or nitrogen into Airless-ware® apparatus. A pressure release valve should be placed between the nitrogen source and nitrogen manifold on all Airless-ware manifold installations.

Operation: Three mL of paraffin or silicone oil is added to the bubbler. One arm is connected to the low-pressure gas source, the other to the manifold or Airless-ware equipment. The check valve prevents oil or air from surging into the apparatus.

Kontes Article No.	Hose Connectors	Approx. Overall Height x Width x Depth (mm)	Case Qty.	Case Price
216100-0000	#2	130 x 80 x 102	1	152.63



216100

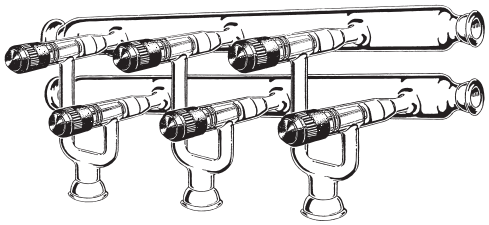


216030

Manifold, Vacuum, Single, HI-VAC® PTFE Valves

Incorporates reliable Kontes 826610-0008 HI-VAC® valves, with size 15 o-ring connectors and size 116 FKM o-rings. This manifold is designed for grease-free operation. Forward-facing valves allow good access. Compact enough for ease of assembly within a fume hood, thereby protecting the researcher from noxious chemicals. Designed for use with 211310 and 211320 adapters. It can easily be disassembled for cleaning if necessary. Replacement plug is 826601-0008 with a size 110 FKM o-ring. Ports are spaced 75 mm apart.

Kontes Article No.	No. of Places	Approx. Overall Dimensions Length x Height x Depth (mm)	Case Qty.	Case Price
216030-0003	3	250 x 75 x 130	1	400.62
216030-0004	4	325 x 75 x 130	1	561.14
216030-0005	5	400 x 75 x 130	1	700.78



216040

Manifold, Vacuum / Gas, Double, HI-VAC® PTFE Valves

Incorporates reliable Kontes 826610-0008 HI-VAC valves, with size 15 o-ring connectors and size 116 FKM o-rings. This manifold is designed for grease-free operation. Forward-facing valves allow good access. Compact enough for ease of assembly within a fume hood, thereby protecting the researcher from noxious chemicals. Designed for use with 211310 and 211320 adapters.

Unit is modular in concept, allowing experiments to be done with maximum flexibility. Unions and flexible stainless steel tubing are also available to maximize the utility of this manifold. It can easily be disassembled for cleaning if necessary. Replacement plug is 826601-0008 with size 110 FKM o-rings. Ports are spaced 100 mm apart.

Ref: Andrea Wayda, AT&T Bell Laboratories

Kontes Article No.	No. of Places	Approx. Overall Dimensions Length x Height x Depth (mm)	Case Qty.	Case Price
216040-0003	3	325 x 160 x 140	1	814.84
216040-0004	4	425 x 160 x 140	1	934.37
216040-0005	5	525 x 160 x 140	1	1,167.95

Hose Connector Tubing Size Chart

Hose Connector Size	Fits Flexible Tubing I.D.
1	1/4”
2	3/8”
3	1/2”
4	3/4”



Safety Program - *Play it safe in the lab.*

Our Safety Program discusses the ten basic safety rules of handling glassware as well as the technical properties and physics of glass. Available as a DVD.

Kimble Article No.	Format	Case Qty.	Case Price
99991D-99	DVD	1	23.99

See more safety products in the *SAFETYWARE* section.

Cap, Glass, O-Ring Connector

Used to seal flasks or as a port closure on the 216040 vacuum manifold. Size 15 connector is supplied with one size 116 FKM o-ring.

Kontes Article No.	Approx. I.D. (mm)	Approx. Overall Height (mm)	Case Qty.	Case Price
851810-0015	16	25	1	16.56



851810

Connector, Vacuum, O-Ring Connector to Hose

Size 15 o-ring connector for use with 216030 and 216040 HI-VAC manifolds and the 179920 adapter, for applications utilizing tubing. Supplied with one size 116 FKM o-ring.

Kontes Article No.	Fits Tubing I.D. (in.)	Hose Connection	Approx. Overall Height (mm)	Case Qty.	Case Price
183100-1502	3/8"	#2	50	1	39.94



183100

Connector, Vacuum, O-Ring Connector to Standard Taper Inner Joint

Provides for the utilization of standard taper glassware with a size 15 o-ring connector. These assemblies may be connected to the 216040 HI-VAC® manifold. Supplied with one size 116 FKM o-ring.

Kontes Article No.	Inner Joint	Approx. Overall Height (mm)	Case Qty.	Case Price
211010-1415	14/20	60	1	29.61
211010-2415	24/40	90	1	30.53

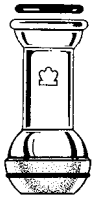


211010

Connector, Vacuum, O-Ring Connector to Spherical Inner Joint

Provides for the utilization of standard ball and socket joints with a size 15 o-ring connector. Size 15 o-ring connector supplied with size 116 o-ring. Size 28/15 joint supplied with size 020 o-ring.

Kontes Article No.	Ball Joint	Approx. Overall Height (mm)	Case Qty.	Case Price
211010-2815	28/15	70	1	50.64

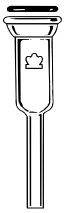


211010

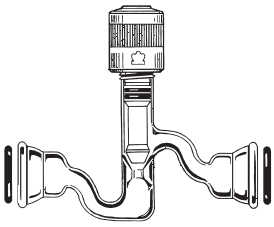
Connector, Vacuum, O-Ring Connector to Tubing

Size 15 o-ring connector for use with 216030 and 216040 HI-VAC manifolds and the 179920 adapter, for applications utilizing tubing. Supplied with one size 116 FKM o-ring.

Kontes Article No.	**Fits Flexible** Tubing I.D. (in.)	**Stem O.D. for** Tubing (mm)	**Approx. Overall** Height (mm)	**Case** Qty.	**Case** Price
211040-0015	1/4	9	50	1	19.56
211040-1215	1/2	16	50	1	19.56



211040

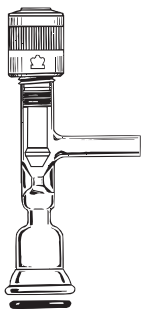


211210

Connector, Vacuum, HI-VAC® PTFE Valve

Use with size 15 o-ring glassware and 216030-0003 and 216040 HI-VAC manifolds. Adapter has a 826600 HI-VAC valve placed between two size 15 o-ring connectors with size 116 FKM o-rings. Plug is 826601.

Kontes Article No.	Approx. Overall Height x Width (mm)	Case Qty.	Case Price
211210-0015	65 x 100	1	95.60

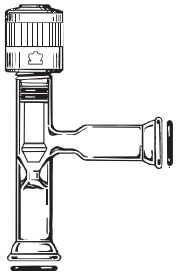


211310

Connector, Vacuum, HI-VAC® PTFE Valve

Adapter has a size 15 o-ring connector and a right angle HI-VAC valve, with an 826601 plug. Designed for use with 216030 and 216040 HI-VAC manifolds. Connector o-ring is FKM size 116.

Kontes Article No.	Approx. Sidearm O.D. (mm)	Approx. Overall Height x Width (mm)	Case Qty.	Case Price
211310-0015	9	100 x 58	1	82.87



211320

Connector, Vacuum, HI-VAC® PTFE Valve

Adapter has two size 15 o-ring connectors and a right angle, HI-VAC® valve with an 826601 plug. Designed for use with 216030 and 216040 HI-VAC manifolds. Connector o-rings are FKM size 116.

Kontes **Article No.**	Valve **Size**	Approx. Overall Height x Width **(mm)**	Case **Qty.**	Case **Price**
211320-0815	8	100 x 58	1	82.87
211320-1215	12	115 x 58	1	99.17

KONTES
custom glass shop
*call toll-free **800-682-6644***
customglass@kimble-chase.com

Contact the **Kontes Custom Glass Shop** at KIMBLE CHASE for modifications of standard products or fabrication of your unique designs. And when it comes to repairs, we can save you up to 75% of the cost of a new item. Save an additional 10% on repairs of Kontes or Kimble Brand products. Fax your requirements to **856-692-6644**.

- **Custom Fabrications**
- **Quality Repairs**
- **Modifications of All Kinds**
- **No Order Too Small**
- **Quick Turnaround**

Filter Adapter, Vacuum, In-Line, O-Ring Connector

Designed as an accessory for the 216030-0003 or 216040 vacuum manifold. The size 15 o-ring connector can be attached to port openings or to flasks and Schlenk tubes. Supplied with two size 116 FKM o-rings. Available with a coarse (C) or medium (M) porosity disc.

Kontes Article No.	Disc Porosity	Approx. Overall Height x O.D. (mm)	Case Qty.	Case Price
215510-1523	C	100 x 25	1	65.26
215510-1544	M	100 x 25	1	65.26

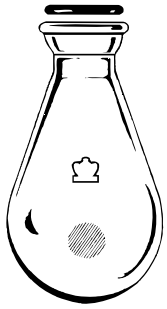


215510

Flask, Vacuum Manifold, O-Ring Connector

Single neck flask with a size 15 o-ring connector opening. Can be used with a 216040 vacuum manifold or alone as a reaction flask or receiver. Supplied with one size 116 FKM o-ring.

Kontes Article No.	Capacity (mL)	Case Qty.	Case Price
213000-0215	25	1	25.98
213000-0515	50	1	25.98
213000-1015	100	1	25.98

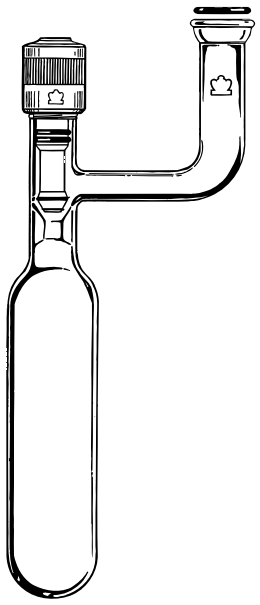


213000

Tube, Schlenk, Vacuum, HI-VAC® PTFE Valve, Sidearm with O-Ring Connector

Modified version of the Schlenk Tube having a size 15 standard socket joint at the sidearm. Suitable for connection to 216030 or 216040 vacuum manifolds. The 25 and 50 mL tubes have 0-4 mm valves with 826601-0004 plugs. The 100 and 350 mL tubes have 0-8 mm valves with 826601-0008 plugs. All sizes have #116 o-ring.

Kontes Article No.	Capacity (mL)	Approx. Body O.D. x Height (mm)	Approx. Overall Width x Height (mm)	Case Qty.	Case Price
218720-0015	15	19 x 100	80 x 165	1	92.32
218720-0025	25	25 x 100	80 x 165	1	92.32
218720-0050	50	32 x 120	90 x 200	1	106.36
218720-0100	100	38 x 150	100 x 235	1	120.39
218720-0350	350	51 x 250	120 x 335	1	134.42



218720



38004

Pump, Vacuum, Filtering

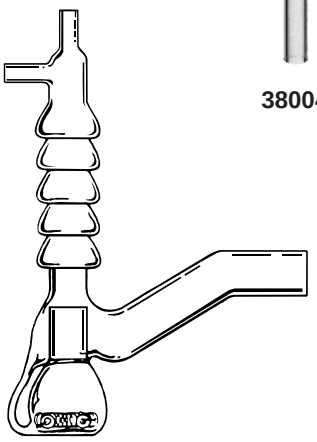
KIMAX pump designed for minimum free air flow of 6.5 liters per minute with 40 lbs. of water pressure. With the same water pressure, a 500 mL filter flask is evacuated to the vapor pressure of water (approximately 29.3" of mercury vacuum) in approximately 1.5 minutes. Since water backs up into all pumps tested when operated on a closed system at pressures of less than 35 lbs., a check valve of improved design is an integral part of this pump. Stems are designed to accept 5/16 inch I.D. flexible tubing.

Kimble Article No.		Case Qty.	Case Price
38004-99		1	80.41

Pump, Vacuum, Oil Diffusion

Single stage semi-fractionating oil diffusion pump which is useful on small systems. At reduced pressures of 1 x 10^{-5} mm, this unit will pump at the rate of 10 liters per second. Supplied complete with an internal heating coil, and insulating jacket (not shown). Top tubing is 15 mm O.D. System tubing is 32 mm O.D.

Kontes Article No.		Case Qty.	Case Price
924770-0000		1	801.26
Accessory			
730900-0000	Power Source	1	337.32

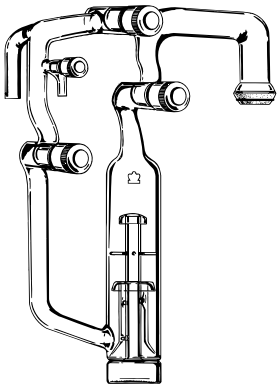


924770

Pump, Vacuum, Oil Diffusion with Bypass

A two-stage oil diffusion pump with a built-in bypass. $ 35/25 o-ring ball joint provides a connection to a vacuum trap and system. Unit is air cooled with an aluminum cooling vane (supplied but not shown). Pumping speed is 20 liters per second at an ultimate vacuum of 1 x 10^{-6} mm. Tubing is 16 mm O.D. for connection to a mechanical backing pump with a 1/2 inch I.D. vacuum hose. One 826501 and three 826501 plugs are supplied.

Kontes Article No.		**Volume of Oil** Required (mL)	**Case** Qty.	**Case** Price
924785-0000		15	1	1,380.66
Components				
924762-0000	Aluminum Cooling Vein		1	29.32
Accessories				
924781-0000	Heater Only		1	270.13



924785

OIL DIFFUSION PUMP SPECIFICATIONS

	924770	924785
Ultimate Vacuum	1 x 10^{-5} mm or better	1 x 10^{-6} mm or better
Pumping Speed	8 liters/sec. at 10^{-4} mm	20 liters/sec. at 10^{-6} mm
Recommended Oil	923655 D.C. #705	923655 D.C. #705
Heater Rating (Max.)	50 watts at 60 VAC	–
Forepressure Required	40 Microns	50 Microns
Coolant	AIR	AIR
Height	14 1/2" (37 cm)	10 5/8" (27 cm)
Width	8 5/8" (22 cm)	9 1/4" (23.5 cm)
Forepump Connection	15 mm O.D.	.16 mm O.D.
High-Vacuum Connection	32 mm O.D.	$ 35/25

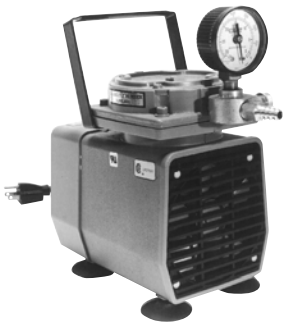
Pump, Vacuum, Diaphragm, Pressure / Vacuum

A quiet, reliable vacuum source for the ULTRA-WARE® HPLC Mobile Phase Handling System. Protected internal surfaces provide high resistance to corrosion and solvent attack. Supplied complete with a gauge, a regulator, and fittings.

Specifications

Ultimate Vacuum: 25" (635 mm) Hg
Maximum Free Air Flow: 1.1 CFM (0.034 cubic meters)

Kontes Article No.	VAC	Hz	Amps	Case Qty.	Case Price
923910-0115	115	60	4.2	1	546.79



923910

Pump, Vacuum / Pressure

A quiet, reliable vacuum source for micro applications. Economically priced all- plastic pump head is supplied with two hose connectors. Free air capacity is 1100 cubic inches/minute.

Kontes Article No.	Vacuum (Hg)	Max. Pressure (psig)	Tubing Adapters	Overall Length x Width x Height (in.)	Volts	Hz	Case Qty.	Case Price
923920-0115	20"	18	3/8"	7 x 4 x 5	115	60	1	233.58

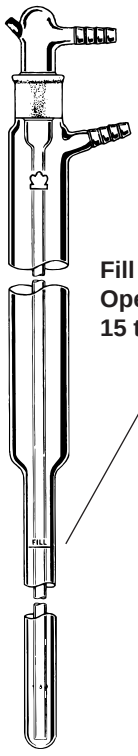


923920

Regulator, Gas Pressure

Excess pressure is vented automatically to the atmosphere. Manometer length tubing prevents back pressure of mercury under vacuum. Mercury level can be adjusted to specific pressure relief points. Observation of manometric pressures is possible. Fill capacity is 25 mL and operating range is 15 - 25 mL.

Kontes Article No.	Joints	Hose Connections	Approx. Overall Height (mm)	Case Qty.	Case Price
216150-0000	19/22	#2	860	1	150.07
Component Parts					
216151-0000	Inner Tube			1	71.77
216152-0000	Regulator Body			1	77.32
Accessory					
923250-0000	Glass Wool Trap			1	24.93

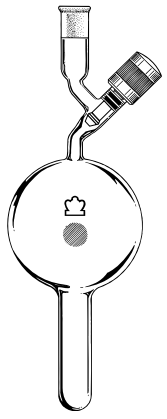


216150

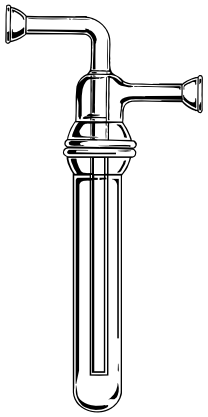
Storage Bulb

Storage bulb with a 4 mm PTFE vacuum valve for grease-free storage of gases or liquids. outer joint allows connection to systems using same size inner joints. Condensation tail is 20 mm O.D. x 75 mm high. Plug is 826601-0004.

Kontes Article No.	Capacity (mL)	Joint	Approx. Overall Height x Width (mm)	Case Qty.	Case Price
925700-0250	250	14/20	250 x 90	1	119.74
925700-0500	500	14/20	275 x 105	1	123.32



925700

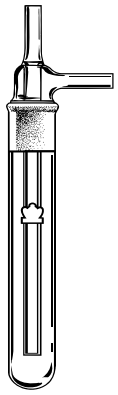


926060

Trap

Two piece construction for easy removal of condensed material which may damage the pump. Unit is positioned between the pump and manifold and is used with a dewar flask containing liquid nitrogen or other coolant. Inlet and outlet are # 15 o-ring connectors which use size 116 o-rings (not supplied) for connection to other components in the vacuum system. Main connector is size 50 with a size 229 FKM o-ring (1 supplied).

Kontes Article No.		Approx. Overall Height x Width (mm)	Case Qty.	Case Price
926060-0015		430 x 195	1	288.40
Component Parts				
926061-0015	Tube Only		1	92.63
926062-0015	Inner Only, #15 O-Ring Connections		1	111.58
758252-0229	FKM O-Rings, Size 229, (Pkg./5) 1 Supplied		5	47.87
675000-0075	Pinch Clamp, Size 75		1	83.99
Optional Parts				
611795-2430	Dewar Flask		1	294.92
758252-0116	FKM O-Rings, size 116, Pkg. 10		10	25.39
675000-0028	Pinch Clamp, Size 28 for #15 o-ring connector		1	16.08



926250

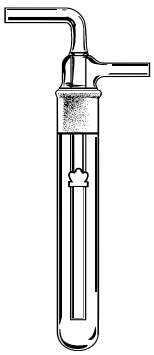
Trap

Two-piece construction for easy removal of condensate. Connections are 90° apart.

Kontes **Article No.**	**Joint**	Tubing O.D. **(mm)**	Body O.D. x Height **Below Joint (mm)**	Approx. Overall **Height x Width (mm)**	Case **Qty.**	Case **Price**
926250-0021	29/42	10	32 x 200	310 x 80	1	87.10
926250-0022	34/45	13	38 x 225	360 x 90	1	98.52
926250-0023	40/50	16	45 x 250	400 x 100	1	113.87
926250-0024	45/50	20	48 x 250	410 x 110	1	133.12
926250-0025	50/50	25	54 x 275	460 x 125	1	151.37
926250-0026	55/50	30	60 x 300	500 x 130	1	181.40

Component Parts

Kontes Article No.	Description	Case Qty.	Case Price	Kontes Article No.	Description	Case Qty.	Case Price
926252-0021	Tube, 29/42	1	29.61	926251-0021	Inner, 29/42	1	58.47
926252-0022	Tube, 34/45	1	37.19	926251-0022	Inner, 34/45	1	63.04
926252-0023	Tube, 40/50	1	47.23	926251-0023	Inner, 40/50	1	68.85
926252-0024	Tube, 45/50	1	55.45	926251-0024	Inner, 45/50	1	78.95
926252-0025	Tube, 50/50	1	61.21	926251-0025	Inner, 50/50	1	90.69
926252-0026	Tube, 55/50	1	67.54	926251-0026	Inner, 55/50	1	113.87



926300

Trap

Outlets are 180° apart for easy installation into a variety of vacuum systems. Protects the mechanical pump from attack by corrosive vapors which can be condensed by using liquid nitrogen or dry ice/slurry mixtures. Two-piece construction allows removal of condensate.

Kontes **Article No.**	**Joint**	Tubing O.D. **(mm)**	Body O.D. x Height **Below Joint (mm)**	Approx. Overall **Height x Width (mm)**	Case **Qty.**	Case **Price**
926300-0021	29/42	10	32 x 200	310 x 110	1	86.13
926300-0022	34/45	13	38 x 225	350 x 130	1	99.17
926300-0023	40/50	16	45 x 250	385 x 155	1	115.82
926300-0024	45/50	20	48 x 250	400 x 160	1	135.72
926300-0025	50/50	25	54 x 275	435 x 190	1	153.98
926300-0026	55/50	30	60 x 300	485 x 195	1	185.32

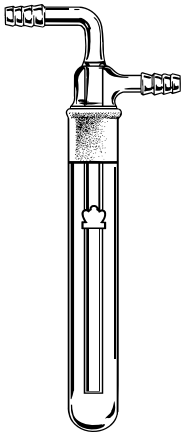
Component Parts

Kontes Article No.	Description	Case Qty.	Case Price	Kontes Article No.	Description	Case Qty.	Case Price
926252-0021	Tube, 29/42	1	29.61	926301-0021	Inner, 29/42	1	59.25
926252-0022	Tube, 34/45	1	37.19	926301-0022	Inner, 34/45	1	64.06
926252-0023	Tube, 40/50	1	47.23	926301-0023	Inner, 40/50	1	69.50
926252-0024	Tube, 45/50	1	55.45	926301-0024	Inner, 45/50	1	80.91
926252-0025	Tube, 50/50	1	61.21	926301-0025	Inner, 50/50	1	92.63
926252-0026	Tube, 55/50	1	67.54	926301-0026	Inner, 55/50	1	117.45

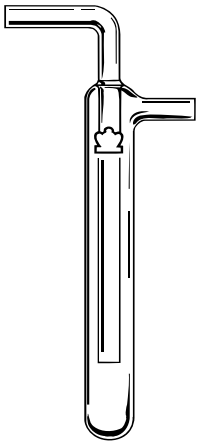
Trap

Outlets are 180° apart for easy installation into a variety of vacuum systems. Protects the mechanical pump from attack by corrosive vapors which can be condensed by using liquid nitrogen or dry ice/slurry mixtures. Two-piece construction allows removal of condensate. Hose connections are #3.

Kontes Article No.	Joint	Inner Tubing O.D. (mm)	Body O.D. x Height Below Joint (mm)	Approx. Overall Height x Width (mm)	Case Qty.	Case Price
926035-0021	29/42	10	32 x 200	310 x 110	1	84.82
926035-0022	34/45	13	38 x 225	350 x 130	1	96.57
926035-0023	40/50	16	45 x 250	385 x 155	1	109.61
926035-0025	50/50	25	54 x 275	435 x 190	1	143.54
926035-0026	55/50	30	60 x 300	485 x 195	1	169.66
Component Parts						
926306-0021	Inner, 29/42				1	60.02
926306-0022	Inner, 34/45				1	65.26
926306-0023	Inner, 40/50				1	69.16
926306-0025	Inner, 50/50				1	90.04
926306-0026	Inner, 55/50				1	109.61
926252-0021	Tube, 29/42				1	29.61
926252-0022	Tube, 34/45				1	37.19
926252-0023	Tube, 40/50				1	47.23
926252-0025	Tube, 50/50				1	61.21
926252-0026	Tube, 55/50				1	67.54



926035

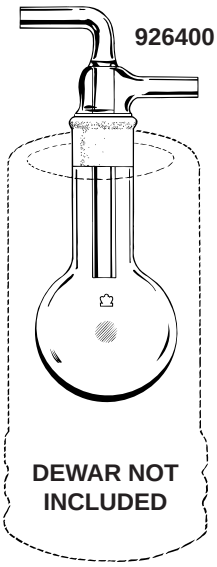


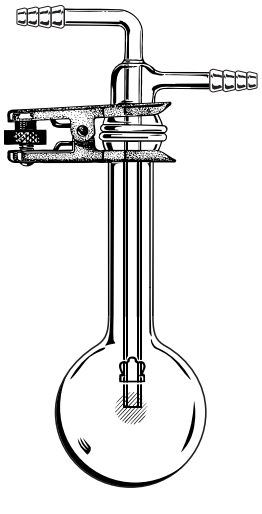
926050

Trap

Connections are 180° apart for easy installation into a variety of vacuum systems. Protects the mechanical pump from attack by corrosive vapors which can be condensed by using liquid nitrogen or dry ice/slurry mixtures.

Kontes Article No.	Tubing O.D. (mm)	Body O.D. x Height (mm)	Approx. Overall Height x Width (mm)	Case Qty.	Case Price
926050-0021	10	25 x 200	260 x 105	1	52.98
926050-0022	13	30 x 225	300 x 125	1	55.45
926050-0023	16	35 x 250	315 x 130	1	59.25





926055

Trap, Large Volume

Designed for large volume solvent removal by vacuum. Connections accept standard flexible 1/2" hose.

Kontes Article No.	**Flask Cap. (mL)**	**Vacuum Connections**	**Joints**	Approx. Overall Height x Width (mm)	Case Qty.	Case Price
926400-0500	500	1/2"	40/35	305 x 130	1	123.32
926400-1000	1000	1/2"	40/35	335 x 130	1	133.12
Component Parts						
926401-0500*	Inner, 40/35				1	79.61
926402-0500	Flask, 40/35, 500 mL				1	44.63
926402-1000	Flask, 40/35, 1000 mL				1	53.92

* Also fits the 1000 mL flask.

Trap

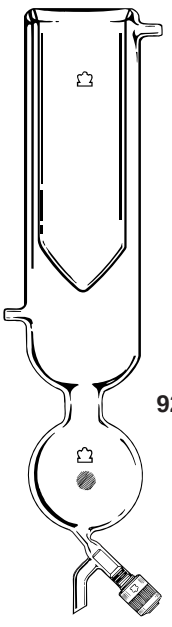
Designed for large volume solvent removal by vacuum. O-ring joint provides a vacuum-tight grease-free seal and permits the trap body to be easily disconnected from the stopper for cleaning. Hose connections are #3.

Kontes Article No.	**Flask Cap. (mL)**	**Fits Dewar Flask Size**	**Approx. Overall Height x Width (mm)**	**Case Qty.**	**Case Price**
926055-0500	500	1900	360 x 130	1	202.43

Trap, Large Volume Dewar-Type

For large volume solvent removal. Inner chamber is for use with dry ice/acetone. Outer chamber connections accept standard flexible 1/2" hose. Lower reservoir has a condensate removal port with a 0-4 mm HI-VAC® valve. PTFE plug is 826601-0004.

Kontes Article No.	Reservoir Cap. (mL)	Vacuum Connection	Inner Chamber Approx. I.D. x Depth (mm)	Approx. Overall Height x Width (mm)	Case Qty.	Case Price
926910-0250	250	1/2"	59 x 230 mm	440 x 145 mm	1	296.23
926910-0500	500	1/2"	75 x 275 mm	515 x 170 mm	1	484.14
926910-1000	1000	1/2"	95 x 330 mm	645 x 190 mm	1	512.86



926910

EPA Screw Thread Vials

Clear and amber screw thread EPA vials for the collection and storage of water samples comply with the guidelines for establishing test procedures for the analysis of pollutants (Ref. EPA Methods 601, 602, 603 and 604).

Clear EPA vials are fabricated from KG-33 borosilicate glass. Amber EPA vials, for light sensitive solutions, are fabricated from amber 203 borosilicate glass.

Open top closures and PFTE-faced silicone septa or solid top PFTE-faced white rubber-lined closures are available separately.

While vials are not "pre-cleaned", they are packaged in a plastic shrink wrap module lehr-clean as they come from the end of the production lehr. They are then placed into a corrugated shelf-pack.



60958A

EPA Water Analysis, Screw Thread, KG-33 Borosilicate Glass, without Closure

Kimble Article No.	Cap. (mL)	O.D. (mm)	Length (mm)	GPI Thread Finish	Shelf-Pack Qty.	Case Qty.	Case Price
60958A-4	20	28	57	24-400	144	432	220.82
60958A-6	30	28	70	24-400	144	432	254.01
60958A-912*	40	28	95	24-400	144	432	260.42
60958A-11	45	28	108	24-400	144	432	276.06
60958A-16	60	30	123	24-400	144	432	285.67

* EPA 40 CFR 136 "Guidelines for Establishing Test Procedures for the Analysis of Pollutants" and EPA 40 CFR 141 "National Interim Primary Drinking Water Regulations; Control of Trihalomethanes in Drinking Water" and recommends the use of 28 x 95 mm vial for discrete water sampling. KIMBLE also offers the specified open-top closures (73804 and 73806A) as well as the PTFE-faced silicone rubber septum (73818A).



60960A

EPA Water Analysis, Screw Thread, Amber 203 Borosilicate Glass, without Closure

Kimble Article No.	Cap. (mL)	O.D. (mm)	Length (mm)	GPI Thread Finish	Shelf-Pack Qty.	Case Qty.	Case Price
60960A-4	20	28	57	24-400	144	432	264.97
60960A-912*	40	28	95	24-400	144	432	312.47

* EPA 40 CFR 136 "Guidelines for Establishing Test Procedures for the Analysis of Pollutants" and EPA 40 CFR 141 "National Interim Primary Drinking Water Regulations; Control of Trihalomethanes in Drinking Water" and recommends the use of 28 x 95 mm vial for discrete water sampling. KIMBLE also offers the specified open-top closures (73804 and 73806A) as well as the PTFE-faced silicone rubber septum (73818A).



60961C

EPA Water Analysis, Screw Thread, KG-33 Borosilicate Glass, Assembled

Vials include 0.005" PTFE-faced 0.120" silicone rubber septa and **open top white polypropylene closures** attached.

Kimble Article No.	Cap. (mL)	O.D. (mm)	Length (mm)	GPI Thread Finish	Shelf-Pack Qty.	Case Qty.	Case Price
60961C-4	20	28	60	24-400	72	432	637.29
60961C-6	30	28	73	24-400	72	432	673.81
60961C-912	40	28	98	24-400	72	432	680.85

Kimble Brand ACCUFORM® SSR™ Vials

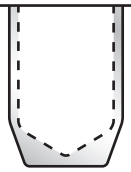
- Smooth, conical interior surfaces facilitate complete sample recovery
- Less than 10 µL of dead space
- Automation Friendly and Ideal for High-Throughput Screening
- Smooth Exterior Bottoms are Perfect for 2D Barcoding
- Large Opening Tops for Easy Access of Contents
- Borosilicate Glass for Chemical Resistance

Kimble Brand ACCUFORM® SSR™ Vials are designed for scientists like you who require reliable storage, retrieval, analysis and delivery of valuable liquid or powder samples. Engineered for consistently high performance in laboratory automation equipment, these vials will help you minimize expensive down time.

Standard Vial



Straight-Sided Vial



ACCUFORM® Conical Bottoms for Maximum Sample Recovery

Standard Vials *(Also referred to as Shoulder Vials)*

Kimble Article No.	Size (mL)	Size (drams)	Dimensions (mm)	GPI Thread Finish	Pack Qty.	Case Qty.	Case Price
60680-12	2	0.5	13 x 39	13-425	250	1000	1,025.00
60680-1	4	1	15 x 45	13-425	250	1000	1,025.00
60680-2	7	2	18 x 60	15-425	250	1000	1,178.75
60680-4	15	4	21 x 70	18-400	250	1000	1,281.25

Straight-Sided Vials *(Also referred to as Shoulderless Vials)*

Kimble Article No.	Size (mL)	Size (drams)	Dimensions (mm)	GPI Thread Finish	Pack Qty.	Case Qty.	Case Price
60690-12	2	0.5	13 x 39	15-425	250	1000	1,025.00
60690-1	4	1	15 x 45	18-400	250	1000	1,025.00
60690-2	7	2	18 x 60	20-400	250	1000	1,178.75
60690-4	15	4	21 x 70	24-400	250	1000	1,281.25

Black Phenolic Caps with PTFE-Faced with White Rubber Liners

Kimble Article No.	GPI Thread Finish	Case Qty.	Case Price
73802-13425	13-425	144	55.93
73802-15425	15-425	144	60.65
73802-18400	18-400	144	83.37
73802-20400	20-400	144	113.67
73802-24400	24-400	144	119.64

Value Added Services Also Available - Just Ask!

- Custom Vials to Your Exact Specifications in Clear or Amber Glass
- Positive ID with Ceramic and Adhesive Label Barcodes with a Range of Symbologies Including Codes 39, 128, I 2 of 5 and 2D Data Matrix
- Barcoding and Tare Weighing
- Pre-Weighed Vials with Supporting Documentation
- Caps and Liners

Vial Packaging

- Barcode and Tare Weighing Compatible
- No Glass-to-Glass Contact
- Polycoated Dividers Minimize Particulate Contamination and Enable Pre-Tare Weighing





60700

Micro-Vial, KG-33 Borosilicate Glass, Screw Thread, Graduated, with Open Top Closure and PTFE-Faced Silicone Septum, Assembled, ACCUFORM®

Kimble Article No.	Cap. (mL)	O.D. (mm)	Length (mm)	GPI Thread Finish	Case Qty.	Case Price
60700-1	1	14	49	13-425	12	100.60
60700-2	2	21	40	20-400	12	105.31
60700-3	3	21	51	20-400	12	107.18
60700-5	5	21	62	20-400	12	117.33
60700-10	10	25	73	24-400	12	134.12



60702

Micro-Vial, KG-33 Borosilicate Glass, Screw Thread, Graduated, with Solid Top Closure and PTFE-Faced White Rubber Liner, Assembled, ACCUFORM®

Kimble Article No.	Cap. (mL)	O.D. (mm)	Length (mm)	GPI Thread Finish	Case Qty.	Case Price
60702-1	1	14	49	13-425	12	100.60
60702-2	2	21	40	20-400	12	105.31
60702-3	3	21	51	20-400	12	107.18
60702-5	5	21	62	20-400	12	117.33
60702-10	10	25	73	24-400	12	134.12



60705

Micro-Vial, Amber 203 Borosilicate Glass, Screw Thread, Graduated, with Open Top Closure and PTFE-Faced Silicone Septum, Assembled, ACCUFORM®

Kimble Article No.	Cap. (mL)	O.D. (mm)	Length (mm)	GPI Thread Finish	Case Qty.	Case Price
60705-1	1	14	49	13-425	12	164.76
60705-2	2	21	40	20-400	12	175.27
60705-3	3	21	51	20-400	12	178.27
60705-5	5	21	62	20-400	12	197.44



60707

Micro-Vial, Amber 203 Borosilicate Glass, Screw Thread, Graduated, with Solid Top Closure and PTFE-Faced White Rubber Liner, Assembled, ACCUFORM®

Kimble Article No.	Cap. (mL)	O.D. (mm)	Length (mm)	GPI Thread Finish	Case Qty.	Case Price
60707-1	1	14	49	13-425	12	164.76
60707-2	2	21	40	20-400	12	175.27
60707-3	3	21	51	20-400	12	178.27
60707-5	5	21	62	20-400	12	197.44



60715

Micro-Vial, Amber 203 Borosilicate Glass, Screw Thread, Ungraduated, with Open Top Closure and PTFE-Faced Silicone Septum, Assembled, ACCUFORM®

12x32 mm size is designed for use with Varian and other autosamplers.

Kimble Article No.	Cap. (mL)	O.D. (mm)	Length (mm)	GPI Thread Finish	Case Qty.	Case Price
60715-110	0.1	12	32	8-425	12	138.57
60715-310	0.3	14	36	13-425	12	149.28
60715-1	1	14	49	13-425	12	156.48
60715-2	2	21	40	20-400	12	166.47
60715-3	3	21	51	20-400	12	169.35
60715-5	5	21	62	20-400	12	187.62

Micro-Vial, Autosampler, KG-33 Borosilicate Glass, Screw Thread, Ungraduated, with Open Top Closure and PTFE-Faced Silicone Septum, Assembled, ACCUFORM®

12x32 mm size is designed for use with Varian and other autosamplers.

Kimble Article No.	Cap. (mL)	O.D. (mm)	Length (mm)	GPI Thread Finish	Case Qty.	Case Price
60710-110	0.1	12	32	8-425	12	98.22
60710-310	0.3	14	36	13-425	12	91.64
60710-1	1	14	49	13-425	12	95.59
60710-2	2	21	40	20-400	12	99.09
60710-3	3	21	51	20-400	12	101.82
60710-5	5	21	62	20-400	12	112.56
60710-10	10	25	73	24-400	12	128.61



60710

Micro-Vial, KG-33 Borosilicate Glass, Aluminum Seal, Graduated, without Closure, ACCUFORM®

Kimble Article No.	Cap. (mL)	O.D. (mm)	Length (mm)	A/S Finish (mm)	Case Qty.	Case Price
60720-1	1	14	49	13	12	100.02
60720-2	2	21	40	20	12	105.85
60720-3	3	21	51	20	12	106.73
60720-5	5	21	62	20	12	117.32



60720

Autosampler, KG-33 Borosilicate Glass, Aluminum Seal, Ungraduated, without Closure, ACCUFORM®

12x32 mm size designed for use with Hewlett-Packard and other autosamplers.

Kimble Article No.	Cap. (mL)	O.D. (mm)	Length (mm)	A/S Finish (mm)	Case Qty.	Case Price
60730-310	0.3	14	36	13	12	89.14

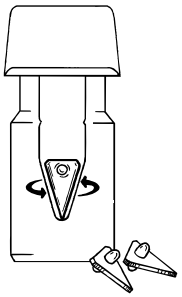


60730

Magnetic Stir Vane, V-Shaped, PTFE, for ACCUFORM® Vials

Magnet is molded in PTFE with a conical shape to fit MICROFLEX™ vials. Design prevents “spin-out” and assures good mixing and vortexing. Useful in performing micro titrations and maintaining good suspensions.

Kontes Article No.	Fits ACCUFORM Vials (mL)	Case Qty.	Case Price
749060-0000	0.3, 1	6	53.85
749060-0003	2, 3, 5	6	63.80



749060

Mininert® Valve for ACCUFORM® Vials

A push-pull, color-coded, green-for-open, red-for-closed position valve for easy use and long lasting performance. Excellent for sealed tube reactions, long term storage of standards, or periodic addition of reactants. Contents are accessible with a syringe needle. Septum seal prevents leakage when using a syringe. Vial not supplied.

Kontes Article No.	GPI Thread	Fits ACCUFORM Vials (mL)	Case Qty.	Case Price
749110-0021	13-425	0.3, 1	1	13.27
749110-0022	20-400	2, 3, 5	1	10.94

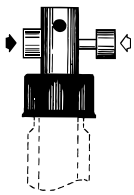
Replacement Parts

749112-0000	Septa, Pkg./50	50	59.94

Mininert is a registered trademark of Dynatech.



749110



Push-Pull Operation

Rack, Polypropylene

Disposable polypropylene vial rack is lettered and numbered for indexing individual tubes. Corners interlock for convenient stacking.

Kontes Article No.	Hole Diameter x Depth (mm)	Case Qty.	Case Price
749210-0012	12 x 15	10	58.22
749210-0016	16 x 18	10	65.88



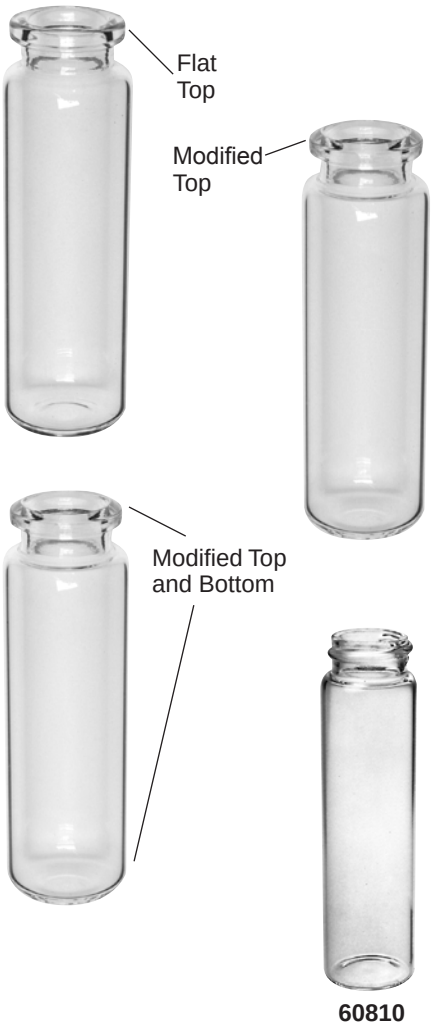
749210



12 x 32 mm Vials



15 x 45 mm Vials



60810

Autosampler, Chromatography, Screw Thread, Clear and Amber, without Closures

Made of the highest quality materials, Chase brand vials meet or exceed industry specifications and tolerances. These products are available in a variety of standard sizes and finishes, or may be specified for non-standard requirements.

Autosampler Vials

Vials are made from clear, Type 1 borosilicate, 33 expansion glass or amber, Type 1, borosilicate, 51 expansion glass for light sensitive applications. Vials are packed 100 per tray. Vials with large opening and/or marking spot are also available. Closures are not included.

Clear Vials

Chase Article No.	Size OD x H (mm)	Finish	Pack Qty.	Case Qty.	Case Price
90G331232C	12 X 32	Crimp	100	2000	331.52
90G331232CL	12 X 32	Crimp Large Opening	100	2000	352.24
90G331232CLW	12 X 32	Crimp Large Opening with Marking Spot	100	2000	372.96
90G331232S	12 X 32	Screw Thread, 8-425	100	2000	372.96
90J331545SW	15 X 45	Screw Thread, 13-425, with Marking Spot	100	2000	518.00

Amber Vials

Chase Article No.	Size OD x H (mm)	Finish	Pack Qty.	Case Qty.	Case Price
90G511232CA	12 X 32	Crimp	100	2000	393.68
90G511232CLA	12 X 32	Crimp Large Opening	100	2000	414.40
90G511232CLAW	12 X 32	Crimp Large Opening	100	2000	414.40
90J511545SA	15 X 45	Screw Thread, 13-425	100	2000	518.00
90J511545SAW	15 X 45	Screw Thread, 13-425, with Marking Spot	100	2000	559.44

Autosampler, Headspace, 20 mm, Clear

Clear glass vials with 20mm crimp seal finish are designed to fit most headspace autosamplers. Headspace vials meet or exceed OEM specifications. Flat top vials have traditional flat finish on top and bottom to maximize heating efficiency.

The beveled edge finish features a sturdy rim that presses into the septum for a more effective seal. Round bottom vials distribute the internal pressure created at high temperatures across the glass surface and are more easily handled by robotic arms that lift the vial from the tray.

Chase Article No.	Style	Size OD x H (mm)	Finish	Pack Qty.	Case Qty.	Case Price
90S332375	Flat Top	23 X 75	20mm A/S	100	1000	290.08
90S332346B	Modified Top	23 X 46	20mm A/S	100	1000	238.28
90S332375B	Modified Top	23 X 75	20mm A/S	100	1000	269.36
90S332375BMB	Modified Top and Bottom	23 X 46	20mm A/S	100	1000	269.36

Sample, Screw Thread, Clear KG-33 Borosilicate Glass, without Closure

The 4 mL vial can be used with the Waters 48-Position autosampler.

Kimble Article No.	Cap. (mL)	O.D. (mm)	Length (mm)	GPI Thread Finish	Shelf-Pack Qty.	Case Qty.	Case Price
60810-1760	8	17	60	15-425	200	1000	275.69
60810-1965	12	19	65	15-425	200	1000	348.18
60810-2170	16	21	70	18-400	200	1000	408.71
60810-2385	20	23	85	20-400	200	1000	469.58

Sample, Screw Thread, Clear KG-33 Borosilicate Glass, Short Style, without Closure

Short style vials allow for greater stability.

Kimble Article No.	Cap. (mL)	O.D. (mm)	Length (mm)	GPI Thread Finish	Shelf-Pack Qty.	Case Qty.	Case Price
60810-1528	2	15	28	13-425	200	1000	332.87
60810-1940	6	19	40	15-425	200	1000	387.81



60810
(Short Style)

Sample, Screw Thread, Amber 203 Borosilicate Glass, without Closure

The 4 mL vial can be used with the Waters 48-Position autosampler.

Kimble Article No.	Cap. (mL)	O.D. (mm)	Length (mm)	GPI Thread Finish	Shelf-Pack Qty.	Case Qty.	Case Price
60815-1760	8	17	60	15-425	200	1000	405.55
60815-1965	12	19	65	15-425	200	1000	490.14



60815

Sample, Screw Thread, Amber 203 Borosilicate Glass, with Rubber Lined Closure (Not Attached)

Kimble Article No.	Cap. (drams)	O.D. (mm)	Length (mm)	GPI Thread Finish	Shelf-Pack Qty.	Case Qty.	Case Price
60920D-4	4	21	70	18-400	144	1152	568.46
60920D-8	8	25	95	22-400	144	576	350.77



60920D

Sample, Screw Thread, Clear KG-33 Borosilicate Glass, Assembled with PTFE-Silicone Septa, and Open-Top Polypropylene Closures (Attached)

Kimble Article No.	Cap. (mL)	O.D. (mm)	Length (mm)	GPI Thread Finish	Case Qty.	Case Price
60942A-8	8	17	63	15-425	144	139.52
60942A-12	12	19	67	15-425	144	157.28
60942A-16	16	21	72	18-400	144	112.95
60942A-24	24	23	87	20-400	144	147.27
60942A-40	40	28	98	24-400	72	75.25



60942A

Sample, Screw Thread, Clear N-51A Borosilicate Glass, without Closure

Kimble Article No.	Cap. (drams)	O.D. (mm)	Length (mm)	GPI Thread Finish	Shelf-Pack Qty.	Case Qty.	Case Price
60957-1	4	28	57	24-400	72	720	485.23
60957-4	11	28	108	24-400	72	432	481.95



60957

Sample, Screw Thread, Clear N-51A Borosilicate Glass, with Polyvinyl-Faced Pulp Lined Closure (Not Attached)

Kimble Article No.	Cap. (drams)	O.D. (mm)	Length (mm)	GPI Thread Finish	Shelf-Pack Qty.	Case Qty.	Case Price
60957C-4	4	28	57	24-400	144	432	198.73
60957C-6	6	28	70	24-400	144	432	208.27
60957C-11	11	28	108	24-400	144	432	214.34

Sample, Screw Thread, Clear N-51A Borosilicate Glass, with Rubber Lined Closure (Not Attached)

Kimble Article No.	Cap. (drams)	O.D. (mm)	Length (mm)	GPI Thread Finish	Shelf-Pack Qty.	Case Qty.	Case Price
60957D-4	4	28	57	24-400	144	432	234.85
60957D-6	6	28	70	24-400	144	432	246.70
60957D-11	11	28	108	24-400	144	432	262.68



60957C
60957D



60910



60910C



60910D



60910L



60940A



60940D

Sample, Screw Thread, Clear N-51A Borosilicate Glass, without Closure

Kimble Article No.	Cap. (drams)	O.D. (mm)	Length (mm)	GPI Thread Finish	Shelf-Pack Qty.	Case Qty.	Case Price
60910-1	1	15	45	13-425	144	3456	699.25
60910-2	2	17	60	15-425	144	2160	605.76
60910-3	3	19	65	15-425	144	1728	589.66
60910-4	4	21	70	18-400	144	1152	517.44
60910-6	6	23	85	20-400	144	864	515.17
60910-8	8	25	95	22-400	144	864	530.82

Sample, Screw Thread, Clear N-51A Borosilicate Glass, with Polyvinyl-Faced Pulp Lined Closure (Not Attached)

Kimble Article No.	Cap. (drams)	O.D. (mm)	Length (mm)	GPI Thread Finish	Shelf-Pack Qty.	Case Qty.	Case Price
60910C-12	0.5	12	35	8-425	144	2304	714.49
60910C-1	1	15	45	13-425	144	2304	601.38
60910C-112	1.5	16	50	13-425	144	2304	666.99
60910C-2	2	17	60	15-425	144	1728	512.95
60910C-3	3	19	65	15-425	144	1152	379.27
60910C-4	4	21	70	18-400	144	1152	435.19
60910C-6	6	23	85	20-400	144	864	351.36
60910C-8	8	25	95	22-400	144	576	254.21

Sample, Screw Thread, Clear N-51A Borosilicate Glass, with Rubber Lined Closure (Not Attached)

Kimble Article No.	Cap. (drams)	O.D. (mm)	Length (mm)	GPI Thread Finish	Shelf-Pack Qty.	Case Qty.	Case Price
60910D-1	1	15	45	13-425	144	2304	675.00
60910D-2	2	17	60	15-425	144	1728	577.49
60910D-3	3	19	65	15-425	144	1152	407.62
60910D-4	4	21	70	18-400	144	1152	474.37

Sample, Screw Thread, Clear N-51A Borosilicate Glass, with Rubber Lined Closure (Not Attached), Lab Pack

Kimble Article No.	Cap. (drams)	O.D. (mm)	Length (mm)	GPI Thread Finish	Shelf-Pack Qty.	Case Qty.	Case Price
60910L-12	0.5	12	35	8-425	72	576	161.17
60910L-1	1	15	45	13-425	72	576	161.17
60910L-2	2	17	60	15-425	72	576	195.72

Sample, Screw Thread, Clear KG-33 Borosilicate Glass, with PTFE Closure Attached

The 16 mL size complies with EPA 600 Series Methods.

Kimble Article No.	Cap. (mL)	O.D. (mm)	Length (mm)	GPI Thread Finish	Case Qty.	Case Price
60940A-2	2	12	35	8-425	144	157.52
60940A-4	4	15	47	13-425	144	116.49
60940A-8	8	17	63	15-425	144	139.30
60940A-12	12	19	67	15-425	144	154.48
60940A-16	16	21	72	18-400	144	176.96
60940A-24	24	23	87	20-400	144	202.73

Sample, Screw Thread, Clear KG-33 Borosilicate Glass, with Rubber Lined Closure (Not Attached)

Economical and saves time in the lab.

Kimble Article No.	Cap. (mL)	O.D. (mm)	Length (mm)	GPI Thread Finish	Shelf-Pack Qty.	Case Qty.	Case Price
60940D-12	2	12	35	8-425	144	2304	835.95
60940D-1	4	15	45	13-425	144	2304	714.60
60940D-2	8	17	60	15-425	144	1728	639.37
60940D-3	12	19	65	15-425	144	1152	434.30
60940D-4	16	21	70	18-400	144	1152	515.51
60940D-6	24	23	85	20-400	144	864	508.37

Scintillation, 20 mL, KG-33 Borosilicate Glass, with Closures Attached

Vials, with caps attached, are packaged in cellular trays having alpha numeric coordinates for fast, easy identification. Each tray contains 100 vials, five trays per case.

Kimble Article No.	Cap Size (mm)	Cap Material	Cap Liner	Case Qty.	Case Price
74500-20	22	urea	cork-backed foil	500	211.93
74504-20	22	polypropylene	pulp-backed foil	500	198.04
74505-20	22	polypropylene	foamed polyethylene	500	182.61
74516-20	22	urea	taperseal cone	500	249.03



74500
74504
74505
74516

Scintillation, 20 mL, KG-33 Borosilicate Glass, Closures Packed Separately, LOVials®(Large Opening Vials)

Vials are packaged in cellular trays of 100 pieces. Wider opening facilitates introduction of large size samples such as filter discs. Trays are shrink wrapped to preserve cleanliness. Closures are packed in polyethylene bags of 100 pieces in a separate tray. Recommended for use on Packard scintillation vial counters.

Kimble Article No.	Cap Size (mm)	Cap Material	Cap Liner	Case Qty.	Case Price
74503-20	24	urea	cork-backed foil	500	211.84



74503

Scintillation, 20 mL, KG-33 Borosilicate Glass, Closures Packed Separately

Vials are packaged in cellular trays of 100 pieces. Trays are shrink wrapped to preserve cleanliness. Closures are packed in polyethylene bags of 100 pieces in a separate tray.

Kimble Article No.	Cap Size (mm)	Cap Material	Cap Liner	Case Qty.	Case Price
74510-20	22	urea	cork-backed foil	500	219.36
74511-20	22	polyethylene	linerless	500	196.85
74512-20	22	polypropylene	pulp-backed foil	500	207.01
74515-20	22	urea	taperseal cone	500	260.71



74510
74511
74512
74515

Scintillation, 20 mL, KG-33 Borosilicate Glass, without Closures

Vials are packaged in cellular trays of 100 pieces. Wider opening facilitates introduction of large size samples such as filter discs. Trays are shrink wrapped to preserve cleanliness. Recommended for use on Packard scintillation vial counters.

Kimble Article No.	Cap Size (mm)	Case Qty.	Case Price
74506-20	22	500	150.95



74506



Value Added - *Vials are packaged in cellular trays having alpha-numeric coordinates for fast and easy identification. Trays are shrink wrapped to preserve cleanliness. Each tray contains 100 vials, five trays per case.*



58500
58504



58510
58511
58512
58515



58501
58510B
58511B

Scintillation, 20 mL, Polyethylene, with Closures Attached

Vials, with caps attached, are packaged in cellular trays having alpha numeric coordinates for fast, easy identification. Each tray contains 100 vials, five trays per case.

Kimble Article No.	Cap Size (mm)	Cap Material	Cap Liner	Case Qty.	Case Price
58500-20	22	urea	cork-backed foil	500	166.88
58504-20	22	polypropylene	pulp-backed foil	500	139.74

Scintillation, 20 mL, Polyethylene, Closures Packed Separately

Vials are packaged in cellular trays of 100 pieces. Trays are shrink wrapped to preserve cleanliness. Closures are packed in polyethylene bags of 100 pieces in a separate tray.

Kimble Article No.	Cap Size (mm)	Cap Material	Cap Liner	Case Qty.	Case Price
58510-20	22	urea	cork-backed foil	500	167.99
58511-20	22	polypropylene	foamed polyethylene	500	127.52
58512-20	22	polypropylene	pulp-backed foil	500	157.41
58515-20	22	urea	taperseal cone	500	216.25

Scintillation, 20 mL, Polyethylene, Closures Packed Separately, KIM-BULK® Packaging

KIM-BULK provides the most economical vial and closure offering. Vials are packed in polyethylene bags of 1000 pieces. Closures are packed separately in polyethylene bags of 1000 pieces.

Kimble Article No.	Cap Size (mm)	Cap Material	Cap Liner	Case Qty.	Case Price
58501-20	22	polypropylene	pulp-backed foil	1000	225.74
58510B-20	22	urea	cork-backed foil	1000	263.68
58511B-20	22	polypropylene	foamed polypropylene	1000	205.76

Scintillation, 7 mL, KG-33 Borosilicate Glass, Closures Packed Separately, SOLVENT SAVER®

Vials are packaged in cellular trays of 200. Trays are shrink wrapped to preserve cleanliness. Closures are packed in polyethylene bags of 200 pieces in a separate tray of a 1000 pieces.

Kimble Article No.	Cap Size (mm)	Cap Material	Cap Liner	Case Qty.	Case Price
74502-7	15	urea	cork-backed foil	1000	334.10
74503-7	15	polypropylene	pulp-backed foil	1000	306.10



74502
74503

Scintillation, 7 mL, Polyethylene, Closures Packed Separately, SOLVENT SAVER®

Vials are designed to fit into 74700 carrier vial, or may be used on their own in some of the newer equipment. Shrink wrapped trays contain 250 each of vials and closures; closures are packed in polyethylene bags. Four trays per case. Dimensions with closures attached are 17 x 57 mm.

Kimble Article No.	Cap Size (mm)	Cap Material	Cap Liner	Case Qty.	Case Price
58502-7	15	polyethylene	—	1000	287.23



58502

Scintillation, 7 mL, Polyethylene, Closures Packed Separately, KIM-BULK® Packaging, SOLVENT SAVER®

Our most economical SOLVENT SAVER offering. Vial is the same as our 58502-7 except in KIM-BULK packs. Vials and closures are packed separately, 1000 per polyethylene bag. Dimensions with closures attached are 17 x 57 mm.

Kimble Article No.	Cap Material	Case Qty.	Case Price
58503-7	polyethylene	1000	174.68

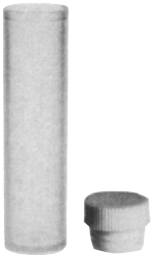


58503

Scintillation, 4 mL, Polyethylene, Closures Packed Separately, KIM-BULK® Packaging, SOLVENT SAVER®

The polypropylene shell vial and linerless polyethylene snap-on closures are packed separately, 1000 per polyethylene bag. Dimensions with closures attached are 14 x 56 mm.

Kimble Article No.	Cap Material	Case Qty.	Case Price
58552-4	polyethylene	1000	137.88



58552

Scintillation Vial Closures



74520

Closure for Scintillation Vial, White Urea

Closure is made from white urea and has cork-backed aluminum foil liner. Closure is not autoclavable. Top is suitable for marking. Caps are packed 100 pieces per plastic bag, 10 bags per case.

Kimble Article No.	GPI Thread Finish	Approx. Case Qty.	Case Price
74520-15425	15-425	1000	101.16
74520-22400	22-400	1000	165.61



74521

Closure for Scintillation Vial, White Polypropylene

Closure is made from white polypropylene and has a pulp-backed aluminum foil liner. Top is suitable for marking. Suitable for use with some strong oxidizing agent scintillation “cocktails”. Closures are packed 100 pieces per plastic bag, 10 bags per case.

Kimble Article No.	GPI Thread Finish	Approx. Case Qty.	Case Price
74521-15425	15-425	1000	68.04
74521-22400	22-400	1000	113.38



74522

Closure for Scintillation Vial, White Polyethylene

Closure is made from white polyethylene and is linerless. Top is suitable for marking. Closures are packed 100 pieces per plastic bag, 10 bags per case.

Kimble Article No.	GPI Thread Finish	Approx. Case Qty.	Case Price
74522-22400	22-400	1000	103.82

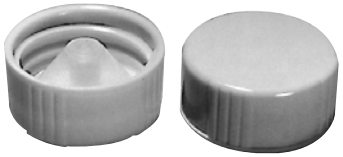


74524

Closure for Scintillation Vial, White Polypropylene

Closure is made from white polypropylene with F-217 liner. Top is suitable for marking. Closures are packed 100 pieces per plastic bag, 10 bags per case.

Kimble Article No.	GPI Thread Finish	Approx. Case Qty.	Case Price
74524-22400	22-400	1000	109.86



74525

Closure for Scintillation Vial, White Urea, Taperseal

Cap is made from white urea and has a polyethylene cone-shaped liner. Top is suitable for marking. Closure is not autoclavable, as the liner may melt. Closures are packed 1000 pieces per plastic bag in a cardboard box.

Kimble Article No.	GPI Thread Finish	Approx. Case Qty.	Case Price
74525-22400	22-400	1000	232.90



74526

Closure for Scintillation Vial, White Urea

Replacement for 74504, 74512, 58501, 58504, and 58512. Closure is made from white urea and has a F-217-PTFE liner. Top is suitable for marking. Suitable for long term sample storage. Closures are packed 100 pieces per plastic bag, 5 bags per case.

Kimble Article No.	GPI Thread Finish	Approx. Case Qty.	Case Price
74526-22400	22-400	500	266.36

Serum vials are lighter in weight than molded bottles. More closely held tolerances and uniformity of glass allow the clear vials to be lyophilized. Sizes range from 2 mL to 30 mL. Enhanced by the most popular GPI aluminum seal finishes, this line offers a variety of choices. Vials are available in KG-33 and amber 203 borosilicate glass.

Autoclavable Kimble serum vials are ideally suited for the handling, containment, and storage of a variety of liquids including reagents, vaccines, blood plasma, culture media, chromatography samples, and more.

Aluminum seals, stoppers and septa are available separately.

Serum Clear KG-33 Borosilicate Glass, Aluminum Seal Finish, Without Closure

Kimble Article No.	Capacity (mL)	O.D. (mm)	Length (mm)	A/S Finish (mm)	Case Qty.	Case Price
62113D-2	2	15	40	13	1440	431.58
62113D-312	3.5	18	45	13	1440	447.56
62121D-5	5	23	47	20	864	307.50
62121D-10	10	25	54	20	864	431.36
62121D-20	20	30	57	20	720	435.21



62113D
62121D

Serum Amber 203 Borosilicate Glass, Aluminum Seal Finish, Without Closure

Kimble Article No.	Capacity (mL)	O.D. (mm)	Length (mm)	A/S Finish (mm)	Case Qty.	Case Price
62413D-2	2	15	40	13	1440	626.42
62421D-5	5	23	47	20	864	384.41
62421D-10	10	25	54	20	864	544.41
62421D-30	30	30	86	20	576	533.68



62413D
62421D

See ***CAPS & CLOSURES*** section for Aluminum Seals, Aluminum Seal Stoppers and Flat Disc Septa.



60931



60831D



60835D



74400



60965

Shell, Clear Plain Top, Short Style, N-51A Borosilicate Glass, Without Closure, Lab Pack

Kimble Article No.	Cap. (drams)	O.D. (mm)	Length (mm)	Shelf-Pack Qty.	Case Qty.	Case Price
60931-14	0.25	9	30	144	1440	209.90
60931-12	0.5	12	35	144	1440	162.42
60931-1	1	15	45	144	1440	238.64
60931-2	2	17	60	144	864	219.66
60931-4	4	21	70	144	576	156.79
60931-6	6	23	85	144	576	190.54
60931-8	8	25	95	144	576	334.80

Shell, Clear N-51A Borosilicate Glass, with White Polyethylene Plug Style Needle Closure (Not Attached), TITESEAL®

Kimble Article No.	Cap. (mL)	O.D. (mm)	Length (mm)	Shelf-Pack Qty.	Case Qty.	Case Price
60831D-830	0.75	8	30	200	2000	297.77
60831D-843	1	8	43	200	2000	294.12
60831D-1231	2	12	31	200	2000	288.36
60831D-1544	4	15	44	200	2000	323.83

Shell, Amber 203 Glass, with White Polyethylene Plug Style Needle Closure (Not Attached), TITESEAL®

Kimble Article No.	Cap. (mL)	O.D. (mm)	Length (mm)	Shelf-Pack Qty.	Case Qty.	Case Price
60835D-843	1	8	43	200	2000	356.38
60835D-1544	4	15	44	200	2000	392.38

Chloride Meter, Disposable

Used as sample container during dilution and titration procedures of chloride determinations. Vials are plastic shrink wrapped in cellular trays to keep them clean and safe in transit. 100 vials per tray.

Kimble Article No.	O.D. (mm)	Length (mm)	Case Qty.	Case Price
74400-2040	20	40	500	94.86

Shell, Clear N-51A Borosilicate Glass, Plain Top, without Closure

Kimble Article No.	Cap. (drams)	O.D. (mm)	Length (mm)	Shelf-Pack Qty.	Case Qty.	Case Price
60965-4	4	24	62	144	576	159.65

Shell, Clear N-51A Borosilicate Glass, Plain Top, with Unattached Open Bottom TITESEAL® Closure

Kimble Article No.	Cap. (drams)	O.D. (mm)	Length (mm)	Shelf-Pack Qty.	Case Qty.	Case Price
60965D-12	0.5	12	35	144	2304	450.32
60965D-1	1	15	45	144	2304	446.02
60965D-3	3	19	65	144	1152	368.08
60965D-7	7	29	65	144	432	228.19
60965D-120	12	29	94	144	432	255.67



60965D

Tooled Neck, N-51A Borosilicate Glass, with Unattached Polyethylene Closure*, OPTICLEAR®

Tooled neck OPTICLEAR vials are fabricated from N-51A borosilicate glass. Necks are tooled for an accurate fit with polyethylene closures. Vials and closures are supplied in both the pack and case quantities. The 1 dram size is supplied with open bottom closures. All other sizes are supplied with closed bottom, two-piece closures. These vials are excellent for packaging drug products.

Kimble Article No.	Cap. (drams)	O.D. (mm)	Length (mm)	Shelf-Pack Qty.	Case Qty.	Case Price
60975L-1	1	15	45	72	864	194.60
60975L-3	3	21	50	72	432	154.79
60975L-4	4	25	52	72	288	127.49
60975L-5	5	27	55	72	216	109.26

* 1 dram size has open bottom stoppers. All other sizes have closed bottom stoppers.



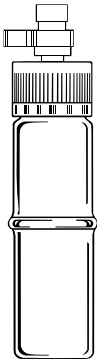
60975L

Hydrolysis / Derivatization Vial, for Proteins and Peptides

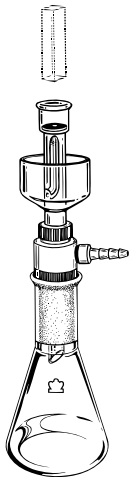
This reaction vial has been designed to interface with the Waters PICO-TAG™ Work Station. It features a PTFE cap with a CTFE screw-type on-off valve. The PTFE flap that makes the cap-to-vial seal is backed up by a FKM o-ring to prevent leaks that could occur through “cold flow” of the PTFE. Vial holds twelve 6 x 50 mm sample tubes. This vial can also be used independently of the PICO-TAG work station as a versatile reaction vial for protein hydrolysis and derivatization.

Kontes Article No.	Approx. Top Port O.D. (mm)	Approx. Overall O.D. x Height (mm)	Case Qty.	Case Price
896820-0000	3	30 x 120	1	179.09

Note: Not Recommended for use over 150°C.



896820



459960

Washer, Utility

Recommended for 10 mm NMR tubes. For rapid, safe washing and drying of cuvettes, cells, tubes and small scale volumetric items up to approximately 22 mm O.D. Operates efficiently on a conventional sink aspirator. Flushing is activated by lightly pressing the inverted cell onto a neoprene gasket. Complete unit is supplied with one gasket.

Kontes Article No.	Vacuum Adapter Joint	Flask Joint	Flask Cap. (mL)	Approx. Overall Height (mm)	Case Qty.	Case Price
459960-0000	24/25	24/40	250	255	1	190.50

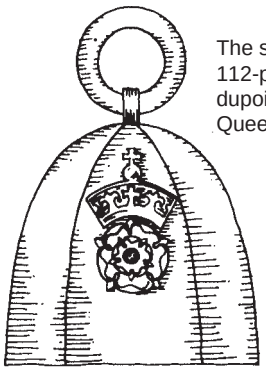
Component Parts

459961-0000	Cuvette Washer Only	1	89.99
459951-0000	Neoprene Gasket, Pkg./12	12	33.49
179850-2224	Vacuum Adapter, Size 22, 24/25	1	74.06
617000-0424	Erlenmeyer Flask, 24/40, 250 mL	1	24.15

Calibration of Volumetric Ware 500-507
Systems of Weights and Measures 500
Gravimetric Calibration 501-503
Calculation from Apparent Weight 504-505
Corrective factors 506-507
Capacities of Volumetric Ware 508-510
For Volumetric Apparatus 508
Standard Temperature for Glass Volumetric Apparatus 508
For Cylindrical Containers 509
Class A and B Tolerances 510
Care and Handling of Glassware 511-514
Cleaning Methods 511
Cleanliness of Apparatus 512
Ground Glass Surfaces 513
HI-VAC® PTFE Valves 513
Recommendations 514
Care and Handling of Volumetric Glassware 515-519
To Contain vs. To Deliver 515
Filling and Emptying 516
Method of Reading the Meniscus 517
Glass Volumetric Apparatus 518
Kimble Glasses for Volumetric Apparatus 518
Drainage Times for Volumetric Glassware 519
Standard Temperature for Glass Volumetric Apparatus 508
Conversion Factors 520-528
Alphabetical Listing of Conversion Factors 520-527
Decimal Equivalents of Fractions of an Inch 528
Liquid Measure 528
Power of Ten Prefixes 528
Units of Capacity 528
Cork and Rubber Stopper Chart and Conversion Table 529
Equations 530
Chromatography Equations 530
Equilibrium Constants 530
Geometric Formulas 530
Henderson-Hasselbalch Equation 530
Physical Constants 530
Glass Properties 531-533
Identification of Kimble Glasses 531
Physical Properties of Glass 531-533
Glossary of Glass Fabricating Terms 534-536
GPI Thread Finishes 537
Ground Ware 538-540
Nomogram of Allowable Pressures 541
Nomogram of Computing Relative Centrifugal Force 542
Properties of Plastics and Elastomers 543-546
Elastomer Codes 545
Elastomer Solvent Compatibility Chart 546
Plastic Resin Codes 543
Plastic Resin Solvent Compatibility Chart 544
Properties of Plastics 543
Sterilization Reference Guide 545
Temperature Conversion Tables 547-548
UV Absorbing Performance 549
Weighing Bottles 550

Fig. 3

Old English Standards of Mass



The standard 112-pound avoirdupois weight of Queen Elizabeth I

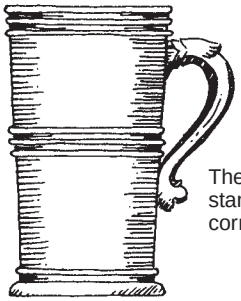




The troy pound of 1758

The exchequer standard avoirdupois pound (bell shape) of Queen Elizabeth I

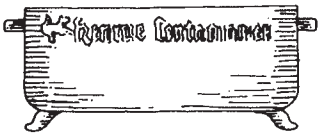
Old English Standards of Capacity



The exchequer standard corn gallon



Exchequer standard wine gallon of Queen Anne



Exchequer standard Winchester bushel of Henry VII

SYSTEMS OF WEIGHTS AND MEASURES

The metric system of weights and measures.
As its name implies, the metric system was intended to be based on the meter, a fundamental unit of length. All of the essential features of the system were contained in a proposal submitted to the French National Assembly in 1791. The metric system thus was originally a national system and was not given international recognition until 1889.

The meter was to be equal to one ten-millionth part of a quadrant of the earth's meridian. The kilogram was to be the mass of a volume of pure water at its temperature of maximum density occupying a space of one cubic decimeter (one one-thousandth of a cubic meter.)

To propose such a system is one thing but to make it practical, material standards are necessary. The French measure of length in 1791 was the "toise" and the actual determination of the meridianal distance was made in terms of it. From the value found, a standard platinum bar was constructed called the "Metre des Archives," and the meter was defined as the length between the centers of the end faces of this bar at the temperature of melting ice.

To determine the mass of a cubic decimeter of water the principle of Archimedes was used, namely, that a submerged body is buoyed up by a force equal to the weight of the water displaced. This was accomplished by hydrostatic weighing of a carefully measured bronze cylinder from which, by comparison, a platinum weight called the "Kilogramme des Archives" was adjusted.

During the years immediately preceding 1889, the metric system was studied exhaustively by an international commission. Redeterminations of the kilogram showed that there was a slight error in the original standard, but it was decided that the International Kilogram should be based on the "Kilogramme des Archives" in its actual state. Thus, the kilogram became a fundamental rather than a derived unit and the definition of the kilogram as the mass of one cubic decimeter of water was abandoned.

The name originally proposed for the volume of one cubic decimeter was liter. Due to the error in the original standard kilogram, it was decided in 1901 to redefine the liter in terms of the International kilogram. This definition was used until the Twelfth General (International) Conference on Weights and Measures.

The delegates to this conference decided to redefine the liter as a "special name for the cubic decimeter." It was agreed that the terms "liter," "milliliter" and "mL" might be continued, except in association with measurements of the highest precision, where "cubic centimeter" or "cm^3" must be used.

The difference in volume between the old and the new meanings of liter is so small as to be negligible in most technical work, being less than 3 parts in 100,000. Hence, it can be expected that volumetric apparatus will continue to be marked with the familiar "liter" or "milliliter" for some time to come.

United States and British Weights and Measures.
The basic units of the United States and British systems have been officially defined in terms of metric equivalents. In glass volumetric apparatus the units of liquid measure only are of importance.

GRAVIMETRIC CALIBRATION

When temperature corrections are not made to the results obtained in volumetric work, it is seldom necessary to know the capacity of a vessel more closely than the guaranteed tolerances. However, more precise values can be obtained in the laboratory by careful calibration, and directions are given on the following pages for determination of capacity to this higher degree of precision.

The liquid regularly used by the National Bureau of Standards for calibration of apparatus is distilled water. Accordingly, manufacturers base their testing methods also on distilled water, except where some particular liquid such as mercury for calibration is described. Calibration by weighing the quantity of water delivered is recommended for apparatus made to deliver the contents through a tip such as burets and pipets. In the case of volumetric flasks, cylinders and similar containers, gravimetric calibration is preferred, although volumetric methods may be used when quantities of glassware are to be checked.

The balance must be mounted in such a way as to damp out external vibrations. The temperature of the liquid must be known accurately enough to eliminate errors from this cause. The precision needed in the temperature measurement depends on the volume of the vessel. For small articles, the nearest 1°C is usually sufficient, while for a 1 liter flask, it may be necessary to know the temperature to the nearest 0.1°C.

The empty object to be calibrated, or the receiver into which water from the instrument being calibrated is to be delivered, is placed on one pan of the balance, and weighed. The container is filled and reweighed. The difference is the apparent weight of the liquid. This apparent weight must be corrected in order to obtain the volume at 20°C. The method of doing so will be described later.

The best type of receiver for water delivered from a buret or pipet is a flat-bottomed flask. Use a tight fitting rubber stopper from which all loose particles have been removed by scrubbing with 1% sodium pyrophosphate and rinsing well. When the balance has hooks at the top of the bows, it will be found convenient to hang the vessel, such as a “to contain” (IN) pipet, from a hook. If there is no hook, then it may be necessary to rest the vessel or pipet on a saddle placed on the pan.

Care must be exercised in handling the receivers to prevent moisture or grease from the fingers from being deposited on the outside. Wiping of the outside with a cloth is sometimes necessary, but in doing so surface moisture may be removed or an electrical charge may be produced on the surface. Usually about 30 minutes are required to restore the surface moisture so that it is in equilibrium with the room. Static electricity will dissipate itself in time, and frequently can be discharged by touching the glass to a clean dry conductor.

With experience, settings of menisci of water or mercury at a line can be made easily to within one-tenth of a millimeter, without using anything to assist the eye. However, many observers prefer to have some magnification. Small telescopes with short focal lengths are available which can be clamped to the glass. An ordinary reading glass of 4x or 6x magnification will also serve.

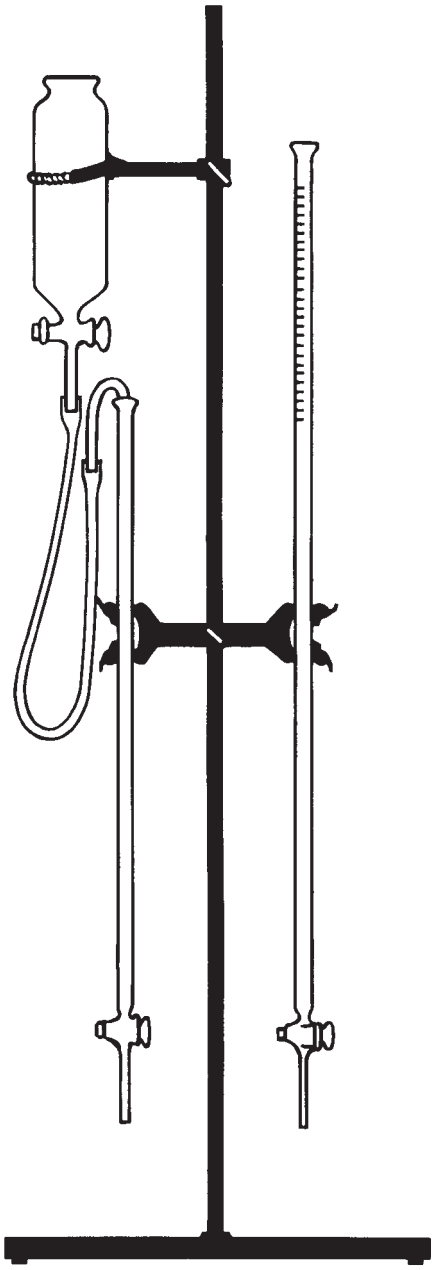


Fig. 8

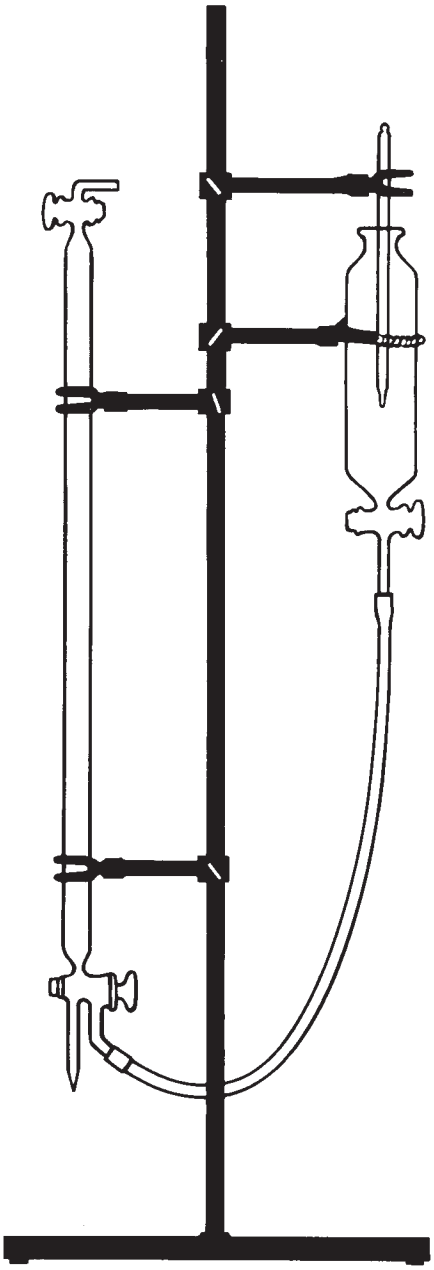


Fig. 10

GRAVIMETRIC CALIBRATION

1. CALIBRATION WITH MERCURY

Figure 10 shows a set up for gravimetric calibration of a buret using mercury. Great care is needed in setting up the assembly to prevent errors. Heavy walled rubber tubing must be used and good butt joints are essential to prevent bulging of the rubber by the weight of mercury. The buret portion must be held rigidly by clamps. Air bubbles in the mercury must be avoided or removed and temperature changes prevented. It is desirable also to have a large capacity balance to weight the mercury.

The buret illustrated is a Universal Measuring Tube for the DuPont Nitrometer. It consists of a cylindrical tube having a hose connection at the bottom and a straight stopcock at the top. Above the stopcock there is a bent capillary tube. The 0 of the scale is at the juncture of stopcock plug and the cylindrical tube, and the total capacity is between this point and a line near the bottom of the cylindrical tube.

Mercury is contained in the reservoir, made from a separatory funnel, at the right in Figure 10 and is transferred to the buret through the three-way stopcock attached to the bottom of the buret. The delivery stem of the three-way stopcock should have a tapered tip. A thermometer is placed in the reservoir.
The stopcock of the reservoir is kept open after the setup has been completed and all manipulation is performed with the two stopcocks attached to the buret.

With the top stopcock open, mercury is run into the buret part way and some is drawn off to expel air from the tip. Then the buret is filled until a little mercury appears in the bore of the upper plug. Both stopcocks are closed, the temperature read and the receiver placed under the delivery stem. The plug of the upper stopcock is removed and mercury run out down to the line being checked. All observations start at the 0 point.

If the volume delivered is large enough for the bulb of the thermometer to be completely immersed in the receiver, the temperature can be obtained in this way. Before replacing the top stopcock plug any mercury in the bore must be removed. It is not necessary to empty the buret completely after each delivery. Enough is drawn off, so that the level is below the next line to be checked. Then the new mercury introduced can be assumed to be that which will be drawn off for this next check and that it will have, very closely, the temperature of the reservoir.

Calibration with mercury is the preferable for microliter pipets because of the very small mass involved. The Kirk type pipets are calibrated “to contain” (IN) with a ±0.2 to 1.0% tolerance depending on their volume, whereas the Lang-Levy type are calibrated “to deliver” (EX) with a ±5% tolerance.

There are many varieties of graduated tubes requiring mercury calibration. If there is a three-way stopcock at the bottom, one side of this can be connected directly to the reservoir.

When small flasks or similar objects are being calibrated, the mercury is contained in a beaker and carefully poured into the instrument. Air bubbles must be excluded or removed. The temperature of the mercury in the beaker is used.

The procedure to be followed to obtain the volume of the vessel from the apparent weight of the mercury is given later.

CAUTION: Do not breathe mercury fumes for longer periods of time than is absolutely necessary. Clean up all mercury spills immediately after they occur. If mercury has spilled onto clothing, clean thoroughly as soon as possible.

GRAVIMETRIC CALIBRATION

2. CALIBRATION WITH WATER

Burets

When determining the capacity of a buret, the water should always be run out from the 0 mark to the line to be checked. This is the method used by manufacturers in producing burets. Values are obtained for at least five points (every 10 mL on a 50 mL and many laboratories calibrate at ten points to further assure accuracy.

The buret and a plain glass tube of about the same length are clamped vertically on a stand as shown in Figure 8. A thermometer is placed in the plain tube, whose diameter should be somewhat greater than that of the buret so that it will hold about the same volume of water when the thermometer is immersed in it.

A water reservoir, which can be made from a cylindrical separatory funnel, is useful. By keeping a supply of distilled water in it, the water will be near the temperature of the room when needed. Rubber hose is attached to the stem of the funnel and a bent glass tube is inserted into the free end of the hose. Water is easily conveyed to the two tubes in this way. For occasional calibration, a beaker of distilled water will serve.

The first operation is the filling of the two tubes several times and emptying through the stopcocks, in order to bring the tubes to the temperature of water and room. They are both refilled and allowed to stand for about 30 minutes to check for leakage, not only at the tip, but also around the stopcock plug. Then both are filled again, with the level of water in the buret about 10 mm above the 0 mark. Any water on the outside of the buret tip is removed with clean filter paper. Then the water in the buret is lowered slowly to a setting at the 0 line. After setting has been made, any water on the outside of the tip is touched-off against the wet side of the container. The temperature of the water is observed just after setting the water at the 0 line.

The receiver, which is kept stoppered except when actually delivering water into it, is brought under the buret tip and delivery started. The stopcock should be completely open. Keep water from splashing up into the neck or onto the tip of the buret by inclining the receiver at an angle of about 20° and touching the receiver with the buret tip, being sure, however, that no water touches the side of the neck in the region covered by the stopper. Otherwise an error may be introduced in subsequent determinations made with the same receiver due to evaporation from the stopper when it is removed to allow another delivery to be made.

When the water has descended to a few mm above the line to be checked, delivery is slowed down in order to set the meniscus accurately. After setting is completed, the tip is removed horizontally from the receiver to secure any water on the outside of the tip, and the receiver removed and stoppered.

As soon as a delivery has been made, empty buret and thermometer tube and refill both, with water level in buret above 0 mark. Balance receiver, record weight, obtain volume as directed later on, and proceed to deliver next volume into receiver, using the same technique as given above.

Note that the thermometer tube is handled in the same manner as the buret, to insure that water of the same temperature will be in both. With burets of sufficient diameter, such as the standard 50 mL and 100 mL types, the thermometer tube may be dispensed with and the thermometer inserted in the top of the buret itself. If this is done, the thermometer is read just before delivery and removed, more water being added if necessary to raise the level in the buret above the 0 mark. Then the procedure of setting to 0 and delivering into the receiver is the same as described originally.

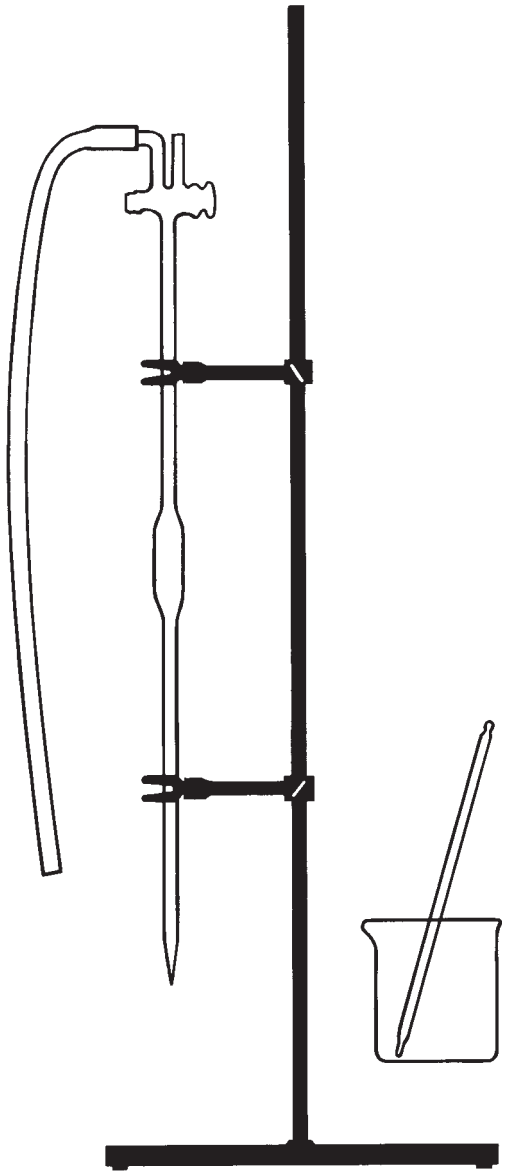


Fig. 9

CALCULATION FROM APPARENT WEIGHT

1. CALIBRATION WITH WATER

The true capacity of a glass vessel at a standard temperature can be obtained from the apparent weight of the liquid container or delivered at any other temperature. To do this, it is necessary to take into account four factors for single pan balances having built in weights — the buoyant effect of the air on the liquid and weights; change of density of the liquid; change of volume of the glass with temperature; and the apparent mass of the built-in weights as compared to their true mass. Details for this deviation of these corrective factors are covered in N.B.S. IR 74-461, "The Calibration of Small Volumetric Laboratory Glassware".

Buoyant Effect
When a body is weighed in air, it does not weigh the same as it would in a vacuum, because both the weights and the body itself are buoyed up by the air. This is in accordance with the principle of Archimedes, which states that any body immersed in a gas or a liquid is pushed upward by a force equal to the weight of an equal volume of the gas or liquid.

The density of air varies according to the height above sea level and even in any one place from time to time depending on the weather. As a result, the apparent weight of a volume of water also may vary due to changes in the forces acting on it and on the weights. In order to be able to compare weighings, it is necessary to take into account changes in the density of air. The best solution is to calculate the net upward thrust at the time of weighing and add it to the apparent weight. The result is the true weight and is the same as if the weighing actually had been made in a vacuum ("in vacuo"). Since this establishes all weighings on a common basis, the results of several weighings at different times or places can be compared.

For very accurate calibration of volumetric glassware the actual density of the air at the time of weighing is determined. However, if it is assumed that the barometer reading is 760 mm, the relative humidity is 50% and the carbon dioxide in the air is 0.04% by volume, then densities of air for various temperatures calculated on this basis will be sufficiently accurate for most purposes. Further assumptions usually made are that the air and the liquid are at the same temperature and that weighings are made with brass weights having a density of 8.4 grams per mL. The difference between the mass and the apparent weight of one mL of water is called the buoyancy constant.

This constant multiplied by the volume of water expressed in milliliters is the buoyancy correction and it must be added to the apparent weight of a volume of water to get the true mass of the water. The exact volume may not be known, but the use of the approximate or nominal value will not introduce any significant error.

Change of Density of the Water
The volume of a liquid at any temperature is equal to its mass divided by the mass of one mL of the liquid at that temperature. The maximum weight of one mL of water is one gram at 4°C. At all other temperatures water is lighter, and, consequently, at the volume is a larger number than the mass. The difference between volume and mass for one mL at any temperature is equal to one minus the density at that temperature.

If this difference is multiplied by the nominal volume of water, a density correction is obtained which can be added to the mass of the water to give the actual volume of the glass vessel at the temperature of weighing. Here, too, the nominal volume can be used to determine the correction.

Change in Volume of Glass
Glass also changes volume with temperature change. To find the capacity of a glass vessel at the standard temperature from its capacity at the temperature of weighing, use the following formula:

$$V_T = V_{20} (1 + \alpha (T_T - T_{20})$$

Where V_{20} = capacity at standard T_{20},
V_T = capacity at temperature of weighing T_T, and
α = cubical coefficient of expansion of the glass.

$1 + \alpha (T_T - T_{20})$ = the temperature correction of the glass vessel.

To obtain it, the nominal capacity can be used for V_T, without introducing an appreciable error.

Apparent Mass of Built-In Weights
When, under specified ambient conditions, an unknown object exerts the same force on a balance as the mass of a specified hypothetical reference material, the object is said to have an apparent mass versus the reference material. The specified ambient conditions are 1) temperature = 20°C, and 2) air density = 0.0012 g/cm^3. The hypothetical reference material is completely specified by its density at 20°C. For the older apparent mass scale, this specified density at 20°C, D_{20} is 8.3909 g/cm^3, and for the more recent scale, 8.0. (Quotation from NBS IR 74-461.)

CORRECTION TABLES FOR KG-33 AND R-6 WHEN SINGLE PAN BALANCES ARE USED

Tables 4, 5, & 6 give the sum of all four corrections — buoyant effect, water density, glass expansion, and apparent mass of built-in weights. Table 4 is to be used for KIMAX apparatus, made of KG-33, borosilicate glass (ASTM E- 438, Type I Class A); Table 5 is for apparatus made of Kimble soda lime glass (ASTM E438, Type II); and Table 6 is for apparatus made of Kimble borosilicate glass KG-35 or N51A (ASTM E438, Type I, Class B). The example below illustrates the use of the Tables.

a) Nominal Capacity of vessel (KG-33 Glass) = 25 mL

b) Temperature of weighing = 22.5°C

c) Barometric Pressure of weighing = 760 mm Hg.

d) Weight recorded on balance before filling receiver = 28.841 g.

e) Weight recorded on balance after filling receiver = 53.761 g.

f) Apparent or hypothetical weight of water at 22.5°C and 760 mm Hg (e – d) = 24.920 g.

g) Corrective factor at 22.5°C and 760 mm Hg from Table 4

$$\frac{1.00327 + 1.00349}{2} = 1.00338 \text{ g.}$$

h) Volume of vessel at 20°C and 760 mm Hg. (f x g) = 25.004 mL

ERRORS CAUSED BY USING TABLES 4, 5 AND 6 WITHOUT CORRECTING FOR ACTUAL CONDITIONS

The size of errors introduced into calibrations by ignoring actual air conditions and glass expansion is indicated below.

Variation in Density of the Air
TEMPERATURE. For each 1°C difference between air and water temperatures, the error is to 0.004 mL per liter. Volumes will be too large when the air is hotter than the water, and vice versa.

PRESSURE. For each 10 mm that the barometer departs from 760 mm, the error amounts to 0.014 mL per liter. Volumes will be too small if the actual pressure is greater than 760 mm, and vice versa.

RELATIVE HUMIDITY. If the relative humidity differs from 50%, errors of 0.001 to 0.004 mL per liter may occur, depending on the actual humidity and temperature.

Expansion of Glass
For each 0.000001 change in the cubical coefficient of expansion, the change in corrections amounts to 0.001 mL liter/1°C. The effect of this on the calculated volume at 20 °C is shown in Table 7.

CALCULATION FROM APPARENT WEIGHT

2. CALIBRATION WITH MERCURY USING TWO-PAN BALANCES

When calibrating with mercury, always do so in a well-ventilated area to prevent the accumulation of dense, potentially dangerous mercury vapors. Do not breathe mercury fumes for longer periods of time than is absolutely necessary. Clean up all mercury spills immediately, including clothing.

The mechanism for obtaining the capacity of a vessel at 20°C from the apparent weight of mercury it contains at some other temperature is as follows:

Divide the apparent weight by the density of mercury (mass of one milliliter) at the temperature of weighing. Add to the result, corrections for the buoyant effect of the air for the expansion of the glass; and for the apparent mass of the built in weights.

Densities of mercury at various temperatures are given in Table 8. Values of the combined buoyancy, glass and weight corrections are found in Table 9. The following example will illustrate the use of the Tables:

a) Nominal volume of vessel (KG-33 Glass) = 10 mL
b) Temperature of weighing = 23°C
c) Apparent or hypothetical weight of 10 mL of mercury = 135.68 grams
d) Density of 1 mL of mercury at 23°C (from Table 8) = 13.5385 grams/mL
e) Apparent or hypothetical weight ÷Density (c ÷ d) = 10.0218
f) Corrective additive factor for KG 33 glass at 23°C (from Table 9) x 10 = 0.0008
g) Volume of glass vessel at 20°C (e + f) = 10.0210 mL

VOLUMETRIC CALIBRATION & VOLUMETRIC STANDARDS

Just as in gravimetric calibration, cleanliness of all vessels to be calibrated and of the standards used is necessary for accuracy in volumetric calibration.

It was mentioned before that burets and pipets should be calibrated gravimetrically when accurate results are wanted. The occasional small flask also can be handled best by a gravimetric method. If large quantities of flasks or similar items are to be checked, vacuum standards similar to those developed by the National Bureau of Standards will be useful. Figure 11 illustrates this type of standard.

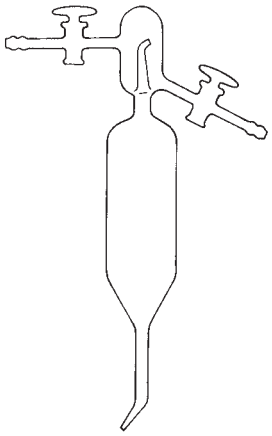


Fig. 11



Fig. 12

The bulb of the standard is calibrated gravimetrically to deliver from tip to tip slightly less than the nominal volume desired. To fill it the tube at the left is connected to a vacuum line with both stopcocks closed. The delivery tip is immersed in a container of distilled water and the left hand stopcock opened. As soon as the water fills the standard to overflow, this stopcock is closed and the container of water withdrawn. The delivery tip is wiped clean, the flask to be calibrated is brought under the tip so that the tip extends into the neck about 10 mm and the right hand stopcock is opened. The water then flows out into the flask. Any water in the cup at the top can be drawn off through the right hand tube. To complete the filling of the flask a buret with a smaller diameter than the neck of the flask is used. The capacity of the flask is the sum of the volume of the standard and the volume delivered by the buret.

Burets may be used to calibrate small cylinders, centrifuge tubes, Babcock test bottles, and similar instruments. However, the buret must be selected with due regard for the precision of reading wanted. To illustrate this, suppose the 100 mL oil centrifuge tube shown in Figure 12 is to be calibrated. The accuracy specified by the American Society for Testing Materials for it at the various points is:

Range	Limit of Error	Range	Limit of Error
0 to 0.1 mL	0.02 mL	Above 3 to 5 mL	0.2 mL
Above 0.1 to 0.3	0.03	Above 5 to 10	0.5
Above 0.3 to 1.0	0.05	Above 10 to 100	1.0
Above 1 to 3	0.1		

A 50 mL or 100 mL buret is satisfactory for the upper part of the scale, but it is obvious that the first few milliliters at the bottom of the tube should be checked by a buret of about 5 mL capacity subdivided to 0.01 mL or 0.02 mL.

If a large cylinder is to be calibrated at one or more points, the most convenient and accurate method for the average laboratory consists in delivering quantities from volumetric pipets of as large a size as possible, finishing up with a measuring pipet. The differences in diameters and tolerances at the calibration marks between pipets and cylinders are so great that no appreciable error will occur with the multiple deliveries necessary from the pipets, to calibrate a cylinder.

Table 4: CORRECTIVE FACTORS FOR KG-33 BOROSILICATE GLASS

Barometric Pressure mm Hg	Temperature, °C									
	19	20	21	22	23	24	25	26	27	28
580	1.00243	1.00262	1.00281	1.00302	1.00324	1.00347	1.00371	1.00396	1.00422	1.00449
600	1.00245	1.00264	1.00283	1.00304	1.00326	1.00349	1.00374	1.00399	1.00424	1.00451
620	1.00248	1.00267	1.00287	1.00308	1.00330	1.00353	1.00377	1.00402	1.00428	1.00455
640	1.00251	1.00270	1.00290	1.00311	1.00333	1.00356	1.00380	1.00405	1.00431	1.00458
660	1.00254	1.00272	1.00292	1.00313	1.00335	1.00358	1.00382	1.00408	1.00433	1.00460
680	1.00256	1.00275	1.00295	1.00316	1.00338	1.00361	1.00385	1.00410	1.00436	1.00463
700	1.00259	1.00278	1.00298	1.00319	1.00341	1.00364	1.00388	1.00413	1.00439	1.00466
720	1.00262	1.00281	1.00301	1.00322	1.00344	1.00367	1.00391	1.00416	1.00442	1.00468
740	1.00265	1.00284	1.00304	1.00324	1.00346	1.00370	1.00393	1.00418	1.00444	1.00471
760	1.00268	1.00286	1.00306	1.00327	1.00349	1.00372	1.00396	1.00421	1.00447	1.00474
780	1.00270	1.00289	1.00309	1.00330	1.00352	1.00375	1.00399	1.00424	1.00450	1.00477
800	1.00273	1.00291	1.00312	1.00333	1.00355	1.00378	1.00402	1.00427	1.00452	1.00479

Values taken from “The Calibration of Small Volumetric Laboratory Apparatus”, NBS-IR 74-461 and based on a cubical coefficient of expansion of 0.000010 mL/mL/1°C.

Table 5: CORRECTIVE FACTORS FOR KIMBLE SODA LIME GLASS

Barometric Pressure mm Hg	Temperature, °C									
	19	20	21	22	23	24	25	26	27	28
580	1.00244	1.00262	1.00279	1.00299	1.00319	1.00341	1.00363	1.00387	1.00411	1.00437
600	1.00246	1.00264	1.00281	1.00301	1.00321	1.00343	1.00366	1.00390	1.00414	1.00439
620	1.00250	1.00267	1.00285	1.00305	1.00326	1.00347	1.00369	1.00393	1.00417	1.00443
640	1.00253	1.00270	1.00288	1.00308	1.00328	1.00350	1.00372	1.00396	1.00420	1.00446
660	1.00256	1.00272	1.00290	1.00310	1.00330	1.00352	1.00374	1.00399	1.00422	1.00448
680	1.00258	1.00275	1.00293	1.00313	1.00333	1.00355	1.00377	1.00401	1.00425	1.00451
700	1.00261	1.00278	1.00296	1.00316	1.00336	1.00357	1.00380	1.00404	1.00428	1.00454
720	1.00264	1.00281	1.00299	1.00319	1.00339	1.00361	1.00383	1.00407	1.00431	1.00456
740	1.00267	1.00284	1.00302	1.00321	1.00341	1.00364	1.00385	1.00409	1.00433	1.00459
760	1.00270	1.00286	1.00304	1.00324	1.00344	1.00366	1.00388	1.00412	1.00436	1.00462
780	1.00272	1.00289	1.00307	1.00327	1.00347	1.00369	1.00391	1.00415	1.00439	1.00465
800	1.00275	1.00291	1.00310	1.00330	1.00350	1.00372	1.00394	1.00418	1.00441	1.00467

Values derived from NBS IR 74-461, page 12 and based on a cubical coefficient of expansion of 0.000025 mL/mL/1°C.

Table 6: CORRECTIVE FACTORS FOR N-51A BOROSILICATE GLASS

Barometric Pressure mm Hg	Temperature, °C									
	19	20	21	22	23	24	25	26	27	28
580	1.00243	1.00262	1.00281	1.00302	1.00323	1.00346	1.00370	1.00394	1.00420	1.00447
600	1.00246	1.00265	1.00284	1.00304	1.00326	1.00348	1.00372	1.00397	1.00422	1.00448
620	1.00249	1.00267	1.00287	1.00307	1.00328	1.00351	1.00375	1.00399	1.00425	1.00451
640	1.00251	1.00270	1.00289	1.00310	1.00331	1.00354	1.00378	1.00402	1.00427	1.00454
660	1.00254	1.00272	1.00292	1.00312	1.00334	1.00357	1.00380	1.00405	1.00430	1.00456
680	1.00257	1.00275	1.00295	1.00316	1.00337	1.00359	1.00383	1.00407	1.00433	1.00459
700	1.00259	1.00278	1.00298	1.00318	1.00340	1.00362	1.00386	1.00410	1.00435	1.00461
720	1.00262	1.00281	1.00301	1.00321	1.00342	1.00365	1.00389	1.00413	1.00438	1.00464
740	1.00266	1.00284	1.00303	1.00324	1.00345	1.00367	1.00391	1.00415	1.00441	1.00467
760	1.00268	1.00286	1.00306	1.00326	1.00348	1.00370	1.00393	1.00418	1.00444	1.00470
780	1.00271	1.00289	1.00309	1.00329	1.00350	1.00373	1.00397	1.00421	1.00447	1.00473
800	1.00273	1.00292	1.00311	1.00331	1.00353	1.00375	1.00399	1.00424	1.00449	1.00476

Values derived from NBS IR 74-461, page 12 and based on a cubical coefficient of expansion of 0.000015 mL/mL/1°C.

Table 7

Effect on calculated volume by use of incorrect coefficient of cubical expansion of glass

	For Weighings Made Below 20°C	For Weighings Made Above 20°C
When Actual Expansion is less than value used for Tables 4, 5 and 6.	Calculated volume too large	Calculated volume too small
When Actual Expansion is greater than value used for Tables 4, 5 and 6.	Calculated volume too small	Calculated volume too large

Table 8

DENSITY OF MERCURY*

Temperature	Density Grams/mL	Temperature	Density Grams/mL
15°C	13.5581	23°C	13.5385
16°C	13.5557	24°C	13.5360
17°C	13.5533	25°C	13.5336
18°C	13.5507	26°C	13.5311
19°C	13.5483	27°C	13.5287
20°C	13.5458	28°C	13.5262
21°C	13.5434	29°C	13.5238
22°C	13.5409	30°C	13.5213

*Per NBS August 29, 1975

Table 9

Combined Buoyancy and Glass Corrective factors for 1 mL of Mercury

CORRECTION (Additive Factor)

Temperature of Weighing	KG-33 Glass	Soda Lime Glass (R6)	N51A Glass
15°C	0	.00007	.00001
16°C	.00001	.00005	.00002
17°C	.00002	.00002	.00003
18°C	.00003	.00000	.00004
19°C	.00004	.00003	.00005
20°C	.00005	.00005	.00006
21°C	.00006	.00008	.00007
22°C	.00007	.00010	.00008
23°C	.00008	.00013	.00009
24°C	.00009	.00015	.00010
25°C	.00010	.00018	.00011
26°C	.00011	.00020	.00012
27°C	.00012	.00023	.00013
28°C	.00013	.00025	.00014
29°C	.00014	.00028	.00015
30°C	.00015	.00030	.00016

NOTE: For capacities other than 1 mL, multiply nominal capacity by correction factor to determine the new additive factor.

A) *For example:* 10 mL at 23°C would have a corrective factor on KG-33 glass of 10 times –.00008 or –.00080.

B) *As a second example:* 5 mL at 23°C would have a corrective factor on KG-33 glass of 5 times –.00008 or –.00040.

C) *As a third example:* 150 mL at 25°C would have a corrective factor on N51A glass of 150 times –.00011 or –.0165.

MILLILITER VERSUS CUBIC CENTIMETER

The Twelfth General (International) Conference on Weights and Measures redefined the liter as, "a special name for the cubic decimeter". Thus, the relationships previously used —

1 liter = 1.000028 cubic decimeters, and
1 milliliter = 1.000028 cubic centimeters, became void.

The Conference did agree that use of the terms "liter", "milliliter", and "mL", might be continued, except in association with measurements of the highest precision. Incidentally, the preferred abbreviation for cubic centimeters is "cm^3" — the use of "cc", is not permitted.

The difference in volume between the old and the current meanings of liter is so small as to be negligible for volumetric glassware. This being so, we continue to use "liter" and "milliliter" in catalog descriptions and for inscriptions on glass apparatus. In the worst case, that of a 2000 "milliliter" flask, the difference is only 10% of the Class A tolerance.

CAPACITY TOLERANCES FOR GLASS VOLUMETRIC APPARATUS

Many listings of Kimble volumetric glass apparatus are designated as CLASS A, and all such glassware is permanently marked with a large A. This custom resulted from a requirement of Federal Specification DD-V-581a, Volumetric Apparatus, Glass, wherein apparatus meeting certain high requirements for accuracy was described as CLASS A and was to be marked with A. DD-V-581a has been replaced by ASTM Specification E694 and for individual items E287 for burets; E237 and E288 for volumetric flasks; E1094 for pharmaceutical graduates; and E969 for volumetric pipets. They cover the same groups of ware, and the same requirements for accuracy and marking have been continued. The accuracy requirements are identical with those of Circular 602* of the National Bureau of Standards, Testing of Glass Volumetric Apparatus. These various publications cover the usual burets, cylinders, volumetric flasks, volumetric and measuring pipets. In addition to these, a number of other items are held to accuracies equivalent to the values assigned by the National Bureau of Standards to the particular items mentioned in Circular 602. Hence, the designation CLASS A has been given to many items which are not included by name or description in either the Federal Specifications or Circular 602.

The tolerances allowed on capacity for apparatus now designated as CLASS B are twice as large as the CLASS A tolerances.

*__NOTE:__ This publication is out of print but is available for loan at most Government Depository Libraries throughout the country. The new companion ASTM publications E-542 and E-694 cover what C-602 did in the past.

STANDARD TEMPERATURE FOR GLASS VOLUMETRIC APPARATUS

The standard temperature in the United States and the International Standard for volumetric apparatus (ISO No. 4787) is 20°C, and all apparatus is calibrated by manufacturers to contain or deliver the indicated capacity at this temperature, unless a different temperature is specifically requested.

When it is necessary in tropical countries to work at an ambient temperature considerably above 20°C, it is recommended by the International Standards Organization that a temperature of 27°C be adopted.

Table 3 below illustrates this for a standard temperature of 27°C which is selected frequently for apparatus to be used in the tropics.

Table 3
Difference in volume of glass vessels of KG-33 and N-51A glasses between 20°C and 27°C, expressed as percentage of tolerance on capacity of apparatus made to requirements of ASTM (Class A Apparatus).

Nominal Capacity	Burets		Cylinders (TD)		Volumetric Flasks		Volumetric Pipets	
	KG-33	N-51A	KG-33	N-51A	KG-33	N-51A	KG-33	N-51A
1	—	—	—	—	0.5%	1%	1%	2%
5	3.5%	5.5%	—	—	1.5	3	3.5	6
10	3.5	5.5	0.5%	1%	3.5	6	3.5	6
25	5.5	9.5	1	1.5	5.5	9.5	5.5	9.5
50	7	11	1.5	2	6.5	11	6.5	11
100	7	11	2	3	8.5	14	8.5	14
250	—	—	2.0	3.5	14	23	—	—
500	—	—	2.5	4.5	17	28	—	—
1000	—	—	2.5	4.5	22.5	37	—	—
2000	—	—	—	—	27	44	—	—

For similar apparatus made to Class B tolerances, the percentages are only one-half as much.

CAPACITY FOR CYLINDRICAL CONTAINERS

Rules for finding inside diameter, length, or capacity of a cylindrical tube or container:

Change all lengths and diameters to millimeters.

Change all capacities to milliliters.

CASE I — Capacity and total length are known. Find inside diameters. Divide total length in mm by the capacity in mL to obtain length of 1mL. From the table obtain the proper inside diameter for this length.

CASE II — Capacity and inside diameter are known. Find total length. From the table obtain the length for 1mL corresponding to the inside diameter. Multiply the length found by the capacity to get the total length.

CASE III — Total length and inside diameter are known. Find capacity. From the table find the length for 1mL corresponding to the inside diameter. Divide the total length by the length for 1mL to calculate the capacity.

$$ID = \frac{L}{C}$$

L = Length for 1 mL of I.D. x Capacity

$$C = \frac{L}{\text{Length for 1 mL of I.D.}}$$

The Column Height per mL of Capacity for any Inside Diameter (I.D.) in mm can be found as follows:

$$\frac{1}{\left(\frac{\text{I.D.}}{2}\right)^2 \times \text{Pi} \times 0.001}$$

Inside Diameter Of Container	Column Height Per mL Of Capacity
3 mm	141.47mm
3.5	103.94
4	79.58
4.5	62.88
5	50.93
5.5	42.09
6	35.37
6.5	30.14
7	25.99
7.5	22.64
8	19.89
8.5	17.62
9	15.72
9.5	14.11
10	12.73
10.5	11.55
11	10.52
11.5	9.63
12	8.84
12.5	8.15
13	7.53
13.5	6.99
14	6.50
14.5	6.06
15	5.66
15.5	5.30
16	4.97

Inside Diameter Of Container	Column Height Per mL Of Capacity
16.5mm	4.68mm
17	4.41
17.5	4.16
18	3.93
18.5	3.72
19	3.53
19.5	3.35
20	3.18
20.5	3.03
21	2.89
21.5	2.75
22	2.63
22.5	2.52
23	2.41
23.5	2.31
24	2.21
24.5	2.12
25	2.04
25.5	1.96
26	1.88
26.5	1.81
27	1.75
27.5	1.68
28	1.62
28.5	1.57
29	1.51
29.5	1.46
30	1.41

CLASS A and CLASS B TOLERANCES

Capacity† mL Less than and Including	Cylindrical Graduates			Volumetric Flasks		Burets	Pipets		
							Measuring	Sero-logical	Transfer
	Class A	Class A	Class B	Class A*	Class A*	Class *A	Class A*	Class B*	Class A*
	Tolerance, ± mL To Contain	Tolerance, ± mL To Deliver	Tolerance, ± mL	± mL To Contain	Tolerance, ± mL To Deliver	Tolerance, ± mL	Tolerance, ± mL	Tolerance, ± mL	Tolerance, ± mL
0.1							0.005	0.005	
0.2							.008	.008	
1				0.010			.01	.02	0.006
2				.015			.01	.02	.006
3				.015					.01
4				.020					.01
5	0.05	0.06	0.08	.02	0.04	0.01	.02	.04	.01
10	0.08	.10	.10	.02	.04	.02	.03	.06	.02
15									.03
20									.03
25	.14	.18	.30	.03	.05	.03	.05	.10	.03
50	.20	.26	.40	.05	.10	.05			.05
100	.35	.40	.60	.08	.15	.10			.08
200	.65	.80	1.4	.10	.20				.10
250	.65	.80	1.4	.12	.25				
500	1.1	1.3	2.6	.15	.30				
1000	2.0	2.5	5.0	.30	.50				
2000	3.5	5.0	10.0	.50	1.00				
4000	6.5	9.0	18.0						

*Tolerances of Class B glassware are twice as large as Class A glassware where not otherwise specified.
†Tolerances are established on the basis of capacity only and are independent of subdivisions.

ACKNOWLEDGMENTS

Acknowledgment is made of information obtained informally over many years from the staff of the National Bureau of Standards.

1. N. S. OSBOURNE and B. H. VEAZEY, The Testing of Glass Volumetric Apparatus, Bulletin of Bur. of Stds., 4, 553-601 (1907-8).

2. E. L. PEFFER and G. C. MULLIGAN, The Testing of Glass Volumetric Apparatus, Circular C434, Nat'l Bur. of Stds.

3. J. C. HUGHES, The Testing of Glass Volumetric Apparatus, Circular 602, Nat'l Bur. of Stds.

4. Standard Density and Volumetric Tables, Circular No. 19, Nat'l Bur. of Stds.

5. VERNEY STOTT, Volumetric Glassware, Witherby, London (1929).

6. JOSEPHINE LEMBECK, "The Calibration of Small Volumetric Laboratory Glassware:, NBS IR 74-461, Nat'l. Bur. of Stds.

Assistance has been received also from many friends in the apparatus industry and users of glass volumetric apparatus in the preparation of the manuscript.

Care and Use — Cleaning Methods

Care should be exercised when using most cleaning solutions as they can cause skin irritations or severe burns on contact. Dilute solutions become concentrated as the water evaporates; therefore, always flush the exposed area immediately with large quantities of water.

The list of methods given here is by no means complete, but offers a fairly wide variety and should cover all the usual contaminants, as well as the more important special cases.

Frequently it is desirable to give glassware a preliminary rinse or soak with organic solvent to remove grease, followed by a water rinse. The rinsing with water must be done thoroughly if acid will be used later to clean the glassware.

Unless autoclaving is necessary, glassware should be cleaned as soon as possible after use to avoid setting and caking of residues. Pipets, for example, may be placed in a convenient jar containing a weak antiseptic solution, immediately after use. Autoclaving is necessary to disinfect glassware that may have been used to contain potentially dangerous biological fluids.

There is a wide variety of cleaning agents available that will remove surface contaminants such as silicone and other organic and biological residues, blood residues and other contaminants that may interfere with trace analyses. These cleaners are available in biodegradable, phosphate-free and chromium-free formulations if desired and can be obtained from laboratory supply houses.

NOTE: If wiping or other mechanical cleaning action in necessary, it should be done gently using non-abrasive cleaners and wiping materials. The use of abrasive materials will damage the glass surface, degrading its inherent strength.

There are some specific contaminants that may require specialized cleaning methods, and some are given here:

1. **Permanganate stains.** Use a mixture of equal volume of 3% sulfuric acid and 3% hydrogen peroxide.
2. **Iron stains.** Use a solution containing on part hydrochloric acid and one part water.
3. **Bacteriological material.** Glassware should be soaked in a suitable disinfectant solution or steam autoclaved followed by cleaning with a suitable agent.

CAUTIONS: Before using any cleaning solution, refer to its Material Safety Data Sheet for precautions to be observed during use. Some of the cleaning materials used may leave trace residue unless rinsing process is carried out thoroughly. While such traces may not be harmful if the object of cleaning is to prepare the glassware for calibration, they can give trouble in certain laboratory operations. When glassware is to be calibrated, the final rinsings must be distilled water.

If an article is to be dried after cleaning, as is necessary for all vessels marked “To Contain”, ethyl alcohol or acetone (American Chemical Society Specification) may be used. Drying may be hastened by blowing clean, dry air into the vessel (or sucking the air through the vessel).

Efficient air filters must be provided to remove any particles of oil or dirt from compressed air. Drying should be done in a fume hood.

Glassware Safety



You play by common, ordinary, everyday rules, the kinds of things you’d do naturally if you just took time to think about them:

1. Don’t get cut – it hurts you and your productivity.
2. Don’t drop glassware – avoid the bruises that lead to breakage.
3. Don’t use chipped or broken glassware – it’s dangerous and breaks more readily.
4. Don’t mouth pipet – you could inhale a toxic substance, burn your mouth, or cut your lip.
5. Don’t leave pipets sticking out of beakers or flasks – an invitation for an accident.
6. Insert tubing carefully. Use a protective towel for your hand and lubricate the tubing.
7. Dispose of broken glassware in a special receptacle.
8. Carry large containers carefully, using a bottle carrier.
9. Clean and rinse glassware very well with deionized water, then let it drain dry on a clean, lint-free towel.

To back up the rules, you need a formal laboratory safety program. It begins with a written safety policy, a safety committee, and regular safety inspections. That way, you can investigate accidents thoroughly, keep a record and analysis of them, and promote safety awareness all the time. It could lead you to the best safety record ever.



Fig. 4 Don't leave in detergent solutions for prolonged periods



Fig. 5 Don't pipet by mouth



Fig. 6 Don't apply direct heat

Care and Use — Cleanliness of Apparatus

The usual criterion of cleanliness of glass apparatus is uniform wetting of the surface by distilled water. Certain contaminants, especially grease, adhering to the walls prevent them from being uniformly wetted, and there is a tendency for water to collect into drops.

Imperfect wetting causes irregularities in capacity of volumetric glassware by distorting the meniscus, and also by affecting the volume of the residue adhering to the walls after emptying instruments calibrated to deliver the indicated volume.

Even when the surface of the vessel is uniformly wetted, variations in the apparent capacity still may occur, due to contamination of the liquid surface by minute quantities of fatty or other organic substances which produce a change in surface tension affecting the shape of the meniscus. The cleaning, rinsing and drying, therefore, must be carried out in such a way as to prevent this from happening.

The choice of the procedure to be used in cleaning glassware depends on the nature of the contaminant. In many cases special reagents or methods must be used to remove a particular substance. Before listing the more important methods, it is desirable to make a few general statements.

Glass
Glasses used in chemical apparatus have excellent resistance to acids, except hydrofluoric. Strong alkaline solutions, such as hot caustic solutions, will attack any glass if contact is prolonged. This is true even though a particular glass may not exhibit any visible effect, due to the solubility of the reaction products. Dilute detergent solutions, up to about 2% strength, will have no serious effect on the glass, unless the glass is exposed for unnecessarily long periods or the detergent is allowed to dry on the glass.

Colored Graduations
The scales and inscriptions of many items of Kimble glassware are colored by staining a thin layer of the glass. Since the colored portion is of the same composition as the glass object, the resistance to chemical attack is the same as that of the rest of the glass. Here, the color can be removed only by dissolving a layer of glass from the surface.

Some Kimble volumetric glassware has fused on, ceramic enamel printed lines and inscriptions. These fused-on enamels are quite resistant to acids and alkalies. In most cases they should last as long as the piece of apparatus if cared for properly. However, by their nature, they cannot be as resistant as the ware to which they adhere. Consequently, the graduated lines should not be subjected to prolonged immersion in acids or alkalies. Whenever the lines are wetted by reagents, they should be rinsed as soon as conveniently possible.

Safety Precautions
With many pieces of glassware, it is necessary or desirable to fill by suction when cleaning. ***Do not suck up acid or other cleaners by mouth.*** In fact, do not pipet by mouth at all. Use hand held, manual or electronic pipetting aids.

Abrasives
Do not use abrasives on glassware, particularly volumetric ware. The surface will be marred in time, and the resultant scratches may prevent proper drainage or act as resting places for adulterants which will be difficult to remove.

Water for Rinsing
When preparing a piece of glassware for calibration, rinsing with tap water should be followed by a thorough rinsing with distilled water. Sufficient material may be deposited on the surface by tap water to cause erratic results, particularly with small items, even though water wets the surface uniformly. Even in ordinary cleaning processes, the use of deionized water is recommended.

Adherent Organic Residues
Never attempt to remove such residues by the application of direct heat. Permanent strains may be introduced and, what is more important, the calibration of volumetric apparatus may be changed.

Care and Use — Ground-Glass Surfaces

Ground-glass joints and stopcocks should never be used when dry. Although ground-glass surfaces seal well without the use of lubricants, it is advisable to lubricate them to prevent sticking and breakage. Ground surfaces must be cleaned prior to lubrication—dust, dirt and particulate matter may score the surface and cause leakage.

Different lubricants are used for these operating conditions:

Silicone grease—for high temperature and high vacuum
Glycerin—for long term reflux or extraction
Hydrocarbon grease—for general laboratory use

Lubricating Ground-Glass Joints

1. Lubricate joints that must be airtight and when glassware contains strong alkaline solutions.
2. Lubricate only the upper part of the inner joint. A properly lubricated joint appears clear, without striations.
3. Do not allow grease to come in contact with vapor or liquid and cause contamination.

Lubricating Stopcocks

Spread two circular bands of grease around the stopcock plug. Insert the plug into the barrel and twist several times until the assembly is completely transparent. Be careful not to use too much lubricant or the bore will become plugged.

Care and Use — HI-VAC® PTFE VALVES

1. Valves are assembled with FKM O-rings, suitable for use with oxidizing and NON-POLAR compounds at temperatures from -23°C to 204°C.
2. All elastomers have outgassing rates higher than glass. Long pump-down periods will typically reduce these rates by a factor of ten. Vacuum systems using PTFE valves normally operate at pressures up to 10^{-6} mm Hg. Heating of this valve during pump-down with an air heat gun will improve ultimate vacuum.
3. O-rings should be lubricated with a thin film of vacuum grease to prolong life and reduce leakage by allowing the o-ring to slip easily along the tube. Excess grease should be thoroughly wiped off.
4. Any leakage across the o-ring stem seal occurs mainly on the inward movement. Turning the stem in and out during pump-down helps evacuate the space between the two stem o-rings. One o-ring may be removed if preferred, improving performance under some conditions.
5. O-rings may be removed from the stem by pushing the o-ring into the groove with thumb and forefinger, distorting ring sufficiently to form a small loop which can be “picked up” and the o-ring pulled off of the stem without damaging surfaces.

Care and Use — Stopcocks with Plugs Made of Polytetrafluoroethylene (PTFE)

Kimble stopcock plugs of PTFE are made of the most chemically inert material in laboratory use today. Only a few chemicals have any effect on PTFE and these only at elevated temperatures and pressures. The material is extremely tough, durable and heat resistant, with practically zero moisture-absorption. It remains non-brittle even at sub-zero temperatures.

To obtain maximum performance from your stopcock plugs of PTFE observe the following hints:

1. To clean new plugs, carefully disassemble, lift plug free of glass barrel, and rinse all parts of plug and barrel in acetone. After drying, reassemble and the stopcock is ready for use. (Do not use abrasive materials to clean either plug or barrel at any time.)
2. The washer of PTFE must always be placed adjacent to the end of the glass barrel, to secure minimal friction when turning. When properly tightened, the plug will be slightly more resistant to turning than a lubricated glass plug.
3. Plugs of PTFE can be easily scored around the bore if rotated when solid particles are lodged between plug and barrel, or project beyond mating edges of glass parts. Once scored, the plug may leak.
4. Do not use a stopcock plug of PTFE on a vessel used for long time storage of liquids known to attack glass, since the surface of the barrel may become roughened, and leakage may occur between the plug and and barrel causing a potential safety hazard.
5. If plugs of PTFE are used with liquids corrosive to glass, such as alkalies, rinse the stopcock thoroughly with water after use. Do not allow the liquid to evaporate The concentrated solution remaining will attack the glass surface: and the eventual solids may also mar the surface of PTFE if the plug is then rotated.
6. When not in use, store in a dust-free area with plug loosened within the glass barrel Although tough and unbreakable, PTFE is softer than glass and has a tendency to conform to the glass surface, including eventual expansion into the hollow parts of the barrel.

Care and Use — Recommendations

A. TO AVOID SERIOUS AND PERSONAL INJURY, AVOID ABRASIONS - An abrasion reduces the strength of glass, making it more susceptible to breakage under impact and/or thermal shock. Thermal shock may result from sudden changes in temperature or use on either a burner or hot plate. Serious injuries could result if breakage occurs while glass holds heated and/or corrosive liquid.

B. RECOMMENDED GLASSWARE CLEANING AND HANDLING PROCEDURES

PROPER CLEANING PROCEDURE

1. Washing machines may be used. Support racks on the washer must be well maintained. The support pins should be coated with a nonabrasive material to prevent metal to glass contact and scratching.

2. For manual washing, use only plastic core brushes that have soft non-abrasive bristles. Soft, clean sponges or other wiping materials may be used. **DO NOT USE THESE BRUSHES OR WIPING MATERIALS WITH ABRASIVE CLEANERS**. Keep them clean. Scotch Brite and similar scouring pads will scratch glass and should not be used.

3. Inspect the glassware before each use and discard if scratched on inner surfaces, chipped, cracked or damaged in any way.

4. Many commercial glass cleaners are available. Follow the manufacturer's directions for the use of these products since some are corrosive and can damage the glass.

5. Organic solvents are acceptable cleaning agents when conditions warrant their use.

IMPROPER CLEANING PROCEDURE:

1. Do not place metal or other hard objects, such as spatulas, glass stirring rods, or brushes with metal parts, inside the glassware. This will scratch the glass and cause eventual breakage and injury.

2. Do not use strong alkaline products and hydrofluoric acid as cleaning agents, they are glass dissolvers and can damage the glassware and eventually cause breakage which can result in injury.

3. Do not use any abrasive cleansers, including soft cleansers (i.e. Ajax, Comet, Old Dutch, Soft Scrub, etc.), as these will scratch the glass and cause eventual breakage and injury.

4. Do not place hands inside glassware while wearing any jewelry, particularly diamond rings, as these will score the inside of the glassware and eventually cause breakage and injury.

5. Do not heat glassware to temperatures (>800°F) needed to burn out carbon residues. This will result in the introduction of permanent stresses in the glass that will eventually cause the glassware to break resulting in possible injury.

C. **AVOID IMPACT** - Glass will break as a result of impact. Use care when handling to avoid impacting hard objects, such a spigots, other glassware, counter tops, etc.

D. **HEATING GLASSWARE**

1. Use wire gauze when heating over open flame.

2. Use either low or medium heat settings when using a hot plate High hot plate settings will cause excessive localized heating of the glassware and will eventually cause breakage and possible injury.

3. Do not heat glassware designated as heavy duty unless recommended by manufacturer. Even though these items have added mechanical strength, they are more susceptible to breakage from thermal stock when heated.

4. Do not allow the contents of the container to boil dry as this may induce permanent stresses that will eventually cause breakage. Discard containers that have been boiled dry.

DO NOT evacuate or pressurize unless recommended in the current Kimble Chase Laboratory catalog.

E. CENTRIFUGE TUBES – RCF values can be significantly reduced if the glass tubes have been scratched or otherwise physically abused resulting in surface damage and lowered glass strength. Refer to the current Kimble Chase Laboratory catalog.

"TO CONTAIN" VERSUS "TO DELIVER"

Proper use of calibrated volumetric glassware requires that the user be informed whether the ware is a "to contain" or "to deliver" vessel. All Kimble calibrated ware is marked either "TC" or "TD". When the graduation line denotes the volume contained in the calibrated vessel, the ware is marked "TC". When the graduation line indicates the volume delivered from the vessel, the ware is marked "TD". When a vessel is calibrated "TD", it differs from a "TC" calibrated vessel in that a drainage holdback error, the amount of water required to wet the inner surface of the vessel in contact with the water, is added to the "TC" volume. The "TD" vessel then delivers the same volume as contained in a "TC" vessel. Product descriptions in this catalog usually state the method of calibration used. (The International Standards Organization designation for "to contain" is "IN" and "to deliver", is "EX".)

Pipets Calibrated "To Deliver" (EX)
A convenient setup for testing pipets or other instruments ordinarily filled by suction is shown in Figure 9. The pipet is clamped in a vertical position and the 3-way stopcock connected to it with rubber tubing. The bent arm of the stopcock has a length of rubber hose attached which can be held in the mouth or connected to a vacuum line. Distilled water at the temperature of the room is placed in the large beaker. The water is stirred before use, care being taken not to introduce air into it.

Before making a weighing, the pipet is filled one or more times from the beaker by applying suction through the stopcock, in order to bring the pipet to the temperature of the water. Finally the pipet is filled to about 10 mm above the mark, the stopcock closed, and the beaker removed. The stopcock now is opened to connect the pipet to the straight vertical tube and the water lowered slowly to the 0 line. During this emptying, the edge of the tip is kept in contact with the side of the beaker. The rate of descent of the water is controlled by a finger applied to the upper end of this tube. After setting to 0, the stopcock is closed. Then the temperature of the water in the large beaker is taken and this reading is used as the temperature of the water in the pipet. All deliveries should start at the 0 line.

To start the delivery into the receiver the stopcock is opened fully, again connecting pipet and vertical tube. The plug is not touched after this, any control needed being exercised by the forefinger on the vertical tube. The same precautions are taken as for burets against splashing of water and wetting the upper part of the neck of the receiver.

Where delivery of a measuring or serological pipet is very rapid, the forefinger must be held on the vertical tube from the start of delivery, but water is retarded as little as possible without losing control. For weighings of intermediate lines, water is allowed to empty until a few mm above the line. Then a finger on the vertical tube is used to slow up the delivery so that the water can be set accurately at the mark. The tip is kept in constant contact with the receiving vessel throughout the delivery. Then the receiver is withdrawn and the stopcock closed.

When the pipet has an opaque ring or rings near the top, this indicates that the amount of water remaining in the tip after free delivery has ceased is to be blown out and added to the original delivery. A count of two seconds is made after free delivery has ended and while the neck and tip are still in contact, then air is blown through the rubber hose on the bent arm of the stopcock to eject the liquid in the tip. The neck of the bottle is removed from contact immediately after this. Give only one puff, strong enough to expel the liquid. The time of two seconds has been selected as being the average length of time required in actual service after free delivery has ceased to insert the top of the pipet in the mouth preparatory to blowing through.

Pipets Calibrated "To Contain" (IN)
If the capacity is from a mark to the tip, the pipet should be weighed dry, filled with water to the mark and reweighed. To hold the pipet a saddle may be used on the balance pan. The pipet may be set up as shown in Figure 9 and the filling and setting to the mark accomplished in the same way. Then, a rubber cap or a piece of rubber tubing closed by a short glass rod is slipped up over the tip and the pipet is removed from the stand and weighed. The first weighing of the dry pipet should include the rubber cap or rubber tubing.

When the indicated volume is between marks, the pipet is filled completely up to the top mark, weighed, dried and then filled up to bottom mark and weighed. The difference in weight is the apparent weight of the water contained between the two marks. In this case the weight of the empty pipet is not needed.

Flasks and Cylinders Calibrated "To Contain" (IN)
Flasks and cylinders calibrated to contain are cleaned, dried and weighed empty, filled accurately and weighed again. The difference between the two weights, of course, is the apparent weight of the volume contained.

Flasks and Cylinders Calibrated "To Deliver" (EX)
If flasks and cylinders calibrated to deliver are to be calibrated, it will be found best to weigh the filled piece first, empty it and weigh again. The second weight includes the film remaining on the walls after delivery.

In all cases, the top of the flask or cylinder should be closed by a cap of some type to minimize evaporation losses. Care must also be taken in handling not to deposit moisture or grease from the hands on the surface of the glass. Therefore, the actual contact with the glass should be by means of a clean cloth, gloves or secure holding device.

The entire neck of a flask is wetted by the distilled water and a drainage time of about 2 minutes allowed before completing the setting. To fill a cylinder, the water is allowed to run down one side only, although the entire wall is wetted for about 10 mm above the line to be calibrated by rotation or slightly tipping in several directions. A drainage time of about 2 minutes is allowed before the final adjustment is made. For the final adjustment, a pipet or dropper with a finely drawn point should be used. The temperature of the water can be taken in the filled piece just after the weighing has been completed unless the volume is small. In the latter case, if the thermometer happens to be at a different temperature, the reading obtained may be in error due to the effect of the comparatively large bulk of the thermometer in heating or cooling the water. The alternative is to fill the flask from a reservoir and use the temperature of the water in the reservoir.

To calibrate centrifuge tubes, Babcock test bottles and similar articles by weighing the water contained, use the methods outlined for flasks and cylinders, except that the wall is wetted above the line being checked only far enough to insure a correctly shaped meniscus.

FILLING AND EMPTYING

The results obtained with volumetric apparatus depend not only on the accuracy with which the ware is calibrated, but also on the method of use. Insofar as possible, users should manipulate the instruments in exactly the same way as the manufacturer does when locating the calibration lines.

The instructions given here apply particularly to apparatus used with a liquid which wets the glass and must be followed in every respect to obtain the most accurate results when such apparatus is to be calibrated. Since mercury does not wet glass, the factors of importance are cleanliness, the use of an ascending meniscus when possible, and the tapping of the vessel before reading the meniscus.

The following rules have been suggested by the National Bureau of Standards. (These requirements may seem at times to be unduly detailed, but they are based on exact knowledge of the behavior of the various types of apparatus as determined experimentally.)

Burets
Burets should be held in a vertical position and filled to about 10 mm above the 0 line. Any liquid on the outside of the tip is removed at this time with clean filter paper.

The setting to the 0 line is made by slowly emptying the excess liquid into a beaker or other receptacle with the side touching the edge of the tip. Any liquid remaining at the tip after setting has been made is touched-off against the wet side of the receptacle. When delivery is started, stopcocks should be completely open, even though it is necessary to slow the delivery near the end of a titration. If an exact quantity is desired, the liquid is slowed down when it is about 10 mm above the final line in order to set the meniscus accurately at this line. As soon as delivery has been completed the tip is touched to the side of the receiver and the latter removed from contact.

Measurements made in laboratories with burets ordinarily are from the 0 mark. Other initial points may be used on precision apparatus without serious error, but this is not advised with burets having very rapid delivery.

Cylinders
In filling a cylinder the liquid is allowed to flow down one side only. However, the entire wall is wetted for about 10 mm above the meniscus, by a gentle rotation of the cylinder or, preferably, by tipping it slightly in several directions. Here, a drainage time of about 2 minutes is allowed before completing the setting.

The delivery of the contents of a cylinder is accomplished in the same way as described for a flask.

(**NOTE:** These directions apply when highly accurate deliveries are wanted. In ordinary laboratory work where measurements are of approximate volumes only, no special precautions in filling and emptying cylinders are necessary.) You should bear in mind, however, that the accuracy you achieve is dependent on your method. Good method, consistently applied, will yield good results. Poor or sloppy methods will yield poor results.

Flasks
When a solution is made up to a definite strength in a volumetric flask, the entire neck usually is wet at the time the volume is adjusted, due to the mixing process. Consequently, in filling flasks the entire neck is wetted by the distilled water. A drainage time of about 2 minutes is allowed before completing the setting.

If a flask is calibrated to deliver its indicated capacity, the delivery is made by gradually inclining the flask, avoiding, as much as possible, agitation of the contents and sloshing around of the liquid. The process should take half a minute. At the end of the emptying the instrument should be nearly vertical and should be held so for another half minute. Then the drop adhering to the lip should be touched off against the wet surface of the receiving vessel.

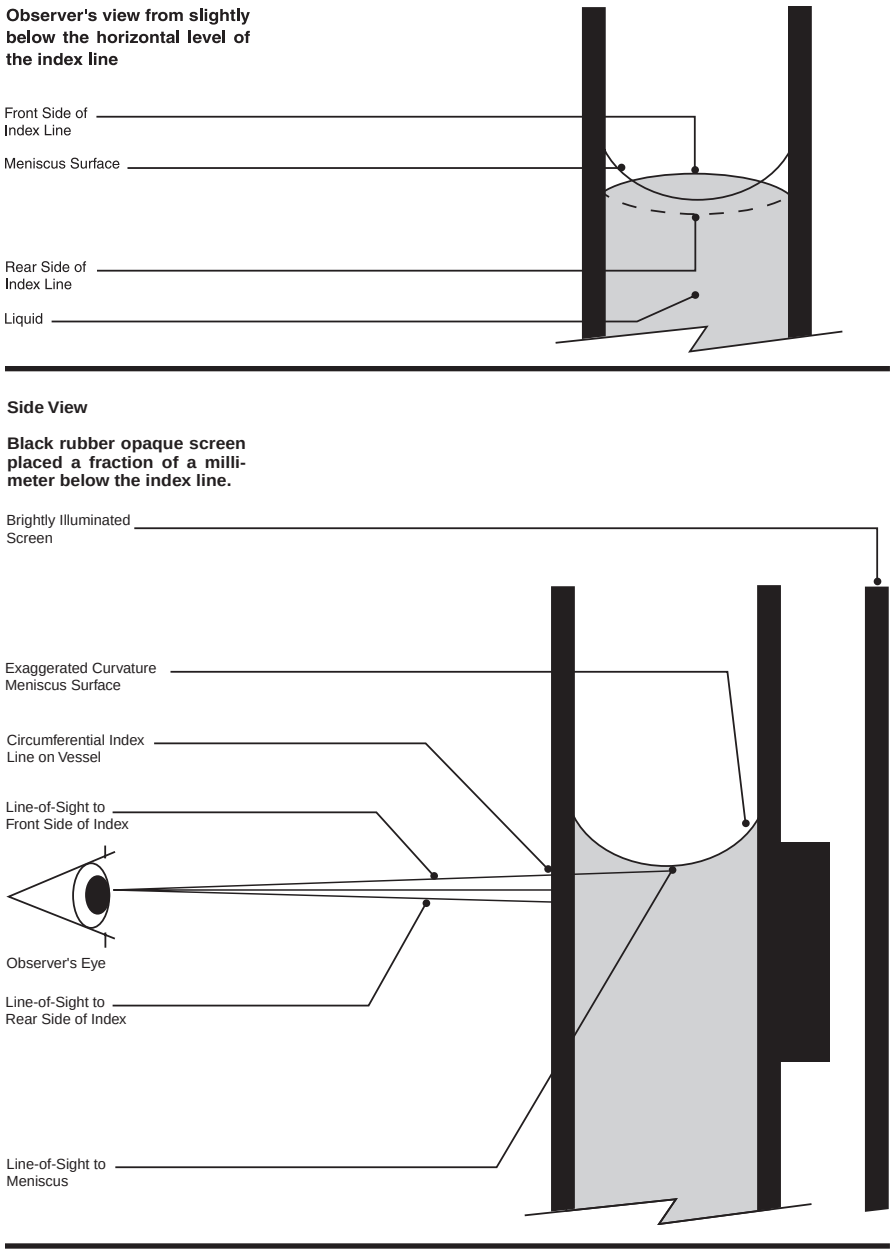
Pipets
Pipets also are held in a vertical position and filled to about 10 mm above the 0 line. The technique of setting to this line is the same as used for burets. The rate of outflow at this point is controlled by slight pressure of the forefinger on the top.

With MEASURING and SEROLOGICAL PIPETS, delivery is unrestricted, unless the liquid descends so rapidly that it would be impossible to stop at the desired place. In this case, however, delivery should be as fast as possible while retaining control with a finger. The tip is touched to the side of the receiver when delivery is completed and then removed immediately, except for certain types of serological pipets. These are “calibrated for blowout”, i.e., to deliver the indicated capacity when the small amount remaining in the tip after free delivery has ceased is blown out (with tip in contact with the wet side of the receiver, if possible) and added to the initial volume. As mentioned before, all blowout pipets are marked with either a wide opaque ring, two narrower opaque rings near the top, or two printed rings near the top.

(**NOTE:** With measuring pipets of small capacity, there may be a tendency for free delivery to cease before the liquid reaches the lowest graduation lines. If this is so, the tip should be kept in contact with the receiving vessel during the delivery, and not just to touch off the last drop when delivery is finished.)

VOLUMETRIC PIPETS are held in a vertical position and outflow is unrestricted. The tip is touched to the wet surface of the receiving vessel and kept in contact with it until the water has ceased to flow. A count of two is made and the tip then withdrawn horizontally from contact with the receiver. The water remaining in the tip is not blown out, except in the case of Ostwald pipets used in biochemical work. These pipets are usually “calibrated for blowout” and are marked also with an opaque ring near the top.

Fig. 7
These diagrams illustrate the procedure for observing the meniscus position described in the text.



METHOD OF READING THE MENISCUS

Where water or other wetting liquid is used, the method of reading advised by the National Bureau of Standards and ASTM is illustrated in Figure 7 and described as follows:

Method of Reading

"In all apparatus where the volume is limited by a meniscus, the reading or setting is made on the lowest point of the meniscus. In order that the lowest point may be observed it is necessary to place a shade of some dark material immediately below the meniscus, which renders the profile of the meniscus dark and clearly visible against a light background. A convenient device for this purpose is a collar-shaped section of thick black rubber tubing, cut open at one side and of such size as to clasp the tube firmly."

"The position of this lowest point of the meniscus with reference to the graduation line is such that it is in the plane of the middle of the graduation line. This position of the meniscus is obtained by making the setting in the center of the ellipse formed by the graduation line on the front and the back of the graduated tube as observed by having the eye slightly below the plane of the graduation line. This is illustrated in Figure 7. The setting is accurate if, as the eye is raised and the ellipse narrows, the lowest point of the meniscus remains midway between the front and rear positions of the graduation line. By this method it is possible to observe the approach of the meniscus from either above or below the line to its proper setting."

For mercury, the Bureau uses the following method:

"In setting a mercury meniscus on a graduation line, the instrument must be tapped sharply in order that the meniscus may assume a normal shape. The highest point of the meniscus is set on the middle of the graduation line by employing the principles outlined for water, but observing from above the line."

Fig. 1

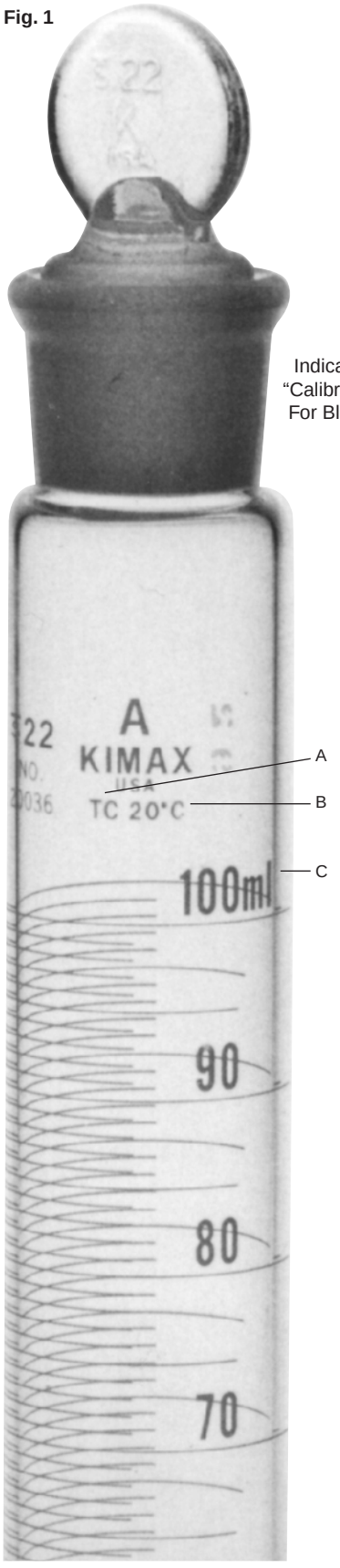


Fig. 2



GLASS VOLUMETRIC APPARATUS

Glass volumetric apparatus comprises a class of objects used to measure volume. These volumes are indicated by lines in or on the outer surface of the glass produced by etching with hydrofluoric acid, by engraving with a thin wheel or abrasive blast, by applying a staining material which colors a thin layer of the glass when heat is applied, or by application of an enamel which is fused on the glass without etching. Etched and engraved lines are usually colored by filling them with a fused-on glass enamel or by staining.

The development of more durable and compatible stains and enamels has encouraged producers to favor these methods over the "etched and filled" method, thus reducing safety hazards to production workers involved in the acid etching process.

In addition to the lines indicating the volumes, the numerical values of these volumes in the particular system of weights and measures used also must be marked on the apparatus (Fig. 1-C). The temperature of calibration (Fig. 1-B) also usually appears on the instruments since the volume of a glass vessel changes slightly with temperature.

Finally, the method of use — whether calibrated to contain or to deliver the indicated volume — generally is marked either as "contains" or "delivers", or more frequently as "TC" or "TD" (Fig.1-A). The International Standards Organization designation for "contains" is "IN" and "delivers" is "EX". Some United States manufacturers are currently adopting this international designation. Some pipets (Fig. 2) are calibrated to deliver the indicated volume when the small amount remaining in the tip after free delivery has ceased is blown out and added to the main delivery. These pipets sometimes are said to be "calibrated for blowout." To call attention to this method of calibration, two lines with the words "blow out" above them are printed near the top.

A color-coded size and/or subdivision identity band is found just below the top end of the pipet. This band is to aid in sorting and selection of the pipet; however, a final check of the printed capacity and subdivision should always be made to minimize the possibility of errors.

KIMBLE GLASSES FOR VOLUMETRIC APPARATUS

KIMAX® KG-33 Glass
KG-33 glass is a borosilicate composition with low coefficient of expansion. Consequently, apparatus made of it can have heavy walls to minimize mechanical breakage, and still possess high resistance to thermal shock.

KIMAX Brand KG-33 Glass also has very high resistance against chemical attack. It is a borosilicate glass meeting the requirements for the Type I, Class A glass of American Society of Testing and Materials — E438. The alkali content is low and it is made without elements of the calcium, magnesium, and zinc groups or the heavy metals. The combined total of arsenic and antimony oxides is less than 0.005%. Volumetric apparatus made of KG-33 glass is trademarked KIMAX®.

Kimble N-51A Glass
N-51A glass is also a borosilicate composition with the best all-around chemical durability of available commercial glasses; and because of a comparatively low coefficient of expansion, it also possesses good resistance to heat shock. N-51A meets the requirements for the Type I, Class B glass of ASTM-E438. Apparatus made of this glass is trademarked KIMAX-51® and liquids contained in apparatus made of the glass.

DRAINAGE TIMES FOR VOLUMETRIC GLASSWARE

Burets and Measuring Pipets

When a liquid which wets glass is delivered from a buret or measuring pipet, some of the liquid is retained on the inner wall. Unless delivery is extremely slow, the volume held back is greater than the amount needed to form a wetting film. The excess eventually drains down.

It is customary to calibrate burets and measuring pipets for unrestricted delivery and without any waiting period after delivery before a reading is made. Other methods of calibration, such as delivery with the stopcock partially closed or the prescription of a waiting period before reading are not practical.

On the other hand, in actual titrations a considerable time in excess of the free delivery time may elapse, due to the necessity for slowing down when nearing the end-point. During this time some of the liquid left on the wall drains and rejoins the main column. This results in a rise in the position of the meniscus and an apparent decrease in the volume delivered.

For accurate work, therefore, a buret should be used which has a free delivery time long enough that after-drainage is very small. The National Bureau of Standards has specified minimum times for tubes of different graduated lengths which meet this requirement. Kimble burets and measuring pipets of Class A grade comply.

Many chemists object to these times as being too long. However, if more rapid times are used, some sacrifice in accuracy must be accepted in many titrations. For example, the behavior of 50 mL burets calibrated for different free delivery times is shown in Figure 13*. The time of 106 seconds approximates to the minimum requirement of the National Bureau of Standards. The time of 56 seconds is approximately the average for Kimble burets other than Class A. It can be seen that appreciable errors due to after-drainage may occur in titrations when burets are calibrated for deliveries much faster than this. One more point concerning the delivery time of burets deserves attention. Sometimes the tip or stopcock of a buret is damaged and a repair is made. Unless the original delivery time is duplicated rather closely, the accuracy of the buret may be impaired, due to a change in the delivery characteristics.

Volumetric Pipets

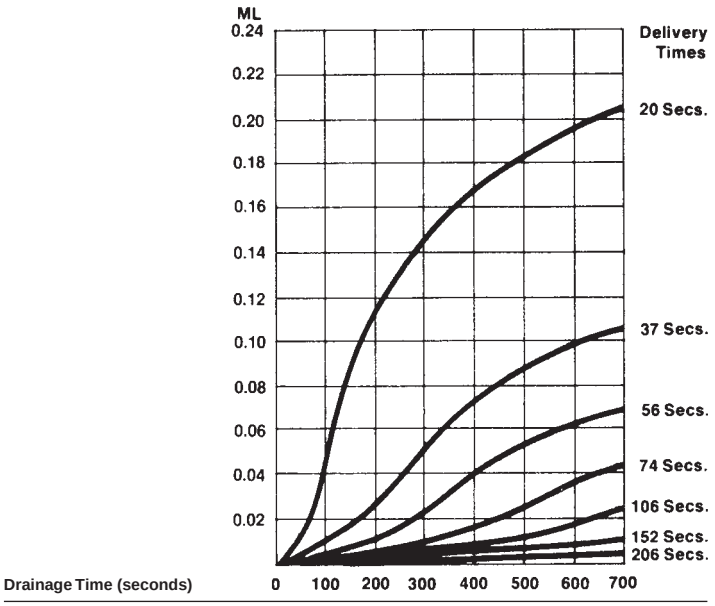
The amount of liquid retained on the wall of a volumetric pipet also depends on the delivery time. The National Bureau of Standards has established minimum delivery times for this type of instrument, so that slight changes in technique will have the least possible effect on accuracy and reproducibility of deliveries from pipets of various capacities.

To overcome uncertainty concerning the volume delivered by large tips, some authorities have advocated a waiting period before considering that delivery has been completed. However, if a certain total time is to be allowed for the delivery, more complete and consequently more reproducible deliveries will be obtained by using this time for the initial delivery and eliminating the waiting time.

This is illustrated in Figure 14* which shows the total volumes delivered by a 100 mL pipet when various drainage periods are allowed after different free delivery times. The maximum delivery time allowed by the National Bureau of Standards for a 100 mL pipet is 60 seconds. If all of this time is used in the initial delivery, 99.94 mL will be obtained from this particular pipet. To get this much with a free delivery of 30 seconds, a drainage time of 140 seconds also must be allowed, or a total time of 170 seconds. Sometimes, repairs to the tips of pipets of this type are attempted. Since the capacity is to the tip, it may be changed by the repair, even though the delivery time has not been changed. A recalibration should be made before reusing the pipet.

Fig. 13

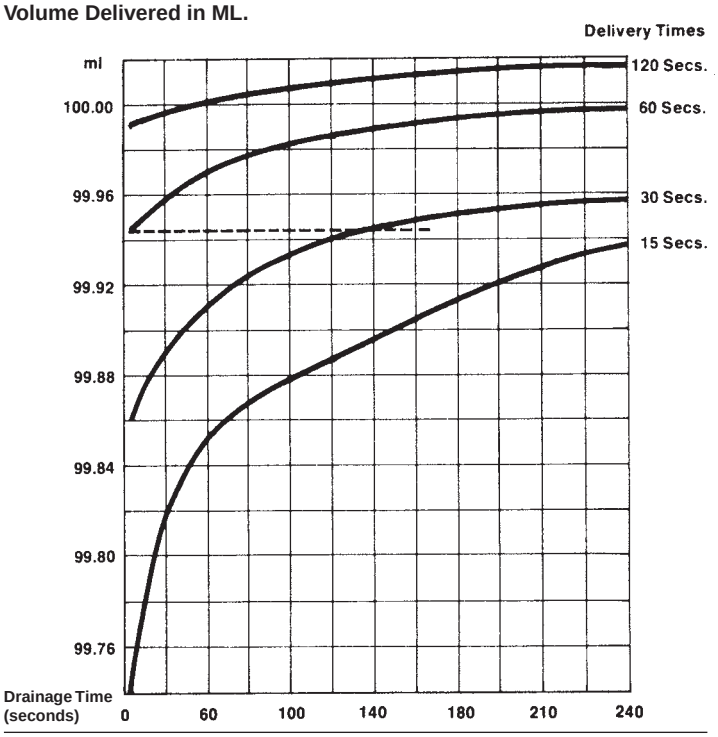
Volume of after-drainage in 50 ML buret for various delivery times and after-drainage times.



(V. Stott. J. Soc. Gl. Tech., 169-198 (1928))

Fig. 14

Volumes delivered by 100 ML volumetric pipet for various delivery times plus various drainage periods.



A

To Convert	Into	Multiply By
Abcoulomb	Statcoulombs	2.998 x 10
Acre	Sq chain (Gunters)	10
Acre	Rods	160
Acre	Square links (Gunters)	1×10^{5}
Acre	Hectare or sq hectometer	0.4047
acres	Roods	4.0
acres	sq feet	43,560.0
acres	sq meters	4,047.0
acres	sq miles	$1{,}562 \times 10^{-3}$
acres	sq yards	4,840.0
acre-feet	cu feet	43,560.0
acre-feet	gallons	3.259×10^{5}
amperes/sq cm	amps/sq in	6.452
amperes/sq cm	amps/sq meter	10^{4}
amperes/sq in	amps/sq cm	0.1550
amperes/sq in	amps/sq meter	1,550.0
amperes/sq meter	amps/sq cm	10^{-4}
amperes/sq meter	amps/sq in	6.452×10^{-4}
ampere-hours	coulombs	3,600.0
ampere-hours	faradays	0.03731
ampere-turns	gilberts	1.257
ampere-turns/cm	amp-turns/in	2.540
ampere-turns/cm	amp-turns/meter	100.0
ampere-turns/cm	gilberts/cm	1.257
ampere-turns/in	amp-turns/cm	0.3937
ampere-turns/in	amp-turns/meter	39.37
ampere-turns/in	gilberts/cm	0.4950
ampere-turns/meter	amp-turns/cm	0.01
ampere-turns/meter	amp-turns/in	0.0254
ampere-turns/meter	gilberts/cm	0.01257
Angstrom unit	inch	3937×10^{-9}
Angstrom unit	Meter	1×10^{-10}
Angstrom unit	Micron or (Mu)	1×10^{-4}
Are	Acre (US)	0.02471
Ares	sq yards	119.60
ares	acres	0.02471
ares	sq meters	100.0
Astronomical Unit	Kilometers	1.495×10^{8}
Atmospheres	Ton/sq inch	0.007348
atmospheres	cms of mercury	76.0
atmospheres	ft of water (at 4°C)	33.90
atmospheres	in. of mercury (at 0°C)	29.92
atmospheres	kgs/sq cm	1.0333
atmospheres	kgs/sq meter	10,332.0
atmospheres	pounds/sq in	14.70
atmospheres	tons/sq ft	1.058

B

To Convert	Into	Multiply By
Barrels (U.S., dry)	cu inches	7,056.0
Barrels (U.S., dry)	quarts (dry)	105.0
Barrels (U.S., liquid)	gallons	31.5
barrels (oil)	gallons (oil)	42.0
bars	atmospheres	0.9869
bars	dynes/sq cm	10^{6}
bars	kgs/sq meter	1.020×10^{4}
bars	pounds/sq ft	2,089.0
bars	pounds/sq in	14.50
Baryl	Dyne/sq cm	1.000
Bolt (U.S. Cloth)	Meters	36.576
BTU	Liter—Atmosphere	10.409
Btu	ergs	1.0550×10^{10}
Btu	foot-lbs	778.3
Btu	gram-calories	252.0
Btu	horsepower-hrs	3.931×10^{-4}
Btu	joules	1,054.8
Btu	kilogram-calories	0.2520
Btu	kilogram-meters	107.5
Btu	kilowatt-hrs	2.298×10^{-4}
Btu/hr	foot-pounds/sec	0.2162
Btu/hr	gram-cal/sec	0.0700
Btu/hr	horsepower-hrs	3.929×10^{-4}
Btu/hr	watts	0.2931
Btu/min	foot-pounds/sec	12.96
Btu/min	horsepower	0.02356
Btu/min	kilowatts	0.01757
Btu/min	watts	17.57
Btu/sq ft/min	watts/sq in	0.1221
Bucket (Br. dry)	Cubic Cm (mL)	1.818×10^{4}
bushels	cu ft	1.2445
bushels	cu in	2,150.4
bushels	cu meters	0.03524
bushels	liters	35.24
bushels	pecks	4.0
bushels	pints (dry)	64.0
bushels	quarts (dry)	32.0

C

To Convert	Into	Multiply By
Calories, gram (mean)	BTU (mean)	3.9685×10^{-3}
Candle/sq cm	Lamberts	3.142
Candle/sq inch	Lamberts	0.4870
Centares (centiares)	sq meters	1.0
Centigrade	Fahrenheit	(C° x 9/5) + 32
centigrams	grams	0.01
Centiliter	Ounce Fluid (U.S.)	0.3382
Centiliter	Cubic inch	0.6103
Centiliter	drams	2.705
centiliters	liters	0.01
centimeters	feet	3.281×10^{-2}
centimeters	inches	0.3937
centimeters	kilometers	10^{-5}
centimeters	meters	0.01
centimeters	miles	6.214×10^{-6}
centimeters	millimeters	10.0
centimeters	mils	393.7
centimeters	yards	1.094×10^{-2}
centimeter-dynes	cm-grams	1.020×10^{-3}
centimeter-dynes	meter-kgs	1.020×10^{-6}
centimeter-dynes	pound-feet	7.376×10^{-6}
centimeter-grams	cm-dynes	980.7
centimeter-grams	meter-kgs	10^{-5}
centimeter-grams	pound-feet	7.233×10^{-5}
centimeters of mercury	atmospheres	0.01316
centimeters of mercury	feet of water	0.4461
centimeters of mercury	kgs/sq meter	136.0
centimeters of mercury	pounds/sq ft	27.85
centimeters of mercury	pounds/sq in	0.1934
centimeters/sec	feet/min	1.1969
centimeters/sec	feet/sec	0.03281
centimeters/sec	kilometers/hr	0.036
centimeters/sec	knots	0.1943
centimeters/sec	meters/min	0.6
centimeters/sec	miles/hr	0.02237
centimeters/sec	miles/min	3.728×10^{-4}
centimeters/sec/sec	feet/sec/sec	0.03281
centimeters/sec/sec	kms/hr/sec	0.036

centimeters/sec/sec	meters/sec/sec	0.01
centimeters/sec/sec	miles/hr/sec	0.02237
Chain	Inches	792.0
Chain	meters	20.12
Chains (surveyors' or Gunter's)	yards	22.0
circular mils	sq cms	5.067×10^{-4}
circular mils	sq mils	0.7854
circular mils	sq inches	7.854×10^{-7}
Circumference	Radians	6.283
Cords	cord feet	8.0
Cord feet	cu feet	16
Cord	cu meter	3.6245
Cord (wood)	cu feet	128
Cord	steres	3.625
Coulomb	Statcoulombs	2.998×10^{9}
coulombs	faradays	1.036×10^{-5}
coulombs/sq cm	coulombs/sq in	64.52
coulombs/sq cm	coulombs/sq meter	10^{4}
coulombs/sq in	coulombs/sq cm	0.1550
coulombs/sq in	coulombs/sq meter	1,550.0
coulombs/sq meter	coulombs/sq cm	10^{-4}
coulombs/sq meter	coulombs/sq in	6.452×10^{-4}
cubic centimeters (mL)	cu feet	3.531×10^{-5}
cubic centimeters (mL)	cu inches	0.06102
cubic centimeters (mL)	cu meters	10^{-6}
cubic centimeters (mL)	cu yards	1.308×10^{-6}
cubic centimeters (mL)	gallons (U.S. liq)	2.642×10^{-4}
cubic centimeters (mL)	liters	0.001
cubic centimeters (mL)	pints (U.S. liq)	2.113×10^{-3}
cubic centimeters (mL)	quarts (U.S. liq)	1.057×10^{-3}
cubic feet	bushels (dry)	0.8036
cubic feet	cord (wood)	7.81×10^{-3}
cubic feet	cu cms (mL)	28,320.0
cubic feet	cu inches	1,728.0
cubic feet	cu meters	0.02832
cubic feet	cu yards	0.03704
cubic feet	gallons (U.S. liq)	7.48052
cubic feet	liters	28.32
cubic feet	pints (U.S. liq)	59.84
cubic feet	quarts (U.S. liq)	29.92
cubic feet	ton (shipping)	0.025
cubic feet/min	cu cms/sec	472.0
cubic feet/min	gallons/sec	0.1247
cubic feet/min	liters/sec	0.4720
cubic feet/min	pounds of water/min	62.43
cubic feet/sec	million gals/day	0.646317
cubic feet/sec	gallons/min	448.831
cubic inches	bushel	4.65×10^{-4}
cubic inches	cu cms (mL)	16.39
cubic inches	cu feet	5.787×10^{-4}
cubic inches	cu meters	1.639×10^{-5}
cubic inches	cu yards	2.143×10^{-5}
cubic inches	gallons	4.329×10^{-3}
cubic inches	liters	0.01639
cubic inches	mil-feet	1.061×10^{5}
cubic inches	pints (U.S. liq)	0.03463
cubic inches	quarts (U.S. liq)	0.01732
cubic meters	bushels (dry)	28.38
cubic meters	cords	0.2759
cubic meters	cu cms (mL)	10^{6}
cubic meters	cu feet	35.31
cubic meters	cu inches	61,023.0
cubic meters	cu yards	1,308.0
cubic meters	gallons (U.S. liq)	264.2
cubic meters	liters	1,000.0
cubic meters	pints (U.S. liq)	2,113.0
cubic meters	quarts (U.S. liq)	1,057.0
cubic yards	cu cms (mL)	$7,646 \times 10^{5}$
cubic yards	cu feet	27.0
cubic yards	cu inches	46,656.0
cubic yards	cu meters	0.7646
cubic yards	gallons (U.S. liq)	202.0
cubic yards	liters	764.6
cubic yards	pints (U.S. liq)	1,615.9
cubic yards	quarts (U.S. liq)	807.9
cubic yards/min	cubic ft/sec	0.45
cubic yards/min	gallons/sec	3.367
cubic yards/min	liters/sec	12.74

D

To Convert	Into	Multiply By
Dalton	Gram	1.650×10^{-24}
days	seconds	86,400.0
decigrams	grams	0.1
deciliters	liters	0.1
decimeter	inches	3.937
decimeter	feet	0.328
decimeters	meters	0.1
degrees (angle)	quadrants	0.01111
degrees (angle)	radians	0.01745
degrees (angle)	seconds	3,600.0
degrees/sec	radians/sec	0.01745
degrees/sec	revolutions/min	0.1667
degrees/sec	revolutions/sec	2.778×10^{-3}
dekagrams	grams	10.0
dekaliters	liters	10.0
dekameters	meters	10.0
Drams (apothecaries' or troy)	ounces (avoidupois)	0.1371429
Drams (apothecaries' or troy)	ounces (troy)	0.125
Drams (U.S., fluid or apoth.)	cubic cm (mL)	3.6967
drams	grams	1.7718
drams	grains	27.3437
drams	ounces	0.0625
dram	mL	3.696
Dyne/cm	Erg/sq millimeter	0.01
Dyne/sq cm	Atmospheres	9.869×10^{-7}
Dyne/sq cm	Inch of Mercury at 0°C	2.953×10^{-5}
Dyne/sq cm	Inch of Water at 4° C	4.015×10^{-4}
dynes	grams	1.020×10^{-3}
dynes	joules/cm	10^{-7}
dynes	joules/meter (newtons)	10^{-5}
dynes	kilograms	1.020×10^{-6}
dynes	poundals	7.233×10^{-5}
dynes	pounds	2.248×10^{-6}
dynes/sq cm	bars	10^{6}

E

To Convert	Into	Multiply By
Ell	Cm	114.30
Ell	Inches	45
Em, Pica	Inch	0.167
Em, Pica	Cm	0.4233
Erg/sec	Dyne-cm/sec	1.000
ergs	BTU	9.480×10^{-11}
ergs	dyne-centimeters	1.0
ergs	foot-pounds	7.367×10^{-6}

ergs	gram-calories	0.2389×10^{7}
ergs	gram-cms	1.020×10^{-3}
ergs	horsepower-hrs	3.7250×10^{-14}
ergs	joules	10^{-7}
ergs	kg-calories	2.389×10^{-11}
ergs	kg-meters	1.020×10^{-8}
ergs	kilowatt-hrs	0.2778×10^{-13}
ergs	watt-hours	0.2778×10^{-10}
ergs/sec	Btu/min	$5{,}688 \times 10^{-9}$
ergs/sec	ft-lbs/min	$4{,}427 \times 10^{-6}$
ergs/sec	ft-lbs/sec	7.3756×10^{-8}
ergs/sec	horsepower	1.341×10^{-10}
ergs/sec	kg-calories/min	1.433×10^{-9}
ergs/sec	kilowatts	10^{-10}

F

To Convert	Into	Multiply By
farads	microfarads	10^{6}
Faraday/sec	Ampere (absolute)	9.6500×10^{4}
faradays	ampere-hours	26.80
faradays	coulombs	9.649×10^{4}
Fathom	Meter	1.828804
fathoms	feet	6.0
feet	centimeters	30.48
feet	inches	12.0
feet	kilometers	3.048×10^{-4}
feet	meters	0.3048
feet	miles (neut.)	1.645×10^{-4}
feet	miles (stat.)	1.894×10^{-4}
feet	millimeters	304.8
feet	mils	1.2×10^{4}
feet	yards	0.333
feet of water	atmospheres	0.02950
feet of water	in. of mercury	0.8826
feet of water	kgs/sq cm	0.03048
feet of water	kgs/sq meter	304.8
feet of water	pounds/sq ft	62.43
feet of water	pounds/sq in	0.4335
feet/min	cms/sec	0.5080
feet/min	feet/sec	0.01667
feet/min	kms/hr	0.01829
feet/min	meters/min	0.3048
feet/min	miles/hr	0.01136
feet/sec	cms/sec	30.48
feet/sec	kms/hr	1.097
feet/sec	knots	0.5921
feet/sec	meters/min	18.29
feet/sec	miles/hr	0.6818
feet/sec	miles/min	0.01136
feet/sec/sec	cms/sec/sec	30.48
feet/sec/sec	kms/hr/sec	1.097
feet/sec/sec	meters/sec/sec	0.3048
feet/sec/sec	miles/hr/sec	0.6818
feet/100 feet	per cent grade	1.0
Foot—candle	Lumen/sq meter	10.764
foot-pounds	Btu	1.286×10^{-3}
foot-pounds	ergs	1.356×10^{7}
foot-pounds	gram-calories	0.3238
foot-pounds	hp-hrs	5.050×10^{-7}
foot-pounds	joules	1.356
foot-pounds	kg-calories	3.24×10^{-4}
foot-pounds	kg-meters	0.1383
foot-pounds	kilowatt-hrs	3.766×10^{-7}
foot-pounds/min	Btu/min	1.286×10^{-3}
foot-pounds/min	foot-pounds/sec	0.01667
foot-pounds/min	horsepower	3.030×10^{-5}
foot-pounds/min	kg-calories/min	3.24×10^{-4}
foot-pounds/min	kilowatts	2.260×10^{-5}
foot-pounds/sec	Btu/hr	4.6263
foot-pounds/sec	Btu/min	0.07717
foot-pounds/sec	horsepower	1.818×10^{-3}
foot-pounds/sec	kg-calories/min	0.01945
foot-pounds/sec	kilowatts	1.356×10^{-3}
Furlongs	miles (U.S.)	0.125
furlongs	rods	40.0
furlongs	feet	660.0
furlongs	mile (sta.)	0.125

G

To Convert	Into	Multiply By
gallons	cu cms (mL)	3,785.0
gallons	cu feet	0.1337
gallons	cu inches	231.0
gallons	cu meters	3.785×10^{-3}
gallons	cu yards	4.951×10^{-3}
gallons	liters	3.785
gallons (liq Br. Imp.)	gallons (U.S. liq)	1.20095
gallons (U.S.)	gallons (Imp.)	0.83267
gallons of water	pounds of water	8.3453
gallons/min	cu ft/sec	2.228×10^{-3}
gallons/min	liters/sec	0.06308
gallons/min	cu ft/hr	8.0208
gausses	lines/sq in	6.452
gausses	webers/sq cm	10^{-8}
gausses	webers/sq in	6.452×10^{-4}
gausses	webers/sq meter	10^{-4}
gilberts	ampere-turns	0.7958
gilberts/cm	amp-turns/cm	0.7958
gilberts/cm	amp-turns/in	2.021
gilberts/cm	amp-turns/meter	79.58
Gills (British)	cubic cm (mL)	142.07
gills	liters	0.1183
gills	pints (liq)	0.25
gittyschnit	schroll	5.0
Grade	Radian	0.01571
Grains	drams (avoirdupois)	0.03657143
grains (troy)	grains (avdp)	1.0
grains (troy)	grams	0.06480
grains (troy)	ounces (avdp)	2.0833×10^{-3}
grains (troy)	pennyweight (troy)	0.04167
grains/U.S. gal	parts/million	17.118
grains/U.S. gal	pounds/million gal	142.86
grains/Imp. gal	parts/million	14.286
grams	dynes	980.7
grams	grains	15.43
grams	joules/cm	9.807×10^{-5}
grams	joules/meter (newtons)	9.807×10^{3}
grams	kilograms	0.001
grams	milligrams	1,000.0
grams	ounces (avdp)	0.03527
grams	ounces (troy)	0.03215
grams	poundals	0.07093
grams	pounds	2.205×10^{-3}
grams/cm	pounds/inch	5.600×10^{-3}
grams/cu cm	pounds/cu ft	62.43
grams/cu cm	pounds/cu in	0.03613
grams/cu cm	pounds/mil-foot	3.405×10^{-7}
grams/liter	grains/gal	58.417
grams/liter	pounds/1,000 gal	8.345
grams/liter	pounds/cu ft	0.062427
grams/liter	parts/million	1,000.0

grams/sq cm	pounds/sq ft	2.0481
gram-calories	Btu	3.9683×10^{-3}
gram-calories	ergs	4.1868×10^{7}
gram-calories	foot-pounds	3.0880
gram-calories	horsepower/hrs	1.5596×10^{-6}
gram-calories	kilowatt-hrs	1.1630×10^{-6}
gram-calories	watt-hrs	1.1630×10^{-3}
gram/calories/sec	Btu/hr	14.286
gram-centimeters	Btu	9.297×10^{-8}
gram-centimeters	ergs	980.7
gram-centimeters	joules	9.807×10^{-5}
gram-centimeters	kg-cal	2.343×10^{-8}
gram-centimeters	kg-meters	10^{-5}

H

To Convert	Into	Multiply By
Hand	Cm	10.16
hectares	acres	2.471
hectares	sq feet	1.076×10^{5}
hectograms	grams	100
hectoliters	liters	100
hectometers	meters	100
hectowatts	watts	100
henries	millihenries	1,000.0
Hogsheads (British)	cubic ft	10.114
Hogsheads (U.S.)	cubic ft	8.42184
Hogsheads (U.S.)	gallons (U.S.)	63
horsepower	Btu/min	42.44
horsepower	foot-lbs/min	33,000.0
horsepower	foot-lbs/sec	550.0
horsepower (metric) (542.5 ft lb/sec)	horsepower (550 ft lb/sec)	0.9863
horsepower (550 ft lb/sec)	horsepower (metric) (542.5 ft lb/sec)	1.014
horsepower	kg-calories/min	10.68
horsepower	kilowatts	0.7457
horsepower	watts	745.7
horsepower (boiler)	Btu/hr	33.479
horsepower (boiler)	kilowatts	9.803
horsepower-hrs	Btu	2,547.0
horsepower-hrs	ergs	2.6845×10^{13}
horsepower-hrs	foot-lbs	1.98×10^{6}
horsepower-hrs	gram-calories	641,190.0
horsepower-hrs	joules	2.684×10^{6}
horsepower-hrs	kg-calories	641.1
horsepower-hrs	kg-meters	2.737×10^{5}
horsepower-hrs	kilowatt-hrs	0.7457
hours	days	4.167×10^{-2}
hours	weeks	5.952×10^{-3}
Hundredweights (long)	pounds	112
Hundredweights (long)	tons (long)	0.05
Hundredweights (short)	ounces (avoirdupois)	1,600
Hundredweights (short)	pounds	100
Hundredweights (short)	tons (metric)	0.0453592
Hundredweights (short)	tons (long)	0.0446429
Hundredweight (cwt)	quarters	4.0

I

To Convert	Into	Multiply By
inches	centimeters	2.540
inches	feet	0.0833
inches	link	0.12626
inches	meters	2.540×10^{-2}
inches	miles	1.578×10^{-5}
inches	millimeters	25.40
inches	mils	1,000.0
inches	yards	2.778×10^{-2}
inches of mercury	atmospheres	0.03342
inches of mercury	feet of water	1.133
inches of mercury	kgs/sq cm	0.03453
inches of mercury	kgs/sq meter	345.3
inches of mercury	pounds/sq ft	70.73
inches of mercury	pounds/sq in	0.4912
inches of water (at 4° C)	atmospheres	2.458×10^{-3}
inches of water (at 4° C)	inches of mercury	0.07355
inches of water (at 4° C)	kgs/sq cm	2.540×10^{-3}
inches of water (at 4° C)	ounces/sq in	0.5781
inches of water (at 4° C)	pounds/sq ft	5.204
inches of water (at 4° C)	pounds/sq in	0.03613
International Ampere	Ampere (absolute)	0.9998
International Volt	Volts (absolute)	1.0003
International volt	Joules (absolute)	1.593×10^{-19}
International volt	Joules	9.654×10^{4}

J

To Convert	Into	Multiply By
joules	Btu	9.480×10^{-4}
joules	ergs	10^{7}
joules	foot-pounds	0.7376
joules	kg-calories	2.389×10^{-4}
joules	kg-meters	0.1020
joules	watt-hrs	2.778×10^{-4}
joules/cm	grams	1.020×10^{4}
joules/cm	dynes	10^{7}
joules/cm	joules/meter (newtons)	100
joules/cm	poundals	723.3
joules/cm	pounds	22.48

K

To Convert	Into	Multiply By
kilograms	dynes	980,665.0
kilograms	grams	1,000.0
kilograms	joules/cm	0.09807
kilograms	joules/meter (newtons)	9.807
kilograms	poundals	70.93
kilograms	pounds	2.205
kilograms	tons (long)	9.842×10^{-4}
kilograms	tons (short)	1.102×10^{-3}
kilograms/cu meter	grams/cu cm	0.001
kilograms/cu meter	pounds/cu ft	0.06243
kilograms/cu meter	pounds/cu in	3.613×10^{-5}
kilograms/cu meter	pounds/mil-foot	3.405×10^{-10}
kilograms/meter	pounds/ft	0.6720
kilograms/sq cm	Dynes	980,665.0
kilograms/sq cm	atmospheres	0.9678
kilograms/sq cm	feet of water	32.81
kilograms/sq cm	inches of mercury	28.96
kilograms/sq cm	pounds/sq ft	2,048.0
kilograms/sq cm	pounds/sq in	14.22
kilograms/sq meter	atmospheres	9.678×10^{-5}
kilograms/sq meter	bars	98.07×10^{-6}
kilograms/sq meter	feet of water	3.281×10^{-3}
kilograms/sq meter	inches of mercury	2.896×10^{-3}
kilograms/sq meter	pounds/sq ft	0.2048
kilograms/sq meter	pounds/sq in	1.422×10^{-3}
kilograms/sq mm	kgs/sq meter	10^{6}
kilogram-calories	Btu	3.968
kilogram-calories	foot-pounds	3,088.0
kilogram-calories	hp-hrs	1.560×10^{-3}

kilogram-calories	joules	4,186.0
kilogram-calories	kg-meters	426.9
kilogram-calories	kilojoules	4.186
kilogram-calories	kilowatt-hrs	1.163×10^{-3}
kilogram-meters	Btu	9.294×10^{-3}
kilogram-meters	ergs	9.804×10^{7}
kilogram meters	foot-pounds	7.233
kilogram meters	joules	9.804
kilogram meters	kg-calories	2.342×10^{-3}
kilogram meters	kilowatt-hrs	2.723×10^{-6}
kilolines	maxwells	1,000.0
kiloliters	liters	1,000.0
kilometers	centimeters	10^{5}
kilometers	feet	3.281
kilometers	inches	3.937×10^{4}
kilometers	meters	1,000.0
kilometers	miles	0.6214
kilometers	millimeters	10^{6}
kilometers	yards	1,094.0
kilometers/hr	cms/sec	27.78
kilometers/hr	feet/min	54.68
kilometers/hr	feet/sec	0.9113
kilometers/hr	knots	0.5396
kilometers/hr	meters/min	16.67
kilometers/hr	miles/hr	0.6214
kilometers/hr/sec	cms/sec/sec	27.78
kilometers/hr/sec	ft/sec/sec	0.9113
kilometers/hr/sec	meters/sec/sec	0.2778
kilometers/hr/sec	miles/hr/sec	0.6214
kilowatts	BTU/min	56.92
kilowatts	foot-lbs/min	4.426×10^{4}
kilowatts	foot-lbs/sec	737.6
kilowatts	horsepower	1.341
kilowatts	kg-calories/min	14.34
kilowatts	watts	1,000.0
kilowatt-hrs	Btu	3,413.0
kilowatt-hrs	ergs	3.600×10^{13}
kilowatt-hrs	foot-lbs	2.655×10^{6}
kilowatt-hrs	gram-calories	859,850.0
kilowatt-hrs	horsepower-hrs	1.341
kilowatt-hrs	joules	3.6×10^{6}
kilowatt-hrs	kg-calories	860.5
kilowatt-hrs	kg-meters	3.671×10^{6}
kilowatt-hrs	pounds of water evaporated from and at 212°F	3.53
kilowatt-hrs	pounds of water raised from 62° to 212°F	22.75
knots	feet/hr	6,080.0
knots	kilometer/hr	1.8532
knots	nautical miles/hr	1.0
knots	statute miles/hr	1.151
knots	yards/hr	2,027.0
knots	feet/sec	1.689

L

To Convert	Into	Multiply By
league	miles (approx)	3.0
Light year	Miles	5.9×10^{12}
Light year	Kilometers	9.46091×10^{12}
lines/sq cm	gausses	1.0
lines/sq in	gausses	0.1550
lines/sq in	webers/sq cm	1.550×10^{-9}
lines/sq in	webers/sq in	10^{-8}
lines/sq in	webers/sq meter	1.550×10^{-5}
links (engineer's)	inches	12.0
links (surveyor's)	inches	7.92
links	rods	0.04
liters	bushels (U.S. dry)	0.02838
liters	cu cm (mL)	1,000.0
liters	cu feet	0.03531
liters	cu inches	61.02
liters	cu meters	0.001
liters	cu yards	1.308×10^{-3}
liters	gallons (U.S. liq)	0.2642
liters	pints (U.S. liq)	2.113
liters	quarts (U.S. liq)	1.057
liters	quarts (U.S. dry)	0.908
liters/min	cu ft/sec	5.886×10^{-4}
liters/min	gals/sec	4.403×10^{-3}
lumens/sq ft	foot-candles	1.0
Lumen	Spherical candle power	0.07958
Lumen	Watt	0.001496
Lumen/sq ft	Lumen/sq meter	10.76
lux	foot-candles	0.0929

M

To Convert	Into	Multiply By
maxwellls	kilolines	0.001
maxwells	webers	10^{-8}
megalines	maxwells	10^{6}
megohms	microhms	10^{12}
megohms	ohms	10^{6}
meters	centimeters	100
meters	feet	3.281
meters	inches	39.37
meters	kilometers	0.001
meters	miles (naut)	5.396×10^{-4}
meters	miles (stat)	6.214×10^{4}
meters	millimeters	1,000.0
meters	yards	1.094
meters	varas	1.179
meters/min	cms/sec	1.667
meters/min	feet/min	3.281
meters/min	feet/sec	0.05468
meters/min	kms/hr	0.06
meters/min	knots	0.03238
meters/min	miles/hr	0.03728
meters/sec	feet/min	196.8
meters/sec	feet/sec	3.281
meters/sec	kilometers/hr	3.6
meters/sec	kilometers/min	0.06
meters/sec	miles/hr	2.237
meters/sec	miles/min	0.03728
meters/sec/sec	cms/sec/sec	100
meters/sec/sec	ft/sec/sec	3.281
meters/sec/sec	kms/hr/sec	3.6
meters/sec/sec	miles/hr/sec	2.237
meters-kilograms	cm-dynes	9.807×10^{7}
meter-kilograms	cm-grams	10^{5}
meter-kilograms	pound-feet	7.233
microfarad	farads	10^{-6}
micrograms	grams	10^{-6}
microhms	megohms	10^{-12}
microhms	ohms	10^{-6}
microliters	liters	10^{-6}

Microns	meters	1×10^{-6}
mil	inch	0.001
miles (naut)	feet	6,080.27
miles (naut)	kilometers	1,853.0
miles (naut)	league	0.3333
miles (naut)	meters	1,853.0
miles (naut)	miles (statute)	1.1516
miles (naut)	yards	2,027.0
miles (statute)	centimeters	1.609×10^{5}
miles (statute)	feet	5.280
miles (statute)	furlongs	8.0
miles (statute)	inches	6.336×10^{4}
miles (statute)	kilometers	1.609
miles (statute)	meters	1,609.0
miles (statute)	miles (naut)	0.8684
miles (statute)	yards	1,760.0
miles/hr	cms/sec	44.70
miles/hr	feet/min	88
miles/hr	feet/sec	1.467
miles/hr	kms/hr	1.609
miles/hr	kms/min	0.02682
miles/hr	knots	0.8684
miles/hr	meters/min	26.82
miles/hr	miles/min	0.1667
miles/hr/sec	cms/sec/sec	44.70
miles/hr/sec	feet/sec/sec	1.467
miles/hr/sec	kms/hr/sec	1.609
miles/hr/sec	meters/sec/sec	0.4470
miles/min	cms/sec	2,682.0
miles/min	feet/sec	88
miles/min	kms/min	1.609
miles/min	knots/min	0.8684
miles/min	miles/hr	60
mil-feet	cu inches	9.425×10^{-6}
milliers	kilograms	1,000.0
Millimicrons	meters	1×10^{-9}
Milligrams	grains	0.01543236
milligrams	grams	0.001
milligrams/liter	parts/million	1.0
millihenries	henries	0.001
milliliters	liters	0.001
millimeters	centimeters	0.1
millimeters	feet	3.281×10^{-3}
millimeters	inches	0.03937
millimeters	kilometers	10^{-6}
millimeters	meters	0.001
millimeters	miles	6.214×10^{-7}
millimeters	mils	39.37
millimeters	yards	1.094×10^{-3}
million gals/day	cu ft/sec	1.54723
mils	centimeters	2.540×10^{-3}
mils	feet	8.333×10^{-5}
mils	inches	0.001
mils	kilometers	2.540×10^{-8}
mils	yards	2.778×10^{-5}
miner's inches	cu ft/min	1.5
Minims (British)	cubic cm (mL)	0.059192
Minims (U.S., fluid)	cubic cm (mL)	0.061612
minutes (angles)	degrees	0.01667
minutes (angles)	quadrants	1.852×10^{-4}
minutes (angles)	radians	2.909×10^{-4}
minutes (angles)	seconds	60
myriagrams	kilograms	10
myriameters	kilometers	10
myriawatts	kilowatts	10

N

To Convert	Into	Multiply By
nepers	decibels	8.686
Newton	Dynes	1×10^{5}

O

To Convert	Into	Multiply By
OHM (International)	OHM (absolute)	1.0005
ohms	megohms	10^{-6}
ohms	microhms	10^{6}
ounces	drams	16.0
ounces	grains	437.5
ounces	grams	28.349527
ounces	pounds	0.0625
ounces	ounces (troy)	0.9115
ounces	tons (long)	2.790×10^{-5}
ounces	tons (metric)	2.835×10^{-5}
ounces (fluid)	cu inches	1.805
ounces (fluid)	liters	0.02957
ounces (troy)	grains	480.0
ounces (troy)	grams	31.103481
ounces (troy)	ounces (advp)	1.09714
ounces (troy)	pennyweights (troy)	20.0
ounces (troy)	pounds (troy)	0.08333
Ounce/sq inch	Dynes/sq cm	4,309.0
ounces/sq in	pounds/sq in	0.0625

P

To Convert	Into	Multiply By
Parsec	Miles	19×10^{12}
Parsec	Kilometers	3.084×10^{13}
parts/million	grains/U.S. gal	0.0584
parts/million	grains/Imp. gal	0.07016
parts/million	pounds/million gal	8.345
Pecks (British)	cubic inches	554.6
Pecks (British)	liters	9.091901
Pecks (U.S.)	bushels	0.25
Pecks (U.S.)	cubic inches	537.605
Pecks (U.S.)	liters	8.809582
Pecks (U.S.)	quarts (dry)	8.0
pennyweights (troy)	grains	24.0
pennyweights (troy)	ounces (troy)	0.05
pennyweights (troy)	grams	1.55517
pennyweights (troy)	pounds (troy)	4.1667×10^{-3}
pints (dry)	cu inches	33.60
pints (liq)	cu cms (mL)	473.2
pints (liq)	cu feet	0.01671
pints (liq)	cu inches	28.87
pints (liq)	cu meters	4.732×10^{-4}
pints (liq)	gallons	6.189×10^{-4}
pints (liq)	liters	0.125
pints (liq)	quarts (liq)	0.4732
pints (liq)	cu yards	0.5
Planck's quantum	Erg—second	6.624×10^{-27}
Poise	Gram/cm sec	1.0
pounds (avoirdupois)	ounces (troy)	14.5833
poundals	dynes	13,826.0
poundals	grams	14.1
poundals	joules/cm	1.383×10^{-3}
poundals	joules/meter (newtons)	0.1383
poundals	kilograms	0.0141
poundals	pounds	0.03108

pounds	drams	256.0
pounds	dynes	44.4823×10^{4}
pounds	grains	7,000.0
pounds	grams	453.5924
pounds	joules/cm	0.04448
pounds	joules/meter (newtons)	4.448
pounds	kilograms	0.4536
pounds	ounces	16.0
pounds	ounces (troy)	14.5833
pounds	poundals	32.17
pounds	pounds (troy)	1.21528
pounds	quarters	0.04
pounds	tons (short)	0.0005
pounds (troy)	grains	5,760.0
pounds (troy)	grams	373.24177
pounds (troy)	ounces (advp)	13.1657
pounds (troy)	ounces (troy)	12
pounds (troy)	pennyweights (troy)	240
pounds (troy)	pounds (advp)	0.822857
pounds (troy)	tons (long)	3.6735×10^{-4}
pounds (troy)	tons (metric)	3.7324×10^{4}
pounds (troy)	tons (short)	4.1143×10^{4}
pounds of water	cu feet	0.01602
pounds of water	cu inches	27.68
pounds of water	gallons	0.1198
pounds of water/min	cu ft/sec	2.670×10^{-4}
pound-feet	cm-dynes	1.356×10^{7}
pound-feet	cm-grams	13,825.0
pound-feet	meter-kgs	0.1383
pounds/cu ft	grams/cu cm	0.01602
pounds/cu ft	kgs/cu meter	16.02
pounds/cu ft	pounds/cu in	5.787×10^{-4}
pounds/cu ft	pounds/mil-foot	5.456×10^{-9}
pounds/cu in	gms/cu cm	27.68
pounds/cu in	kgs/cu meter	2.768×10^{4}
pounds/cu in	pounds/cu ft	1,728.0
pounds/cu in	pounds/mil-foot	9.425×10^{-6}
pounds/ft	kgs/meter	1.488
pounds/in	gms/cm	178.6
pounds/mil-foot	gms/cu cm	2.306×10^{6}
pounds/sq ft	atmospheres	4.725×10^{-4}
pounds/sq ft	feet of water	0.01602
pounds/sq ft	inches of mercury	0.01414
pounds/sq ft	kgs/sq meter	4.882
pounds/sq ft	pounds/sq in	6.944×10^{3}
pounds/sq in	atmospheres	0.06804
pounds/sq in	feet of water	2.307
pounds/sq in	inches of mercury	2.036
pounds/sq in	kgs/sq meter	703.1
pounds/sq in	pounds/sq ft	144

Q

To Convert	Into	Multiply By
quadrants (angle)	degrees	90
quadrants (angle)	minutes	5,400.0
quadrants (angle)	radians	1.571
quadrants (angle)	seconds	3.24×10^{5}
quarter	pounds	25
quarter	cwt	0.25
quarts (dry)	liters	1.10132
quarts (dry)	cu inches	67.2
quarts (dry)	pints	2.0
quarts (dry)	peck	0.125
quarts (liq)	cu cms (mL)	946.4
quarts (liq)	cu feet	0.03342
quarts (liq)	cu inches	57.75
quarts (liq)	cu meters	9.464×10^{-4}
quarts (liq)	cu yards	1.238×10^{-3}
quarts (liq)	gallons	0.25
quarts (liq)	liters	0.9463

R

To Convert	Into	Multiply By
radians	degrees	57.30
radians	minutes	3,438.0
radians	quadrants	0.6366
radians	seconds	2.063×10^{5}
radians/sec	degrees/sec	57.30
radians/sec	revolutions/min	9.549
radians/sec	revolutions/sec	0.1592
radians/sec/sec	revs/min/min	573
radians/sec/sec	revs/min/sec	9.549
radians/sec/sec	revs/sec/sec	0.1592
revolutions	degrees	360
revolutions	quadrants	4.0
revolutions	radians	6.283
revolutions/min	degrees/sec	6.0
revolutions/min	radians/sec	0.1047
revolutions/min	revs/sec	0.01667
revolutions/min/min	radians/sec/sec	1.745×10^{-3}
revolutions/min/min	revs/min/sec	0.01667
revolutions/min/min	revs/sec/sec	2.778×10^{-4}
revolutions/sec	degrees/sec	360
revolutions/sec	radians/sec	6.283
revolutions/sec	revs/min	60
revolutions/sec/sec	radians/sec/sec	6.283
revolutions/sec/sec	revs/min/min	3,600.0
revolutions/sec/sec	revs/min/sec	60.0
Rod	Chain (Gunters)	0.25
Rod	Meters	5.029
Rods	furlong	0.025
Rods (Surveyors' meas.)	links	25
Rods (Surveyors' meas.)	yards	5.5
rods	feet	16.5
roods	sq rods	40
roods	acre	0.25

S

To Convert	Into	Multiply By
schrolls	gittyschnits	0.2
Scruples	grains	20
seconds (angle)	degrees	2.778×10^{-4}
seconds (angle)	minutes	0.01667
seconds (angle)	quadrants	3.087×10^{-6}
seconds (angle)	radians	4.848×10^{-6}
Slug	Kilogram	14.59
Slug	Pounds	32.17
Sphere	Steradians	12.57
square centimeters	circular mils	1.973×10^{5}
square centimeters	sq feet	1.076×10^{-3}
square centimeters	sq inches	0.1550
square centimeters	sq meters	0.0001
square centimeters	sq miles	3.861×10^{-11}
square centimeters	sq millimeters	100
square centimeters	sq yards	1.196×10^{-4}
square chains	acre	0.1
square feet	acres	2.296×10^{-5}
square feet	circular mils	1.833×10^{8}
square feet	sq cms	929

square feet	sq inches	144
square feet	sq meters	0.09290
square feet	sq miles	3.587×10^{-8}
square feet	sq millimeters	9.290×10^{4}
square feet	sq yards	0.1111
square inches	circular mils	1.273×10^{6}
square inches	sq cms	6.452
square inches	sq feet	6.944×10^{-3}
square inches	sq millimeters	645.2
square inches	sq mils	10^{6}
square inches	sq yards	7.716×10^{-4}
square kilometers	acres	247.1
square kilometers	sq cms	10^{10}
square kilometers	sq ft	10.76×10^{6}
square kilometers	sq inches	1.550×10^{9}
square kilometers	sq meters	10^{6}
square kilometers	sq miles	0.3861
square kilometers	sq yards	1.196×10^{6}
square meters	acres	2.471×10^{-4}
square meters	sq cms	10^{4}
square meters	sq feet	10.76
square meters	sq inches	1550.0
square meters	sq miles	3.861×10^{-7}
square meters	sq millimeters	10^{6}
square meters	sq yards	1.196
square miles	acres	640
square miles	sq feet	27.88×10^{6}
square miles	sq kms	2.590
square miles	sq meters	2.590×10^{6}
square miles	sq yards	3.098×10^{6}
square miles	township	0.2777
square millimeters	circular mils	1,973.0
square millimeters	sq cms	0.01
square millimeters	sq feet	1.076×10^{-5}
square millimeters	sq inches	1.550×10^{-3}
square mils	circular mils	1.273
square mils	sq cms	6.452×10^{-6}
square mils	sq inches	10^{6}
square rods	sq yards	30.25
square rods	roods	0.025
square yards	acres	2.006×10^{-4}
square yards	sq cms	8,361.0
square yards	sq feet	9.0
square yards	sq inches	1,296.0
square yards	sq meters	0.8361
square yards	sq miles	3.228×10^{-7}
square yards	sq millimeters	8.361×10^{5}
square yards	sq rods	0.03305
steres	cords	0.27586

T

To Convert	Into	Multiply By
temperature (°C) + 273	absolute temperature (°C)	1.0
temperature (°C) + 17.78	temperature (°F)	1.8
temperature (°F) + 460	absolute temperature (°F)	1.0
temperature (°F) – 32	temperature (°C)	5/9
tons (shipping)	cu feet	40
tons (long)	kilograms	1,016.0
tons (long)	pounds	2,240.0
tons (long)	tons (short)	1.120
tons (metric)	kilograms	1,000.0
tons (metric)	pounds	2,205.0
tons (short)	kilograms	907.1848
tons (short)	ounces	32,000.0
tons (short)	ounces (troy)	29,166.66
tons (short)	pounds	2,000.0
tons (short)	pounds (troy)	2,430.56
tons (short)	tons (long)	0.89287
tons (short)	tons (metric)	0.9078
tons (short)/sq ft	kgs/sq meter	9,765.0
tons (short)/sq ft	pounds/sq in	2,000.0
tons of water/24 hrs	pounds of water/hr	83.333
tons of water/24 hrs	gallons/min	0.16643
tons of water/24 hrs	cu ft/hr	1.3349
township	sq miles	36

V

To Convert	Into	Multiply By
Volt/inch	Volt/cm	.39370
Volt (absolute)	Statvolts	.003336

W

To Convert	Into	Multiply By
watts	Btu/hr	3.4129
watts	Btu/min	0.05688
watts	ergs/sec	107
watts	foot-lbs/min	44.27
watts	foot-lbs/sec	0.7378
watts	horsepower	1.341×10^{-3}
watts	horsepower (metric)	1.360×10^{-3}
watts	kg-calories/min	0.01433
watts	kilowatts	0.001
Watts (Abs)	BTU (mean)/min	0.056884
Watts (Abs)	joules/sec	1.0
watt-hours	Btu	3.413
watt-hours	ergs	3.60×10^{10}
watt-hours	foot-pounds	2,656.0
watt-hours	gram-calories	859.85
watt-hours	horsepower-hrs	1.341×10^{-3}
watt-hours	kilogram-calories	0.8605
watt-hours	kilogram-meters	367.2
watt-hours	kilowatt-hrs	0.001
Watt (International)	Watt (absolute)	1.0002
webers	maxwells	10^{8}
webers	kilolines	10^{5}
webers/sq in	gausses	1.550×10^{7}
webers/sq in	lines/sq in	10^{8}
webers/sq in	webers/sq cm	0.1550
webers/sq in	webers/sq meter	1,550.0
webers/sq meter	gausses	10^{4}
webers/sq meter	lines/sq in	$6,452 \times 10^{4}$
webers/sq meter	webers/sq cm	10^{-4}
webers/sq meter	webers/sq in	6.452×10^{-4}

Y

To Convert	Into	Multiply By
yards	centimeters	91.44
yards	feet	3.0
yards	kilometers	9.144×10^{-4}
yards	meters	0.9144
yards	miles (naut)	4.934×10^{-4}
yards	miles (stat)	5.682×10^{-4}
yards	millimeters	914.4
yards	rods	0.18181

Liquid Measure

	Minims	Drams	ounces	Gills	CC	Liter
1 Dram =	60	1	0.125	0.03125	3.69661	0.0037
1 Ounce =	480	8	1	0.25	29.5729	0.0296
1 Gill =	1920	32	4	1	118.292	0.1183
1 Milliliter =	16.231	0.2705	0.338	0.0084	1	0.001
1 Liter =	1623.1	270.518	33.8147	8.4536	1000	1
1 Pint =	7680	128	16	4	473.167	0.4731
1 Imp. Pint =	—	—	19.21	4.0803	568.095	0.568095
1 Quart =	—	—	32	8	946.333	.0946333
1 Imp. Quart =	—	—	38.43	9.607	1136.486	1.1365
1 Gallon =	—	—	128	32	3785.331	3.7853
1 Imp. Gallon =	—	—	153.72	38.430	4545.946	4.545946

Units of Capacity

Cubic Centimeters (CC) or Millileters (mL) to Ounces

mL/CC	ounces	mL/CC	ounces	mL/CC	ounces	mL/CC	ounces	mL/CC	ounces
1 =	.0338	7 =	.2367	25 =	.8453	100 =	3.3810	400 =	13.5240
2 =	.0676	8 =	.2705	30 =	1.0143	125 =	4.2263	500 =	16.9050
3 =	.1014	9 =	.3043	40 =	1.3524	150 =	5.0715	750 =	25.3575
4 =	.1352	10 =	.3381	50 =	1.6905	200 =	6.7620	1000 =	33.8100
5 =	.1591	15 =	.5072	60 =	2.0286	250 =	8.4525		
6 =	.2029	20 =	.6762	75 =	2.5358	300 =	10.1430		

Decimal Equivalents for Fractions of an Inch

1/2 ..... 0.5000	3/7..... 0.4286	6/11..... 0.5455	13/16..... 0.8125	31/64..... 0.4843
1/3..... 0.3333	3/8..... 0.3750	7/8..... 0.8750	13/32..... 0.4062	33/64..... 0.5156
1/4 ..... 0.2500	3/10..... 0.3000	7/9..... 0.7778	13/64..... 0.2031	35/64..... 0.5468
1/5 ..... 0.2000	3/11..... 0.2727	7/10..... 0.7000	15/16..... 0.9375	37/64..... 0.5781
1/6 ..... 0.1667	3/16..... 0.1875	7/11..... 0.6364	15/32..... 0.4687	39/64..... 0.6093
1/7..... 0.1429	3/32..... 0.0935	7/12..... 0.5833	15/64..... 0.2343	41/64..... 0.6406
1/8..... 0.1250	3/64..... 0.0468	7/16..... 0.4375	17/32..... 0.5312	43/64..... 0.6718
1/9..... 0.1111	4/5..... 0.8000	7/32..... 0.2187	17/64..... 0.2656	45/64..... 0.7031
1/10..... 0.1000	4/7..... 0.5714	7/64..... 0.1093	19/32..... 0.5937	47/64..... 0.7343
1/11..... 0.0909	4/9..... 0.4444	8/9..... 0.8889	19/64..... 0.2968	49/64..... 0.7656
1/12 ..... 0.0833	4/11..... 0.3636	8/11..... 0.7273	21/32..... 0.6562	51/64..... 0.7968
1/16 ..... 0.0625	5/6..... 0.8333	9/10..... 0.9000	21/64..... 0.3281	53/64..... 0.8281
1/32 ..... 0.0313	5/7..... 0.7143	9/11..... 0.8182	23/32..... 0.7187	55/64..... 0.8593
1/64 ..... 0.0156	5/8..... 0.6250	9/16..... 0.5625	23/64..... 0.3593	57/64..... 0.8906
2/3..... 0.6667	5/9..... 0.5556	9/32..... 0.2812	25/32..... 0.7812	59/64..... 0.9218
2/5..... 0.4000	5/11..... 0.4545	9/64..... 0.1406	25/64..... 0.3906	61/64..... 0.9531
2/7..... 0.2857	5/12..... 0.4167	10/11..... 0.9091	27/32..... 0.8437	63/64..... 0.9843
2/9..... 0.2222	5/16..... 0.3125	11/12..... 0.9167	27/64..... 0.4218	
2/11..... 0.1818	5/32..... 0.1562	11/16..... 0.6875	29/32..... 0.9062	
3/4..... 0.7500	5/64..... 0.0781	11/32..... 0.3437	29/64..... 0.4531	
3/5..... 0.6000	6/7..... 0.8571	11/64..... 0.1718	31/32..... 0.9687	

Power of Ten Prefixes

Prefix	Abbreviation	Value	Prefix	Abbreviation	Value
Exa	E	10^{18}	Deka	da	10^{1}
Peta	P	10^{15}	Deci	d	10^{-1}
Tera	T	10^{12}	Centi	c	10^{-2}
Giga	G	10^{9}	Milli	m	10^{-3}
Mega	M	10^{6}	Micro	µ	10^{-6}
Kilo	k	10^{3}	Nano	n	10^{-9}
Hecto	h	10^{2}	Pico	p	10^{-12}

CORK STOPPERS

For I.D. Opening (mm)	Size #	Diameter (mm) Bottom	Top	Length
3-4	0000	3	5	13
4-5	000	4	6	13
5-6	00	5	8	13
7-8	0	7	10	13
8-9	1	8	11	16
8-11	—	—	—	—
10-11	2	10	13	17
10-13	—	—	—	—
11-12	3	11	14	19
12-14	4	12	16	20
13-15	5	13	17	22
15-17	6	15	19	24
16-18	7	16	21	25
17-19	8	17	22	27
18-21	9	18	24	29
20-22	10	20	25	31
20-23	—	—	—	—
21-24	11	21	27	31
22-26	12	22	29	31
23-25	—	—	—	—
24-27	13	24	30	31
25-26	—	—	—	—
25-29	14	25	32	31
26-29	—	—	—	—
27-30	15	27	33	31
27-31	—	—	—	—
27-32	16	27	35	38
30-33	17	30	36	38
30-34	—	—	—	—
31-35	18	31	38	38
31-36	—	—	—	—
33-36	19	33	39	38
33-37	—	—	—	—
34-37	20	34	41	38
36-40	—	—	—	—
37-41	—	—	—	—
38-40	22	38	44	38
38-42	—	—	—	—
40-44	24	40	48	38
42-46	—	—	—	—
44-48	26	44	51	38
45-48	—	—	—	—
47-50	28	47	54	38
48-51	—	—	—	—
50-52	30	50	56	38
51-55	—	—	—	—
54-59	—	—	—	—
58-63	—	—	—	—
62-70	—	—	—	—
75-85	—	—	—	—
83-95	—	—	—	—
Special Kjeldahl Stoppers				
500 ml	—	—	—	—
800 ml	—	—	—	—

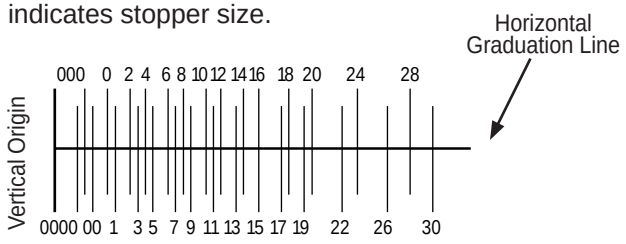
RUBBER STOPPERS

Size #	Diameter (mm) Bottom	Top	Length
—	—	—	—
—	—	—	—
—	—	—	—
—	—	—	—
—	—	—	—
000	8	13	21
—	—	—	—
00	10	15	26
—	—	—	—
—	—	—	—
0	13	17	26
1	15	19	26
2	16	20	26
—	—	—	—
3	18	24	26
—	—	—	—
4	20	26	26
—	—	—	—
—	—	—	—
5	23	27	26
—	—	—	—
5 1/2	25	29	26
—	—	—	—
6	26	32	26
—	—	—	—
6 1/2	27	34	26
—	—	—	—
—	—	—	—
7	30	37	26
—	—	—	—
7 1/2	31	39	26
—	—	—	—
8	33	41	26
—	—	—	—
8 1/2	36	43	26
9	37	45	26
—	—	—	—
9 1/2	38	46	26
—	—	—	—
10	42	50	26
—	—	—	—
10 1/2	45	53	26
—	—	—	—
11	48	56	26
—	—	—	—
11 1/2	51	60	26
12	54	64	26
13	58	67	26
13 1/2	62	75	35
14	75	90	39
15	83	103	39
500	26	32	34
800	28	39	35

Bore diameters for holed rubber stoppers - Size 0 and less - 3mm, Size 1 - 4mm, Size 2 and greater - 5mm, Spec. Kjeldahl - 8mm

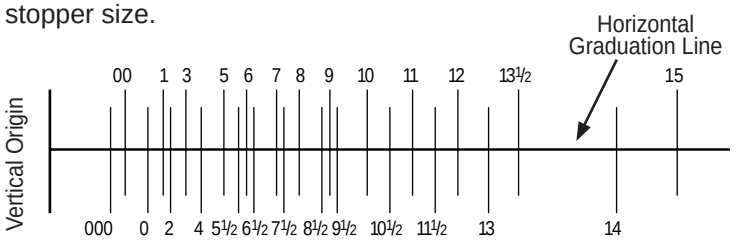
CORK STOPPER SIZER

Center the bottom of the stopper on the horizontal graduation line. Slide the stopper to the left to meet the vertical origin. The line at the point where the right side of the stopper intersects the horizontal graduation line indicates stopper size.



RUBBER STOPPER SIZER

Center the bottom of the stopper on the horizontal graduation line. Slide the stopper to the left to meet the vertical origin. The line at the point where the right side of the stopper intersects the horizontal graduation line indicates stopper size.



Physical Constants

Speed of light:	$c = 3.00 \times 10^{8}$ m/s
Gravitational constant:	$G = 6.67 \times 10^{-11}$ **N** • m^2/kg^2
Avagadro's number:	$N_A = 6.023 \times 10^{23}$ particle/g • atom
Boltzmann's constant:	$k = 1.3806 \times 10^{-23}$ **J/K**
Gas constant:	R = 8.314 **J**/g • mole • **K** = 1.9872 cal/g • mole • **K**
Planck's constant:	$h = 6.63 \times 10^{-34}$ **J** • sec
Electron charge:	$e = 1.60 \times 10^{-19}$ **C**
Electron rest mass:	$m_e = 9.11 \times 10^{-31}$ kg = 5.4858×10^{-4} u
Proton rest mass:	$m_p = 1.67 \times 10^{-27}$ kg = 1.00727 u
Neutron rest mass:	$m_n = 1.67 \times 10^{-27}$ kg = 1.00866 u
Coulomb's law constant:	$k = 9.0 \times 10^{9}$ **N** • m^2/C^2
Permeability constant:	$\mu_o = 4\pi \times 10^{-7}$ N/A^2
Standard gravitational acceleration:	$g = 9.81$ m/s^2 = 32.17 ft/s^2
Density of dry air (STP):	1.293 kg/m^3
Density of water (4°C):	1000 kg/m^3
Speed of sound in air n(0°C):	331.4 m/s

Chromatography Equations

Resolution Equation: $R = \dfrac{V_2 - V_1}{1/2(W_1 + W_2)}$

Resolution Equation: $R = 1/4(\alpha - 1)(\sqrt{N})\left(\dfrac{k'}{1+k'}\right)\left(\dfrac{\alpha}{\alpha}\right)$

Retention: $k' = \dfrac{V_1 - V_0}{V_0}$

Selectivity: $\alpha = \dfrac{k'_2}{k'_1} = \dfrac{V_2 - V_0}{V_1 - V_0}$

Column Efficiency: $N = 16(V_1 / W_1)^2$ = number of theoretical plates

Henderson-Hasselbalch Equation:

$pH = pK'_a + \log\dfrac{[\text{proton acceptor}]}{[\text{proton donor}]}$ or $pH = pK'_a + \log\dfrac{[\text{ionized form}]}{[\text{un-ionized form}]}$

where $pK'_a = \log K'_a$

Equilibrium Constants

Equilibrium Constant for Water: $Keq = \dfrac{[H+][OH-]}{H_2O}$

where Keq for water: 1.8×10^{-16} molar (M)

Equilibrium Constant for Acids: $Keq = \dfrac{[H+][X-]}{[HX]}$

Geometric Formulas

Area of circle (radius r):	πr^2
Area of sphere (radius r):	$4\pi r^2$
Volume of sphere:	$4\pi r^3/3$

IDENTIFICATION OF KIMBLE GLASSES

Information as to the type of glass from which a specific piece of apparatus is made is often required. The purpose may be to determine the glass with the best possible chemical durability, or the glassblower may wish to seal onto existing pieces of apparatus or create an entirely new piece, composed of several other parts. There are three relatively easy tests to determine glass type within your own laboratory.

Density Test
The densities of the Kimble laboratory glasses are:

KG-33	2.23 g/cm^3
N-51A	2.33 g/cm^3
KG-35	2.41 g/cm^3

KG-35 may be differentiated from N51A by the seam line on the surface of the item, and identifying marks on the bottom from the blow molding process. N51A will have neither of these characteristics. The other glasses are readily identified by the sink/float method. Small pieces of the glass or glasses to be checked are dropped into two liquids:

A) 2.30 specific gravity — (Mix 354 mL of triethylene glycol and 646 mL of s-tetrabromoethane.)

B) 2.44 specific gravity — (Mix 264 mL of triethylene glycol and 736 mL of s-tetrabromoethane.)

Liquid	Float	Sink
2.30	KG-33	N-51A (also KG-35)
2.44	KG-33 N-51A (also KG-35)	

Before using these liquids, their material safety data sheets should be consulted for proper handling precautions.

(The liquids should be stored in glass stoppered containers, preferably amber, at room temperature. Spillage should be avoided because the liquids damage painted surfaces.)

Differential Expansion (Dual Fiber) Test
Differences in the linear coefficients of expansion of the laboratory glasses may be used as a means of identification by lampworking; drawing a fiber with a standard known glass and observing the absence or presence of a curvature in the fiber.

PHYSICAL PROPERTIES OF GLASS

Glass is an inorganic product of fusion that has cooled to a rigid condition without crystallizing and, therefore, has no melting point as such. There are, however, four temperatures that are of interest to the glassblower. They are:

1. **The Working Point** — the temperature at which glass has a viscosity of 10^4 poises. At this temperature, glass is soft enough for most lampworking or sealing operations.

2. **The Softening Point** — the temperature at which glass has a viscosity of $10^{7.6}$ poises. In this temperature range glass will deform noticeably under its own weight: ASTM C 338.

3. **The Annealing Point** — the temperature at which the internal stress caused by rapid cooling from lampworking or forming temperatures may be substantially removed in a matter of minutes. It is determined by measuring the elongation rate versus temperature of a fiber of glass under conditions prescribed by ASTM Designation C 336. The values given herein are typical for production glasses.

4. **The Strain Point** — the temperature at which the internal strain in a glass is substantially relieved only after a matter of hours and not at a commercially desirable rate. It is determined by extrapolation of annealing point data for fiber elongation: ASTM C 336.

Table 2

Physical Properties of KG-33 and N-51A Glasses

	KG-33	N-51A
Working Point	1255°C	1140°C
Strain Point	513°C	530°C
Annealing Point	565°C	570°C
Softening Point	827°C	785°C
Linear Coefficient of Expansion (from 0 to 300°C), in./in./°C	32x10^{-7}	55x10^{-7}
Density grams per cm^3	2.22	2.33
Refractive Index—Sodium D line (.5893 microns)	1.47	1.49
Visible Light Transmission, 2 mm thickness	92%	91%
Specific Heat (in g. cals per g. deg.)	0.204 (25 to 175°C)	0.204 (25 to 175°C)
Thermal Conductivity (in cals/cm/cm^2/sec/°C)	0.0027	0.0026

Glass	Type	Principal Use	Working Point °C	Softening Point °C	Annealing Point °C	Strain Point °C	Expansion Coefficient 0-300 °C x10^{-7}/°C	Contraction Coefficient Annealing Point to 25°C x 10^{-7}/°C	Density g/cm3	Refractive Index Sodium D Line	Stress, Optical Coefficient mu/cm/ kg/cm2
Amber 203	Borosilicate	General Pharmaceutical Containers	1105	765	558	520	54	71	2.39	1.51	3.4
CA-2	Soda Lime	Pharmaceutical Container	1035	730	560	525	89	103	2.50	1.52	2.6
EN-1	Borosilicate	KOVAR Sealing	1120	716	482	437	47	63	2.27	1.48	4.1
EZ-1	Alumino-silicate	Molybdenum Sealing	1200	912	707	658	43	56	2.52	1.53	2.7
IN-3	Borosilicate	General	1020	710	521	479	56	71	2.32	1.49	3.4
KG-33	**Borosilicate**	**General**	**1255**	**827**	**565**	**513**	**32**	**35**	**2.23**	**1.47**	**3.7**
KG-35	Borosilicate	General	1065	739	567	528	61	75	2.41	1.50	3.1
N-51A	**Borosilicate**	**General**	**1140**	**785**	**570**	**530**	**55**	**70**	**2.33**	**1.49**	**3.5**
RN-3	Amber Borosilicate	Pharmaceutical Containers	1070	749	532	515	57	82	2.47	1.52	3.1
RS-7	Borosilicate	Diagnostic	1135	785	570	530	55	70	2.34	1.49	—

NOTE: All data subject to normal manufacturing variation.

Volume Resistivity ohm-cm Logarithm		Dielectric Properties 25 °C 1 Megahertz			Estimated Ð T Thermal Shock Resistance °C			Chemical Durability U.S.P. XIX mL N/50 H_2SO_4	Calculated Thermal Conductivity Units Expressed Cal/cm/cm²/ sec°Cx10^{-3}			Young's Modulus x 10^6 psi	Glass
250 °C	350 °C	K	Ð %	Loss Factor %	1/8" Thick	1/4" Thick	1/2" Thick		-100 °C	0 °C	100 °C		
7.4	6.0	5.7	0.60	3.4	105	85	60	0.44	2.0	2.5	2.8	10.3	Amber 203
6.7	5.4	7.1	0.71	5.1	70	55	35	5.9	2.0	2.5	2.7	11.1	CA-2
8.9	7.2	5.0	0.26	1.4	120	100	70	2.9	2.0	2.6	2.9	8.3	EN-1
10.5	8.7	6.3	0.37	2.3	135	115	75	0.65	2.8	3.3	3.1	12.7	EZ-1
7.2	5.7	5.4	0.61	3.3	105	85	55	1.3	2.0	2.5	2.8	10.0	IN-3
7.9	**6.4**	**4.6**	**0.48**	**2.2**	**180**	**150**	**100**	**0.20**	**2.1**	**2.7**	**3.1**	**9.5**	**KG-33**
6.8	5.6	6.1	1.20	7.2	105	85	55	0.60	2.0	2.5	2.8	10.5	KG-35
7.0	**5.7**	**5.8**	**0.84**	**4.9**	**105**	**85**	**60**	**0.36**	**2.0**	**2.6**	**2.9**	**10.4**	**N-51A**
7.0	5.7	6.5	0.90	5.9	95	80	55	0.70	2.0	2.2	2.8	10.4	RN-3
7.2	5.8	5.8	0.71	4.1	105	85	60	0.40	2.0	2.5	2.8	10.4	RS-7

Glossary of Glass Fabricating Terms

anneal—to prevent or remove objectionable stresses in glassware by controlled cooling from a suitable temperature.

annealing point, AP—the temperature corresponding to a rate of elongation of 0.0136 cm/min when measured by ASTM Method C 336, Test for Annealing Point and Strain Point of Glass by Fiber Elongation. This test prescribes a rate of cooling of approximately 4 C/min with a fiber of approximately 0.065 cm in diameter, and a suspended load of 1000 g. The annealing point numerically approximates log = 13.0 poises, where internal stress is substantially relieved in a few minutes.

annealing range—the range of glass temperature in which stresses in glass articles can be relieved at a commercially desirable rate. For purposes of comparing glasses, the annealing range is assumed to correspond with the temperatures between the annealing point (AP) and the strain point (StP).

batch—the raw materials, properly proportioned and mixed, for delivery to the furnace.

batch charger—a mechanical device for conducting batch to the furnace.

batch house—the place where batch materials are received, handled, weighed, and mixed, for delivery to melting units.

bead—(1) an enlarged, rounded edge of a tumbler or other glass article, or any raised section extending around the article. (2) a small piece of glass tubing used around a lead wire.

blank—(1) a parison or preliminary shape from which a finished article is further formed, or mold for producing same. (2) any article of glass on which subsequent forming or finishing is required.

blister—an imperfection, a relatively large bubble or gaseous inclusion.

bloom—a surface film resulting from attack by the atmosphere or from the deposition of smoke or other vapors.

blower—one who forms glass by blowing. (See also **gaffer**.)

blowpipe—the pipe used by a glassmaker for gathering and blowing by mouth. Also known as blowing iron.

blown glass—glassware shaped by air pressure, as by mouth blowing or by compressed air.

blow mold—the metal mold in which a blown glass article is finally shaped.

borosilicate glass—any silicate glass having at least 5% of boron oxide (B_2O_3), like Kimble KG-33 glass.

burn-off—the process of severing an unwanted portion of a glass article by fusing the glass.

chain marks—marks made on the bottoms of glass articles as they ride through a lehr on a chain belt slightly overheated.

check—an imperfection; a surface crack in a glass article.

chemical durability—the lasting quality (both physical and chemical) of a glass surface. It is frequently evaluated, after prolonged weathering or storing, in terms of chemical and physical changes in the glass surface, or in terms of changes in the contents of a vessel.

chip—an imperfection due to breakage of a small fragment out of an otherwise regular surface.

continuous tank—a glass furnace in which the level of glass remains constant because the feeding of batch continuously replaces the glass withdrawn.

Contraction Coefficient—is the decrease in length per unit length per °C change in temperature of the glass when it is cooled from the annealing point to 25°C. This figure is useful in considering the glass for sealing to metals or other materials, because the contraction characteristics influence the final stresses in such seals.

cord—an attenuated glassy inclusion possessing optical and other properties differing from those of the surrounding glass.

crack-off—the process of severing a glass article by breaking, as by scratching and then heating.

cullet—(1) waste or broken glass, usually suitable as an addition to raw batch. (2) foreign cullet — cullet from an outside source. (3) domestic cullet (factory cullet) — cullet from within the plant. (4) the portion of a glass article that will later be cut off and discarded or remelted.

Danner process—a mechanical process for continuously drawing glass cane or tubing from a rotating mandrel.

density—is the weight per unit volume and the values listed are reported in grams per cubic centimeter.

devitrification—crystallization in glass.

dielectric constant—is the ratio of the parallel capacitance of a capacitor with the material as the dielectric to the capacitance of the same capacitor with a vacuum as the dielectric. The dielectric constant determines the amount of electrostatic energy which can be stored in a material per unit volume per unit potential gradient.

dielectric loss factor—is the product of the dielectric constant and the dissipation factor. At low values (below 1) the dissipation factor is less than 5% different than the power factor so the power factor can be used for most calculations. The power lost in a dielectric is directly proportional to the loss factor if voltage gradient and frequency remain constant.

dielectric power factor—of a material is the cosine of the dielectric phase angle or its equivalent expressed in percent and represents the energy lost in the dielectric in an alternating current field.

distribution—the thicknesses of the walls of a glass article over its entire area.

down-draw—process of continuously drawing glass downward from an orifice.

dummy—a mechanical device, operated by the blower's feet, for wetting, raising, opening and closing the paste mold in mouth-blown glassware.

etch—to attack the surface of glass with hydrofluoric acid or other agent, generally for marking or decoration.

etched—(1) treated by etching. (2) weathered so that surface is roughened.

expansion coefficient—is the average increase in length per unit length per °C change in temperature over the range of 0 to 300°C. Since the expansion coefficient is affected slightly by annealing, the values given are for annealed glass.

filling point—the level up to which a glass bottle has the nominal capacity.

fine annealing—annealing to an extremely low stress and uniform index of refraction.

finish—(1) the part of a bottle for holding the cap or closure. (2) stage in melting process after glass appears free of seeds.

fire cracks—cracks in ware caused by local temperature shock.

fire-polish—to make glass smooth, rounded, or glossy by heating in a fire.

forming—the shaping of hot glass.

frosted surface—treated to scatter light or to simulate frost.

gaffer—head workman, foreman, or blower of a glass hand shop.

gather, n—the mass of glass picked up by the hand shop worker on the punty or blowing iron.

gather, v—to get glass from a pot or tank on the pipe or punty.

glass—an inorganic product of fusion that has cooled to a rigid condition without crystallizing.

Glass is typically hard and brittle, and has a conchoidal fracture. It may be colorless or colored, and transparent to opaque. Masses or bodies of glass may be made colored, translucent, or opaque by the presence of dissolved, amorphous, or crystalline material.

When a specific kind of glass is indicated, such descriptive terms as flint glass, barium glass, and window glass should be used following the basic definition, but the qualifying term is to be used as understood by trade custom.

Objects made of glass are loosely and popularly referred to as glass; such as glass for a tumbler, a barometer, a window, a magnifier, or a mirror.

glass-blowing—the shaping of hot glass by air pressure.

glory hole—an opening exposing the hot interior of a furnace used to reheat the ware in hand working.

gob—(1) a portion of hot glass delivered by a feeder. (2) a portion of hot glass gathered on a punty or pipe.

graduated glassware—glassware that is marked with one or more graduations for volumetric measuring purposes.

hackle marks—fine ridges on the fracture surface of glass, parallel to the direction of propagation of the fracture.

hard glass—(1) a glass of exceptionally high viscosity at elevated temperatures. (2) a glass of high softening point. (3) a glass difficult to melt. (4) a glass hard to scratch.

hot end—those manufacturing operations concerned with hot glass, that is, melting, forming, annealing.

lampworking—forming glass articles from tubing and cane by heating in a gas flame.

lehr, leer—a long, tunnel-shaped oven for annealing glass by continuous passage.

lime glass—a glass containing a substantial proportion of lime, usually associated with soda and silica, like Kimble R-6 glass.

liquidus temperature—the maximum temperature at which equilibrium exists between the molten glass and its primary crystalline phase.

melt—a specific quantity of glass made at one time.

melting temperature—the range of furnace temperatures within which melting takes place at a commercially desirable rate, and at which the resulting glass generally has a viscosity of 10^{15} to 10^{25} poises. For purposes of comparing glasses, it is assumed that the glass of melting temperature has a viscosity of 10^{2} poises.

moil—(1) the glass remaining on a punty or blowpipe after a gob has been cut off or after a piece of ware has been blown and severed. (2) the glass originally in contact with the blowing mechanism or head, which becomes cullet after the desired article is severed from it.

mold—a form (usually metal) in which glass is shaped.

mold mark—mark or seam on glassware resulting from a mold joint.

obsidian—a highly siliceous natural glass.

out-of-round—the imperfection of nonroundness in glass articles.

Owens process—a bottle-making process in which the blank or parison mold is filled by suction.

paddling the rough—shaping of a piece of glass in a furnace by means of paddles or tools preparatory to the pressing operation for making optical glass blanks.

paste mold—a mold lined with adherent carbon, used wet for blown ware.

peephole—a small opening in a furnace used for observation purposes.

pig—a rest for blowpipe or punty during the gathering operation.

pot—a one-piece refractory container for molten glass. Open pot: a pot wherein the glass surface is not protected from the furnace atmosphere. Closed pot: a pot having a crown protecting the glass from the furnace atmosphere.

pot furnace—a furnace for melting glass in pots.

pressed glass—glassware formed by pressure between a mold and a plunger.

pull—the quantity of glass delivered by a furnace in a given time, usually 24 hours.

punty—(1) a gathering iron of solid cross-section. (2) a device to which ware is attached for holding during fire polishing or finished.

reboil—reappearance of bubbles in molten glass after it previously appeared plain.

refractive index—is the ratio of the speed of light in vacuo to the speed of light in glass.. The value of the refractive index is given for the sodium D line (589.3 mu) and the values listed are for annealed glass.

ring—(1) a floating refractory body surrounding a glass surface from which gathers are made. (2) a mold part that forms the rim of a pressed article.

sagging process—of forming glass by reheating until it conforms to the shape of the mold or form on which it rests.

sealing surface—the portion of the finish which makes contact with the sealing gasket or liner. (See also **finish**.)

seam, n—mark on glass surface resulting from joint of matching mold parts.

seam, v—to slightly grind the sharp edges of a piece of glass.

seed—an extremely small gaseous inclusion of glass.

sharp fire—combustion with excess air and short flame.

shear mark—a scar appearing in glassware, caused by the cooling action of the cutting shear.

silica glass—vitreous silicon dioxide (SiO_2); quartz glass, pure silicon dioxide (SiO_2) glass.

silk screen process—a decorating process in which a design is printed on glass through a silk mesh, woven wire, or similar screen.

soda—sodium oxide (Na_2O). Loosely, a carbonate of sodium.

softening point, SP—the temperature at which a uniform fiber, 0.55 to 0.75 mm in diameter and 235 mm in length, elongates under its own weight at a rate of 1 mm/min when the upper 100 mm of its length is heated in the manner prescribed in ASTM Method C338. Test for Softening Point of Glass at a rate of approximately 5 C/min. For glass of density near 2.5, this temperature corresponds to a viscosity of 10^{76} poises.

stability—(1) resistance to devitrification. (2) chemical durability, resistance to weathering.

stain—(1) an imperfection; chemical corrosion on the surface of glass. (2) color applied to glass by absorption at an elevated temperature.

stones—an imperfection or crystalline contaminations in glass.

strain point, StP—the temperature corresponding to a rate of elongation of 0.00043 cm/min when measured by ASTM Method C 336. This test prescribed a linear extrapolation of the data obtained in the annealing point determination to the above designated rate. Internal stress is substantially relieved at the strain point in a few hours.

stress—any condition of tension or compression existing within the glass, particularly due to incomplete annealing, temperature gradient, or inhomogeneity.

stria—a cord of low intensity generally of interest only in optical glass. (See also **cord**.)

string—an imperfection; a straight or curled line, usually resulting from slow solution of a large grain of sand or foreign material.

tank—a melting unit, in which the container for the molten glass is constructed from refractory blocks.

temper—(1) the degree of residual stress in annealed glass measured polarimetrically or by polariscopic comparison with a standard such as one or more strain disks. (2) term sometimes employed in referring to tempered glass. (See also **tempered glass**.)

tempered glass—glass that has been rapidly cooled from near the softening point, under rigorous control, to increase its mechanical and thermal endurance.

Thermal Conductivity—data has been calculated for three temperatures from compositions.

thermal shock resistance—of the listed glasses is an estimated figure based on the expansion coefficient.

updraw—the process of continuously drawing glass of various cross sections, such as cane or tubing, by a method similar to the Fourcault process.

volume resistivity—is equivalent to the electrical resistance in ohms across a sample in the form of a cube one centimeter on a side. Because of the wide range of values obtained at the different temperatures, the log 10 of the volume resistivities are listed. Values are on annealed glass.

washboard—an imperfection; ripples, waves, etc., on the surface of glassware.

water glass—sodium silicate glass that is soluble in water.

wave—an optical effect due to uneven glass distribution, or to striae.

weathering—attack of a glass surface by atmospheric elements.

working range—the range of surface temperature in which glass is formed into ware in a specific process. The “upper end” refers to the temperature at which the glass is ready for working (generally corresponding to a viscosity of 10^3 to 10^4 poises), while the “lower end” refers to the temperature at which it is sufficiently viscous to hold its formed shape (generally corresponding to a viscosity greater than 10^6 poises). For comparative purposes, when no specific process is considered, the working range of glass is assumed to correspond to a viscosity range from 10^4 to 10^{76} poises.

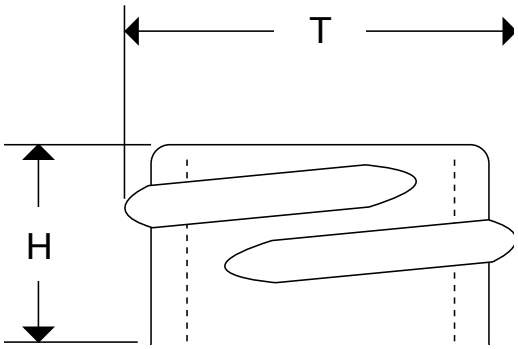
Young’s Modulus—the modulus of elasticity. The stress required to produce a unit change of length.

NOTE: For additional definitions of terms relating to glass and glass products, see ASTM Standard C162.

GPI THREAD FINISHES

GPI refers to the "Glass Packaging Institute" which is responsible for establishing and issuing uniform standards regarding the types of finishes produced by American Glass Manufacturers. GPI replaces the former GCMI or "Glass Container Manufacturers Institute". When a cap is designated as 15-425, it means that the diameter across the threaded area is approximately 15 millimeters. (See "T" dimension on illustration below.) The numerical 425 designates a specific style. The methods employed in manufacturing containers and culture tubes from tubing do not include a transfer ring as commonly observed on mold blown vessels. As a result the "H" dimension may vary slightly from GPI's published values. Since the "H" dimension is not designated in the size code, the chart below will assist in differentiating styles of finishes having similar thread diameters. The dimensions listed are averages. The finishes below appear in this catalog.

GPI Thread Finish Comparison Chart





400
425



430



415

"T" Dimension	"H" Measurements in millimeters (mm)				
	400	410	415	425	430
8				6.52	
10				6.86	
13			11.22	7.50	
15			13.90	7.50	
18	9.05	13.03	15.42		15.34
20	9.50	13.82	18.59		15.34
22	9.50	14.60	21.01		15.34
24	10.25	16.15	24.05		16.43
28	10.25	17.73	27.23		18.39
33	9.85				19.69
38	9.85				24.03
38					22.00

SUGGESTED SCREW CAP APPLICATION TORQUE

(Reference U.S.P. XXI, page 1240)

Cap Size (Millimeters)	Torque (Inch-Pounds)	Cap Size (Millimeters)	Torque (Inch-Pounds)
8*	3-5	38	15-23
10*	4-6	43	17-26
13*	5-7	48	19-29
15	6-9	53	21-32
18	7-11	58	23-35
20	8-12	63	25-38
22	9-13	70	28-42
24	10-15	83	34-49
28	11-17	89	36-53
33	13-20	120	48-72

* Not included in USP Table.

The figures at left are offered as guidelines for automatic capping machines. Obviously, variables such as cap and liner material and product characteristics play an important part in correct torque application.

The recommended procedure for checking capping machine torque application is as follows:

Apply caps to a representative number of product filled containers with the torque required. Then, the cap removal torque is established. Once the removal torque for a known application is established, the machine can be checked at intervals for proper application torque by measuring removal cap torque.

Standard Taper Symbol

℔ is the symbol used to designate "standard taper" interchangeable joints, stoppers and stopcocks, complying with the requirements of ASTM E675 for stopcocks, stoppers and reagent bottle necks and E676 for interchangeable joints. All mating parts are finished to a 1:10 taper.

The size of a particular piece appears after the appropriate symbol. Due primarily to the greater variety of apparatus equipped with ℔ fittings, a number of different types of identifications are used, as follows:

Apparatus and Bottles

- **For joints —** a two part number, as ℔ 24/40, with 24 being the approximate diameter in mm at the large end of the taper, and 40 the axial length of taper, also in mm.
- **For bottles —** a single number, as ℔ 19, with 19 being the approximate diameter in mm of the opening at top of neck.
- **For glass stopcocks —** a single number, as ℔ 2, with 2 being the approximate diameter in mm of the bore or bores through the plug.

Flasks

- **For volumetric and Erlenmeyer flasks, graduated cylinders, etc. —** a single number as ℔ 19, with 19 again being the approximate diameter in mm at top of neck; however, there are differences in dimensions between the bottle and flask stoppers, see the individuals listings in this catalog.

Spherical Joint Symbol

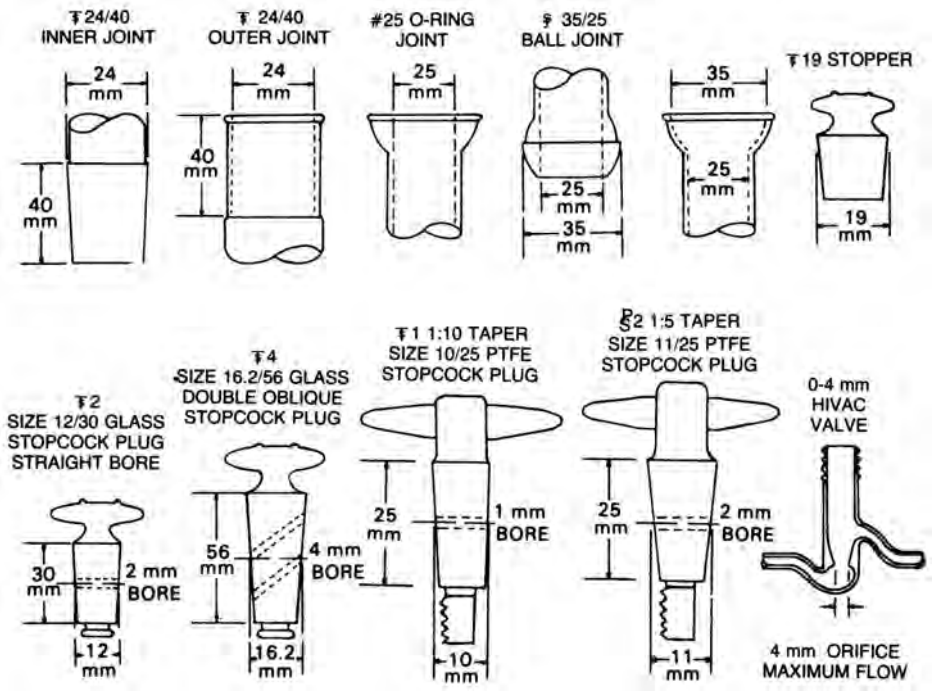
℘ is the designation for "spherical (semi-ball) joints" complying with ASTM E677.

The complete designation of a spherical joint also consists of a two part number, as ℘ 12/2, with 12 being the approximate diameter in mm of the ball and 2 the bore in mm of the ball and the socket.

Product Standard Symbol

℘ is the symbol used to designate "product standard" compliance. Kimble glass stopcocks with plugs made of PTFE meet the requirements of ASTM Specification E911. The symbol ℘ is used to designate that Kimble stopcocks comply with this standard. All mating parts are finished to a 1:5 taper.

Finally, for the PTFE plug ware, a single number is used, as with ℔ stopcocks. Thus, ℘ 2 means a stopcock with a bore of approximately 2 mm in the plug.



Standard Dimensions for Full-length Interchangeable Taper-Ground Joints

Standard Joint Size Number (Ⓢ Designation)	Approximate Diameter at Small End mm	Approximate Length of Ground Zone mm	Computed Diameter at Large End of Ground Zone (Gauging Point) mm
7/25	5	25	7.5
10/30	7	30	10.0
12/30	9.5	30	12.5
14/35	11	35	14.5
19/38	15	38	18.8
24/40	20	40	24.0
29/42	25	42	29.2
34/45	30	45	34.5
40/50	35	50	40.0
45/50	40	50	45.0
50/50	45	50	50.0
55/50	50	50	55.0
60/50	55	50	60.0
71/60	65	60	71.0
103/60	97	60	103.0

Standard Dimensions for Medium-length Interchangeable Taper-Ground Joints

Standard Joint Size Number (Ⓢ Designation)	Approximate Diameter at Small End mm	Approximate Length of Ground Zone mm	Computed Diameter at Large End of Ground Zone (Gauging Point) mm
5/12	3.8	12	5.0
7/15	6.0	15	7.5
10/18	8.2	18	10.0
12/18	10.7	18	12.5
14/20	12.5	20	14.5
19/22	16.6	22	18.8
24/25	21.5	25	24.0
29/26	26.6	26	29.2
34/28	31.7	28	34.5
40/35	36.5	35	40.0

Standard Dimensions for Short-length Interchangeable Taper-Ground Joints

Standard Joint Size Number (Ⓢ Designation)	Approximate Diameter at Small End mm	Approximate Length of Ground Zone mm	Computed Diameter at Large End of Ground Zone (Gauging Point) mm
5/8	4.2	8	5.0
7/10	6.5	10	7.5
10/7	9.3	7	10.0
10/10	9.0	10	10.0
12/10	11.5	10	12.5
14/10	13.5	10	14.5
19/10	17.8	10	18.8
24/12	22.8	12	24.0
29/12	28.0	12	29.2
34/12	33.3	12	34.5
40/12	38.8	12	40.0
45/12	43.8	12	45.0
50/12	48.8	12	50.0
55/12	53.8	12	55.0
60/12	58.8	12	60.0
71/15	69.5	15	71.0

Standard Dimensions for Interchangeable Spherical-Ground Joints

Standard Joint Size Number (Ⓢ Designation)	Nominal Diameter mm	Nominal Tube Diameter I.D. mm	Gauging Ball Diameter inches
7/1	7	1	.28125 ± .00005
12/1	12	1	.5000 ± .0001
12/1.5	12	1.5	.5000 ± .0001
12/2	12	2	.5000 ± .0001
12/3	12	3	.5000 ± .0001
12/5	12	5	.5000 ± .0001
18/7	18	7	.7500 ± .0001
18/9	18	9	.7500 ± .0001
28/12	28	12	1.1250 ± .00015
28/15	28	15	1.1250 ± .00015
35/20	35	20	1.3750 ± .00015
35/25	35	25	1.3750 ± .00015
40/25	40	25	1.6500 ± .00015
50/30	50	30	2.0000 ± .00015
65/40	65	40	2.5000 ± .0002
75/50	75	50	3.0000 ± .00025
102/75	102	75	4.0000 ± .0003

Standard Dimensions for Interchangeable Straight-bore Taper-Ground Stopcocks Standard

Standard Stopcock Number ($ Designation)	Diameter of Plug at Center Line of Bore mm	Length of Shell ±0.5 mm, mm	Diameter of Bore Hole in Plug mm
1M (Micro size)	7	20	1
1	12	30	1
1.5	12	30	1.5
2	12	30	2
3	17	40	3
4	17	40	4
5	20	44	5
6	20	44	6
8	25	52	8
10	35	56	10

Standard Dimensions for Interchangeable Single Oblique-bore Taper-Ground Stopcocks

Standard Stopcock Number ($ Designation)	Diameter of Plug at Gauging Point mm	Length of Shell ±0.5 mm, mm	Diameter of Bore Hole in Plug mm
1	12.60	40	1
1.5	12.60	40	1.5
2	12.60	40	2
3	17.35	50	3
4	17.35	50	4

Standard Dimensions for Interchangeable Double Oblique-bore (3-Way) Taper-Ground Stopcocks

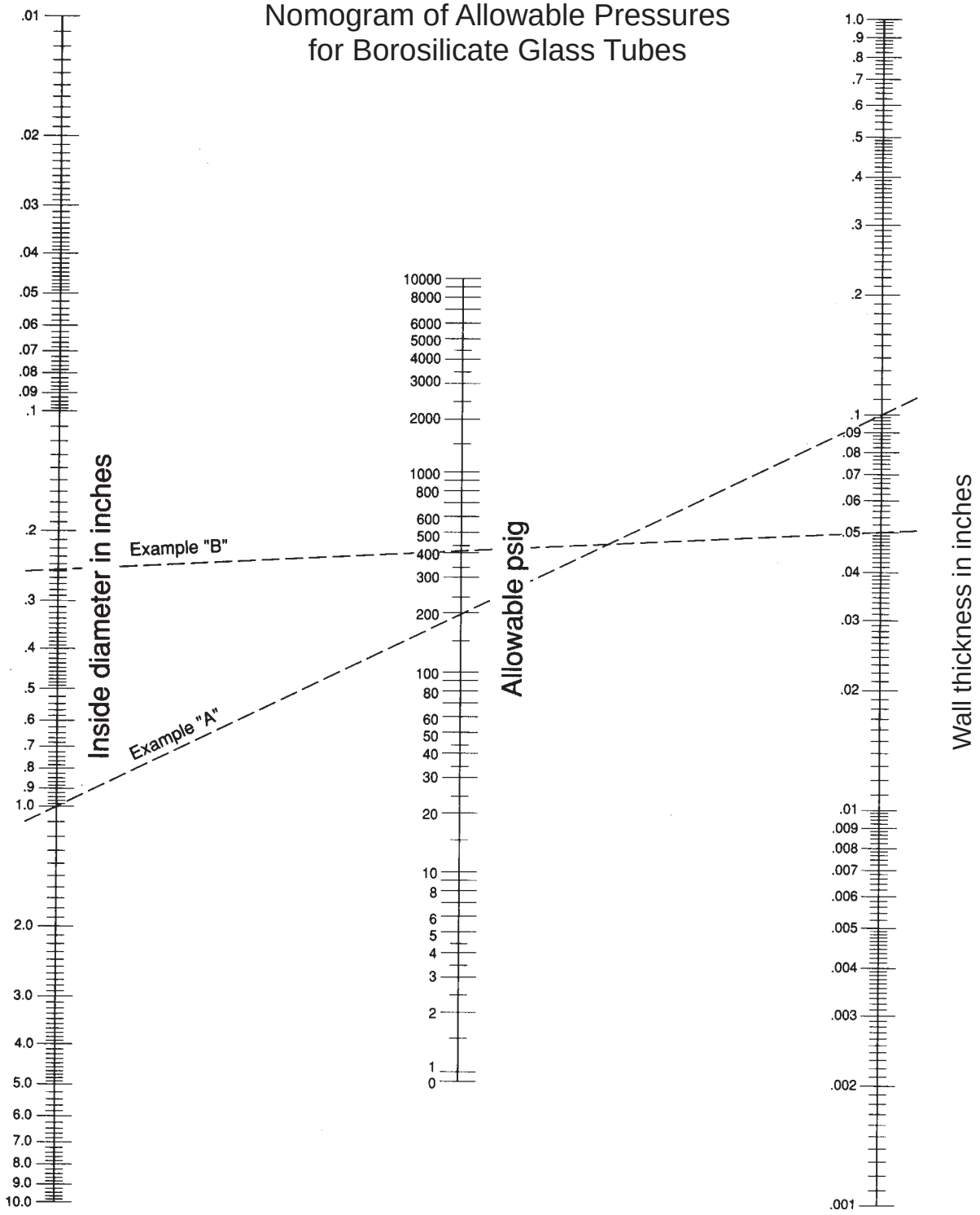
Standard Stopcock Number ($ Designation)	Diameter of Plug at Gauging Point mm	Length of Shell ±0.5 mm, mm	Diameter of Bore Hole in Plug mm
1	14.5	50	1
1.5	14.5	50	1.5
2	14.5	50	2
3	16.2	56	3
4	16.2	56	4

Standard Dimensions for Interchangeable T-bore and 120° bore Taper-Ground Stopcocks

Standard Stopcock Number ($ Designation)	Diameter of Plug at Gauging Point mm	Length of Shell ±0.5 mm, mm	Diameter of Bore Hole in Plug mm
1	17	40	1
1.5	17	40	1.5
2	17	40	2
3	20	44	3
4	20	44	4

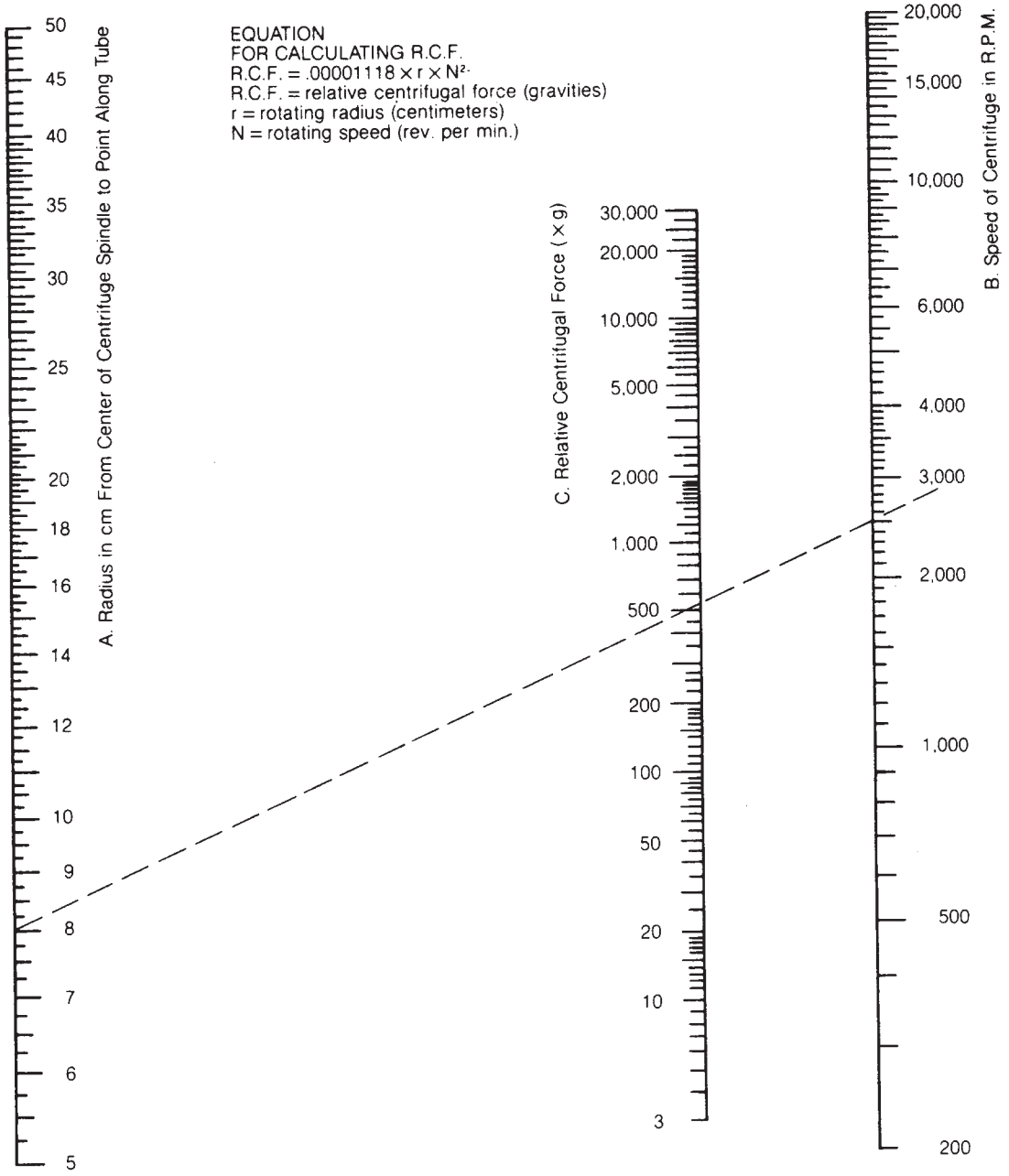
Standard Dimensions for Interchangeable Taper-Ground Flask Stoppers

Standard Flask Stopper Number ($ Designation)	Approximate Diameter at Small End mm	Length of Ground Zone mm	Computed Diameter at Large End of Ground Zone (Gauging Point) mm
8	7.25	10.0 ± 1.0	8.25
9	8	14.0 ± 1.0	9.4
13	12	14.0 ± 1.0	13.4
16	15	15.0 ± 1.0	16.5
19	18	17.0 ± 1.0	19.7
22	20	20.5 ± 1.5	22.05
27	25	21.5 ± 1.5	27.15
32	30	21.5 ± 1.5	32.15
38	35	30.0 ± 2.0	38.0



CAUTION: With any glassware used for pressure or vacuum applications, great care must be taken in handling. The strength of the glass can be degraded due to scratches, checks and abrasions. Always use protective shielding and eyewear when working with glass under pressure.

Nomogram for Computing Relative Centrifugal Forces



Sample Calculation

The relative centrifugal force (RCF) at a radial distance of 8cm from the center of centrifuge spindle when operating at a speed of 2500 r.p.m., may be determined by placing a straight edge on the nomogram connecting the 8cm point on the Radius from Center of Spindle Scale (A), with the 2500 r.p.m. point on the Speed Scale (B). The point of intersection on the Relative Centrifugal Force Scale (C), or 550g is the relative centrifugal force (550 x 32 = 17600 psi).

If the desired RCF is known, the speed of rotation for a given radius may be found by connecting the two known points and reading the Speed Scale at the intersection.

Properties of Plastics

Three different polyolefins are included in the plastics used by KIMBLE in our chromatography product line – low-density polyethylene (simply called polyethylene in the catalog descriptions), polypropylene, and polymethylpentene.

Low-density polyethylene (L.D.P.E.) is translucent and flexible. The latter property makes this material ideal for items such as our KIM-SNAP™ seals. This material is also known as conventional polyethylene.

Polypropylene (P.P.), the most rigid of the family of olefins, is also translucent, but can and does come in a variety of colors. This material is used for KIMBLE color-coded caps. Due to its stiffness and overall resistance to chemical attack at room temperature, polypropylene is the material of choice for selected closures.

Polymethylpentene (T.P.X.) is like other polyolefins, is highly resistant to chemical attack at room temperature. Transparency and a relatively high melting point are distinguishing characteristics of this material.

Polytetrafluoroethylene (PTFE) offers unique performance characteristics. This material performs well in aggressive chemical environments, and is totally insoluble with common organic solvents. It is also unaffected by reactive chemicals such as hot concentrated acids and bases.

Plastic Resin Codes

Abbreviation	Chemical Designation	Temp °C (Max)	Temp °C (lMin)	Autoclavable	Microwavable	Dry Heat	Gas	Gamma	Disinfectants
ABS	Acryl-Butadienestyrene	100	40	NO	YES	NO	YES	YES	YES
	Acetal	100	40	NO	YES	NO	YES	YES	YES
LDPE	Low Density Polyethylene	100	80	NO	YES	NO	YES	YES	YES
HDPE	High Density Polyethylene	120	100	NO	YES	NO	YES	YES	YES
NYL	Polyamide	90	0	NO	YES	NO	YES	YES	YES
PCTFE	Polychlorotrifluoroethylene	80	0	NO	YES	NO	YES	YES	YES
PC	Polycarbonate	135	0	YES	YES	NO	YES	YES	YES
PP	Polypropylene	135	0	YES	YES	NO	YES	NO	YES
PTFE	Polytetrafluoroethylene	250	267	YES	YES	YES	YES	YES	YES
PVC	Polyvinyl Chloride	70	30	NO	YES	NO	YES	NO	YES
PVDF	Polyvinyldene Fluoride	110	62	YES	YES	NO	YES	NO	YES
E-CTFE	Ethylene Chlortrifluoroethylene	150	105	YES	YES	YES	YES	NO	YES
ETFE	EthyleneTetrafluoroethylene	150	105	YES	YES	YES	YES	NO	YES
PFA	Perfluoroalkoxy	260	270	YES	YES	YES	YES	NO	YES
San	Styrene	95	20	NO	YES	NO	YES	YES	YES
PMP	Polymethylpentene (TPX)	175	70	YES	YES	NO	YES	YES	YES
PMMA	Polymethylmetyacrylate (PMMP)	50	0	NO	YES	NO	YES	YES	YES
PS	Polystyrene	90	20	NO	YES	NO	YES	YES	YES
PEEK	Polyetheretherketone	125	0	YES	YES	NO	YES	YES	YES
PVC	Polyvinylchloride	80	20	YES	YES	NO	YES	NO	YES
TFE	Tetrafluoroethylene	260	-267	YES	YES	YES	YES	YES	YES

A = NO EFFECT, EXCELLENT
B = MINOR EFFECT, GOOD
C = MODERATE EFFECT, FAIR
D = SEVERE EFFECT, NOT RECOMMENDED

Plastic Resin Solvent Compatibility Chart

We have designed this chart as a general guide and not an unqualified guarantee of chemical compatibility. Because so many factors can affect the chemical resistance of a given product, we recommend that you test under your own conditions. Kimble Chase assumes no responsibility for the use of this information in specific applications. Blank space indicates no data.

SOLVENT	ABS	Acetal	E-CTFE	ETFE	HDPE	LDPE	NYL	PC	PCTFE	PEEK	PMP (TPX)	PP	PTFE	PVC	PMMP	PS	SAN	TFE
Acetaldehyde	D	A	A	A	B	C	C	C	A	A	C	C	A	D	D	D	D	A
Acetic Anhydride	C	D	A	A	D	D	C	D	A	A	B	B	A	D	D	D	D	A
Acetone	D	D	A	B	C	C	B	D	A	A	A	A	A	D		D	D	A
Acid, Hydroflouric	C	D	A	A	A	A	D	D	A	A	A	B	A	B	D	D	C	A
Acid, Trifluoroacetic	D	C	C	C	C	D	D	D	A	A	D	D	A	D	D	D	D	A
Acid, Acetic Dilute 50%	A	C	B	B	A	A	D	B	A	A	A	A	A	B	D	B	D	A
Acid, Hydrochloric 37%	C	D	A	A	A	A	D	D	A	A	B	B	A	B	A	C	C	A
Acid, Nitric	B	D	A	A	B	C	D	B	A	A	A	B	A	B	C	C	C	A
Acid, Sulfuric	D	D	A	A	A	B	D	C	A	A	B	C	A	B	D	C	D	A
Actonitrile	D	D	A	A	A	A	A	D		A	C	C	A	D		D	C	A
Alcohol, Ethyl	A	D	A	A	A	B	D	B	A	A	B	B	A	B	B	B	C	A
Alcohol, Isobutyl	A	A	A	A	A	A	D	B	A	A	A	A	A	B	B	B		A
Alcohol, Methyl	D	B	A	A	A	A	D	B		A	A	A	A	B	D	C	C	A
Alcohol, n-Buty	A	A	A	A	A	A	D	C	A	A	B	A	A	A	B	B	B	A
Alcohol, Propyl	B	A	A	A	A	A	D	D	A	A		A	A	A		A		A
Ammonium Hydroxide	B	A	A	A	A	A	C		A	A	B	B	A	B	C	B	D	A
Aniline	D	B	A	A	B	B	B	B	A	A	B	B	A	B	D	D	D	A
Aqua Regia	D	D	B	C	C	D	D	D	A	A	D	D	A	C		D		A
Benzaldehyde	B	A	B	B	A	B	B	C	A		B	A	A	D		D	D	A
Benzene	D	A	B	B	D	D	A	D	B	A	B	B	D	A		D	D	A
Carbon Tetrachloride	D	B	A	A	C	B	A	D	A	A	D	B	A	B	D	D	D	A
Caustic Soda (NaOH)	B	B	A	A	A	B	B	D	A	A	A	A	A	D	D	A	D	A
Chlorobenzene	D	D	B	B	C	D	B	D	A	A	C	D	A	D		D		A
Cloroform	D	B	B	B	C	C	D	D	B	A	D	B	A	C		D	D	A
Cyclohexane	A	A	B	B	C	C	A	D	A	A	D	C	A	D	D	D		A
Esters	D	D	A	A	B	B	A	D	B	A	B	B	A	C		D		A
Ether	D	A	B	B	C	D	A	C	B	A	D	D	A	D		D	D	A
Ether, Diethyl	D	D	B	B	D	A	C	D	C	A	D	D	A	D	C	D	D	A
Ether, Isopopyl	B	A	A	A	A	A	B	A	A	A	A	D	A	A	A	A	A	A
Ethtyl, Methyl	D	B	A	A	B	A	B	D	A	A	D	B	A	D	D	D	D	A
Hexane	D	B	A	A	B	D	A	C	A	A	C	B	A	C	C	D	A	A
Hydrazine	B	B	A	A				D	B	A	D	C	A	C	D	D		A
Hydrogen Peroxide	B	B	A	A	A	D	B	A	A	A	A	A	A	A	A	B		A
Methylene Chloride	D	B	A	A	C	D	A	D	A	D	C	C	A	D	C	D	D	A
Petroleum Ether	B	A	A	A	A	B	A	A		A		A	A	B	D	B		A
Phenol	D	C	A	A	D	D	D	D	A	A	D	D	A	C	D	C	D	A
Sodium Hydroxide	B	D	A	A	A	B	B	D	A	A	A	B	A	B	D	A	C	A
Tetrahydrofuran	D	A	A	A	B	C	A	D	A	D	C	B	A	D	D	D	D	A
Toluene	D	B	A	A	B	C	C	D	A	A	C	C	A	D	D	D		A
Trichloroethylene	D	B	B	B	C	D	B	D	A	A	D	D	A	D	D	D	D	A
Trimethylpentane,2,2,4	D	C	B	B	C	C	A	D		A	C	C	A	D	D	D	D	A
Water	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Xylene	D	A	A	A	C	D	A	D	A	A	C	C	A	D	D	D	D	A

Elastomer Codes

Abbreviation	Chemical Designation	Temp °C (Max)	Temp °C (lMin)	Autoclavable	Microwavable	Dry Heat	Gas	Gamma	Disinfectants
FKM	Fluorelastomer	204	-23	YES	YES	YES	YES	YES	YES
FFKM	Perfluoroelastomer	343	-40	YES	YES	YES	YES	YES	YES
PF75	Perfluoroelastomer	265	-40	YES	YES	YES	YES	YES	YES
EPDM	Ethylene Propylene (EPDM, EP)	135	-50	YES	YES	NO	YES	YES	YES
CR	Neoprene	93	-40	NO	YES	NO	YES	YES	YES
Si	Silicone	230	-40	YES	YES	YES	YES	YES	YES
NBR	Buna N (NITRILE)	150	-54	YES	YES	NO	YES	YES	YES
CSPE	Hypalon	135	0	YES	YES	NO	YES	YES	YES
PCTFE	Polychlorotrifluoroethylene	150	0	YES	YES	NO	YES	YES	YES
	Natural Rubber	135	0	YES	YES	NO	YES	YES	YES
	Tygon	100	0	NO	YES	NO	YES	YES	YES

Sterilization Reference Guide

Method	Procedure
Autoclave:	cycle is 121 °C,15 psig (1bar) 20 min
Dry Heat:	170 °C for 60 min
Gas:	Ethylene Oxide or formaldehyde
Microwave:	Transmission of microwaves
Gamma Irradiation:	High energy ionizing gamma radiation from a Cobolt 60 source
Chemical Disinfectants:	Quaternay Ammonim Compounds, Iodophors, Formalin, Benzalkonium Chloride, Ethanol, etc.

Elastomers Solvent Compatibility Chart

We have designed this chart as a general guide and not an unqualified guarantee of chemical compatibility. Because so many factors can affect the chemical resistance of a given product, we recommend that you test under your own conditions. KIMBLE CHASE assumes no responsibility for the use of this information in specific applications. Blank space indicates no data.

A = NO EFFECT, EXCELLENT
B = MINOR EFFECT, GOOD
C = MODERATE EFFECT, FAIR
D = SEVERE EFFECT, NOT RECOMMENDED

SOLVENT	ELASTOMER MATERIAL	FKM	FFKM	PF75	EPDM, EP	Polychloroprene	Silcone	Buna N (nitrile)	CSPE (chlorosulfanated polyethylene)	PCTFE	Natural Rubber	Tygon®
Acetaldehyde		D	A	A	A	D	A	D	D	A	C	D
Acetic Anhydride		D	A	A	B	A	C	D	A	A	C	D
Acetone		D	A	A	A	C	B	D	C	A	C	D
Acid, Hydroflouric		C	A	A	D	D	D	D	B	A	B	C
Acid, Trifluoroacetic		B	A	A	A					A		
Acid, Acetic Dilute 50%		B	A	A	A	C	B	C	C	A	C	D
Acid, Hydrochloric 37%		A	A	A	D	D	D	D	D	A	D	D
Acid, Nitric		A	A	A	D	D	D	D	D	A	D	D
Acid, Sulfuric		A	A	A	B	D	D	C	C	A	D	D
Actonitrile		D	A	A	A	C	B	D	C	A	C	D
Alcohol, Ethyl		A	A	A	A	A	B	C	A	A	A	C
Alcohol, Isobutyl		A	A	A	A	A	A	A	A	A	A	A
Alcohol, Methyl		C	A	A	A	A	A	A	A	A	A	A
Alcohol, n-Buty		A	A	A	B	C	B	C	A	A	A	A
Alcohol, Propyl		A	A	A	A	A	A	A	A	A	A	A
Ammonium Hydroxide		B	A	A	A	A		A	A	A	A	A
Aniline		A	A	A	B	D	B	D	D	A	D	D
Aqua Regia		B	A	A	C	B	D	D	C	A	B	D
Benzaldehyde		D	A	A	A	D	D	D	D	A	D	D
Benzene		A	A	A	D	D	D	D	D	B	D	C
Carbon Tetrachloride		A	A	A	D	D	D	D	D	A	D	B
Caustic Soda (NaOH)		B	A	A	B	B	A	D	A	A	A	A
Chlorobenzene		A	A	A	D	D	D	D	D	A	D	A
Cloroform		A	A	A	D	D	D	D	D	B	D	B
Cyclohexane		A	A	A	D	D	D	B	D	A	D	D
Esters		D	A	A	B	D	B	D	D	A	C	D
Ether		C	A	A	C	D	D	D	D	B	D	C
Ether, Diethyl		D	A	A	D	D	D	D	D	C	D	D
Ether, Isopopyl		D	A	A	D	D	D	B	C	A	A	A
Ethtyl, Methyl Ketone		D	A	A	D	D	D	D	D	A	D	D
Hexane		A	A	A	D	B	D	A	B	A	D	D
Hydrazine		A	A	A	A	B	B	B	B		C	
Hydrogen Peroxide		A	A	A	D	D	B	D	D	A	C	B
Methylene Chloride		B	A	A	C			D		A	B	D
Petroleum Ether		A	A	A	A	A	D	A			D	
Phenol		D	A	A	B	D	D	D	D	B	A	B
Sodium Hydroxide		B	A	A	B	B	A	A	A	B	A	C
Tetrahydrofuran		D	A	A	D	D	D	D	D	A	D	
Toluene		C	A	A	D	D	D	D	D	B	D	D
Trichloroethylene		A	A	A	D	D	D	D	D	A	D	
Trimethylpentane,2,2,4		C	A	A	D	D	D	D	D	A	D	D
Water		A	A	A	A	A	A	A	A	A	A	A
Xylene		D	A	A	D	D	D	D	D	A	D	D

THERMOMETER IMMERSION AND STEM CORRECTIONS

Thermometer Immersion
Thermometers are calibrated for use either as total or partial immersion instruments. Total immersion requires that the thermometer fluid be totally immersed in the medium of use. The stem above the thermometer fluid need not be immersed, and for gas-filled thermometers, at higher temperatures. It is not at all advisable. (Gas filled thermometers are usually nitrogen filled to retard mercury vaporization.) In practice, the fluid column is permitted to extend a short distance above the medium to allow better meniscus observation.

Partial immersion thermometers were developed for use in standardized tests when uniformity of procedure rather than known temperature value, is the important factor. A specific immersion depth is marked on each thermometer, and generally a calibration mark is also provided on the stem.

Stem Correction
When a total immersion thermometer is used with a portion of the thermometer fluid at a different temperature from the bulb, an emergent stem correction must be applied to the reading. The correction may be as high as 20°C if the thermometer fluid height, expressed in degrees, and temperature gradient are large.

$T_c = T_o + K \times n(T_o - T_m)$ where

T_c = corrected temperature
T_o = observed temperature
T_m = average temperature of fluid column of n degrees
n = number of degrees above the surface of the medium
K = differential expansion coefficient in the thermometer

(The value of K for mercury filled thermometers is 0.00016 for Celsius scales and 0.00009 for Fahrenheit scales. T_m may be estimated by a second thermometer.)

TEMPERATURE CONVERSION TABLES

Instructions for Temperature Conversion Table

Read temperature using numbers in center column.

Convert to Celsius by reading numbers to left.

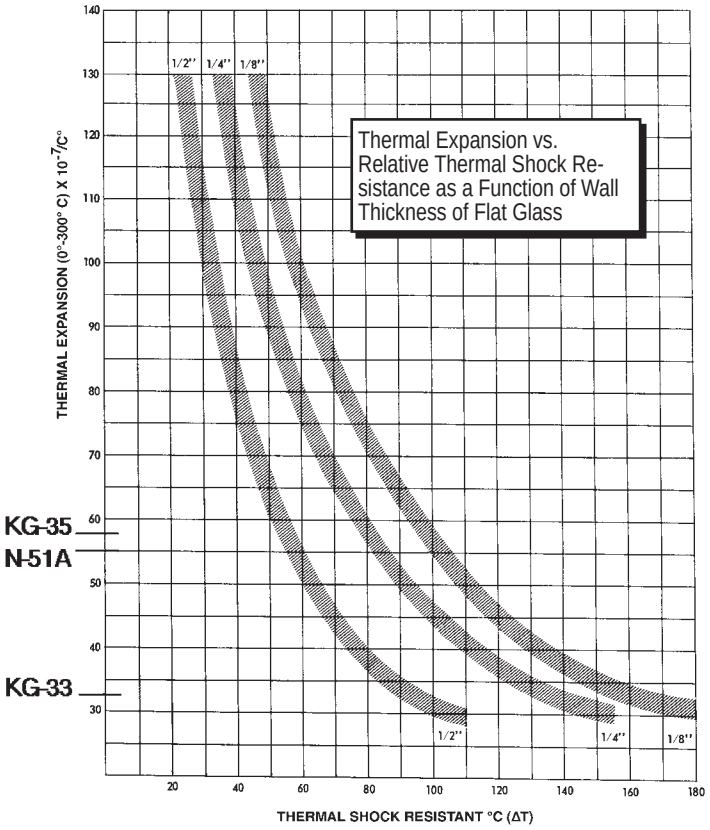
Convert to Fahrenheit by reading numbers on right.

Degrees Fahrenheit = (1.8 x deg. Cel.) + 32.

Degrees Celsius = .555 (deg. Fahr. – 32)

Interpolation Table
Use to determine intermediate temperatures not given in main Temperature Conversion Table.

C		F
0.56	1	1.8
1.11	2	3.6
1.67	3	5.4
2.22	4	7.2
2.78	5	9.0
3.33	6	10.8
3.89	7	12.6
4.44	8	14.4
5.00	9	16.2
5.55	10	18.0
6.11	11	19.8
6.66	12	21.6
7.22	13	23.4
7.77	14	25.2
8.33	15	27.0
8.88	16	28.8
9.44	17	30.6
9.99	18	32.4
10.55	19	34.2



Thermal shock is a cause of glass breakage. This chart attempts to quantify what differential temperature (ÐT) each glass type can withstand under average or normal conditions. If the surface of the glass is damaged (prime cause scratches) the shock resistance is significantly reduced.

Radius points are stress accumulators, i.e. the greater or more acute the angle, the greater the probability of breakage to occur at that point if the differential temperature (between inner and outer surface) is exceeded.

See Instructions and Interpolation Table on previous page.

C		F
-73.3	-100	-148.0
-72.7	- 99	-146.2
-72.1	- 98	-144.4
-71.6	- 97	-142.6
-71.0	- 96	-140.8
-70.5	- 95	-139.0
-69.9	- 94	-137.2
-69.4	- 93	-135.4
-68.8	- 92	-133.6
-68.3	- 91	-131.8
-67.7	- 90	-130.0
-67.2	- 89	-128.2
-66.6	- 88	-126.4
-66.0	- 87	-124.6
-65.5	- 86	-122.8
-64.9	- 85	-121.0
-64.4	- 84	-119.2
-63.8	- 83	-117.4
-63.3	- 82	-115.6
-62.7	- 81	-113.8
-62.2	- 80	-112.0
-61.6	- 79	-110.2
-61.1	- 78	-108.4
-60.5	- 77	-106.6
-59.9	- 76	-104.8
-59.4	- 75	-103.0
-58.8	- 74	-101.2
-58.3	- 73	- 99.4
-57.7	- 72	- 97.6
-57.2	- 71	- 95.8
-56.6	- 70	- 94.0
-56.1	- 69	- 92.2
-55.5	- 68	- 90.4
-54.9	- 67	- 88.6
-54.4	- 66	- 86.8
-53.8	-65	-85.0
-53.3	-64	-83.2
-52.7	-63	-81.4
-52.2	-62	-79.6
-51.6	-61	-77.8
-51.1	-60	-76.0
-50.5	-59	-74.2
-50.0	-58	-72.4
-49.4	-57	-70.6
-48.8	-56	-68.8
-48.3	-55	-67.0
-47.7	-54	-65.2
-47.2	-53	-63.4
-46.6	-52	-61.6
-46.1	-51	-59.8
-45.5	-50	-58.0
-45.0	-49	-56.2
-44.4	-48	-54.4
-43.8	-47	-52.6
-43.3	-46	-50.8
-42.7	-45	-49.0
-42.2	-44	-47.2
-41.6	-43	-45.4
-41.1	-42	-43.6
-40.5	-41	-41.8
-40.0	-40	-40.0
-39.4	-39	-38.2
-38.9	-38	-36.4
-38.3	-37	-34.6
-37.7	-36	-32.8
-37.2	-35	-31.0
-36.6	-34	-29.2
-36.1	-33	-27.4
-35.5	-32	-25.6
-35.0	-31	-23.8
-34.4	-30	-22.0
-33.9	-29	-20.2
-33.3	-28	-18.4
-32.7	-27	-16.6
-32.2	-26	-14.8
-31.6	-25	-13.0
-31.1	-24	-11.2

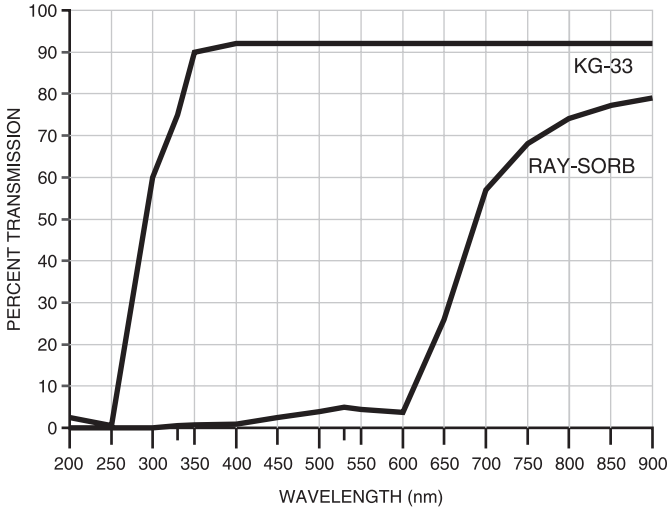
C		F
-30.5	-23	- 9.4
-30.0	-22	- 7.6
-29.4	-21	- 5.8
-28.9	-20	- 4.0
-28.3	-19	- 2.2
-27.8	-18	- 0.4
-27.2	-17	1.4
-26.6	-16	3.2
-26.1	-15	5.0
-25.5	-14	6.8
-25.0	-13	8.6
-24.4	-12	10.4
-23.9	-11	12.2
-23.3	-10	14.0
-22.8	- 9	15.8
-22.2	- 8	17.6
-21.7	- 7	19.4
-21.1	- 6	21.2
-20.6	- 5	23.0
-20.0	- 4	24.8
-19.4	- 3	26.6
-18.9	- 2	28.4
-18.3	- 1	30.2
-17.8	0	32.0
-17.2	1	33.8
-16.7	2	35.6
-16.1	3	37.4
-15.6	4	39.2
-15.0	5	41.0
-14.4	6	42.8
-13.9	7	44.6
-13.3	8	46.4
-12.8	9	48.2
-12.2	10	50.0
-11.7	11	51.8
-11.1	12	53.6
-10.6	13	55.4
-10.0	14	57.2
- 9.4	15	59.0
- 8.9	16	60.8
- 8.3	17	62.6
- 7.8	18	64.4
- 7.2	19	66.2
- 6.6	20	68.0
- 6.1	21	69.8
- 5.6	22	71.6
- 5.0	23	73.4
- 4.4	24	75.2
- 3.9	25	77.0
- 3.3	26	78.8
- 2.8	27	80.6
- 2.2	28	82.4
- 1.7	29	84.2
- 1.1	30	86.0
- 0.6	31	87.8
0.0	32	89.6
1.1	33	91.4
1.6	34	93.2
1.7	35	95.0
2.2	36	96.8
2.8	37	98.6
3.3	38	100.4
3.9	39	102.2
4.4	40	104.0
5.0	41	105.8
5.6	42	107.6
6.1	43	109.4
6.7	44	111.2
7.2	45	113.0
7.8	46	114.8
8.3	47	116.6
8.9	48	118.4
9.4	49	120.2
10.0	50	122.0
10.6	51	123.8
11.1	52	125.6
11.7	53	127.4

C		F
12.2	54	129.2
12.8	55	131.0
13.3	56	132.8
13.9	57	134.6
14.4	58	136.4
15.0	59	138.2
15.6	60	140.0
16.1	61	141.8
16.7	62	143.6
17.2	63	145.4
17.8	64	147.2
18.3	65	149.0
18.9	66	150.8
19.4	67	152.6
20.0	68	154.4
20.6	69	156.2
21.1	70	158.0
21.7	71	159.8
22.2	72	161.6
22.8	73	163.4
23.3	74	165.2
23.9	75	167.0
24.4	76	168.8
25.0	77	170.6
25.6	78	172.4
26.1	79	174.2
26.7	80	176.0
27.2	81	177.8
27.8	82	179.6
28.3	83	181.4
28.9	84	183.2
29.4	85	185.0
30.0	86	186.8
30.6	87	188.6
31.1	88	190.4
31.7	89	192.2
32.2	90	194.0
32.8	91	195.8
33.3	92	197.6
33.9	93	199.4
34.4	94	201.2
35.0	95	203.0
35.6	96	204.8
36.1	97	206.6
36.7	98	208.4
37.2	99	210.2
37.8	100	212.0
40.6	105	221.0
43.3	110	230.0
46.1	115	239.0
48.9	120	248.0
51.7	125	257.0
54.4	130	266.0
57.2	135	275.0
60.0	140	284.0
62.8	145	293.0
65.6	150	302.0
68.3	155	311.0
71.1	160	320.0
73.9	165	329.0
76.7	170	338.0
79.4	175	347.0
82.2	180	356.0
85.0	185	365.0
87.8	190	374.0
90.6	195	383.0
93.3	200	392.0
96.1	205	401.0
98.9	210	410.0
101.7	215	419.0
104.4	220	428.0
107.2	225	437.0
110.0	230	446.0
112.8	235	455.0
115.6	240	464.0
118.3	245	473.0
121.1	250	482.0

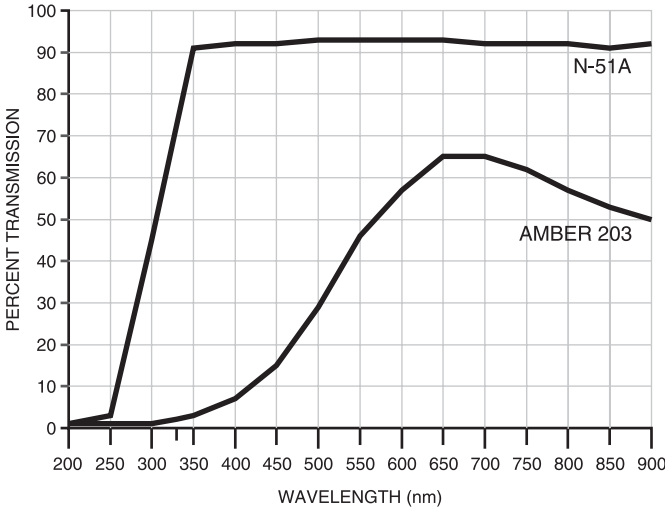
C		F
123.9	255	491.0
126.7	260	500.0
129.4	265	509.0
132.2	270	518.0
135.0	275	527.0
137.8	280	536.0
140.6	285	545.0
143.3	290	554.0
146.1	295	563.0
148.9	300	572.0
154.4	310	590.0
160.0	320	608.0
165.6	330	626.0
171.1	340	644.0
176.7	350	662.0
182.2	360	680.0
188.2	370	698.0
193.3	380	716.0
198.9	390	734.0
204.4	400	752.0
210.0	410	770.0
215.6	420	788.0
221.1	430	806.0
226.7	440	824.0
232.2	450	842.0
237.8	460	860.0
243.3	470	878.0
248.9	480	896.0
254.4	490	914.0
260.0	500	932.0
265.0	510	950.0
271.0	520	968.0
276.0	530	986.0
282.0	540	1004.0
288.0	550	1022.0
293.0	560	1040.0
299.0	570	1058.0
304.0	580	1076.0
310.0	590	1094.0
315.0	600	1112.0
321.0	610	1130.0
326.0	620	1148.0
332.0	630	1166.0
338.0	640	1184.0
343.0	650	1202.0
348.5	660	1220.0
354.0	670	1238.0
359.6	680	1256.0
365.2	690	1274.0
370.7	700	1292.0
381.8	720	1328.0
392.9	740	1364.0
404.0	760	1400.0
415.1	780	1436.0
426.2	800	1472.0
437.3	820	1508.0
448.4	840	1544.0
459.5	860	1580.0
470.6	880	1616.0
481.7	900	1652.0
492.8	920	1688.0
503.9	940	1724.0
515.0	960	1760.0
526.1	980	1796.0
537.2	1000	1832.0
548.3	1020	1868.0
559.4	1040	1904.0
570.5	1060	1940.0
581.6	1080	1976.0
592.7	1100	2021.0
603.8	1120	2048.0
614.9	1140	2084.0
626.0	1160	2120.0
637.1	1180	2156.0
648.2	1200	2192.0
659.3	1220	2228.0
670.4	1240	2264.0

TRANSMISSION VS. WAVELENGTH

KG-33 vs. RAY-SORB

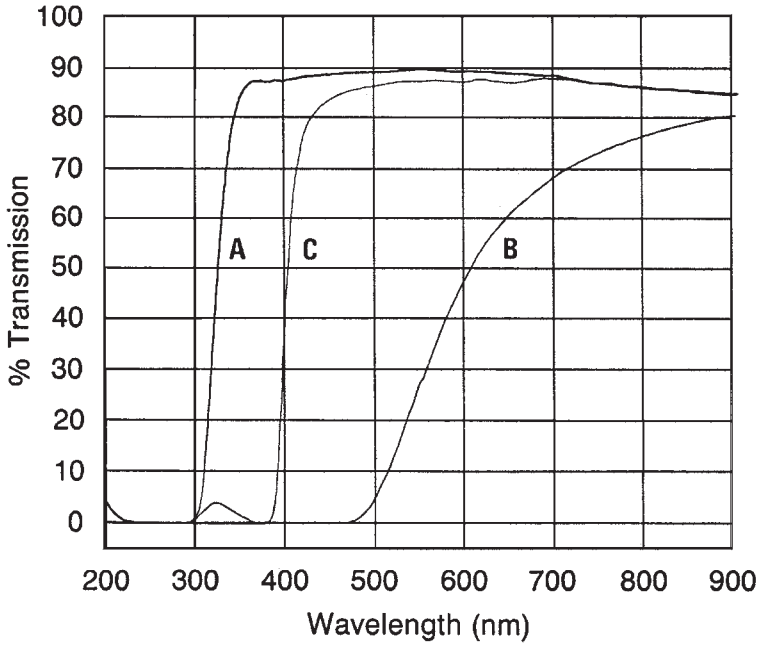


N-51A vs. AMBER 203



For comparison, samples are 1 mm in thickness.

UV Absorbing Performance of Plastic Coated ULTRA-WARE® and Amber Stained Borosilicate Glass



Percent transmission of UV and visible wavelengths through borosilicate glass, (A) clear borosilicate glass; (B) amber stained borosilicate glass; and (C) borosilicate glass coated with plastic that is UV absorbing and autoclavable.

Curve C represents the UV and visible transmission characteristics of the plastic coated Ultra-ware HPLC reservoirs. Notice that the plastic coated Ultra-ware HPLC reservoirs absorb all UV up to about 385 nm, whereas amber stained glass transmits up to 4% of UV in the 300-350 nm region.

KIMBLE CHASE amber stain capabilities include the staining of any borosilicate product. Call 888-546-2531 for details.

WEIGHING BOTTLES

A Complete Line of Weighing Bottles to Satisfy Every Laboratory Need

- Kimble offers the most complete line of weighing bottles, in both styles and sizes, which are made to exacting quality standards.
- Kimble weighing bottles are all ground to a satin smooth finish to insure an air-tight, short length $\overline{\$}$ joint.
- Each bottle and closure has a hexagonal area for easy marking, aiding identification of the sample content or matching a specific closure to a specific bottle.
- Kimble line includes two body styles; conical and cylindrical.
- Closures also come in two styles; plug style, where the body neck I.D. is ground, and cap style, where body neck O.D. is ground.

Cylindrical Body Weighing Bottles

The following table includes all weighing bottles with cylindrical bodies, and should be a useful aid in selection of a bottle for a particular application.

Approx. I.D. (mm)	Approx. Height (mm)	Type	Plug Style Closure	Cap Style Closure
7.5	15	Regular	—	15146
15	50	Tall Form	15145	15146
15	80	Tall Form	15145	—
20	24	Parr	—	15157
24	22	Low Form	15165	—
25	40	Regular	15145	15146
25	50	Regular	15145	15146
30	60	Regular	15145	15146
40	50	Regular	15145	15146
40	80	Regular	15145	15146
40	100	Regular	—	15146
50	60	Regular	15145	—
50	30	Low Form	15165	15166
60	30	Low Form	15165	15166
70	33	Low Form	15165	15166

Weighing Bottle with Cap Style Closure — Advantages

- Wrap around feature protects the top of the bottle from breakage if the bottle is knocked over.
- Eliminates contamination from airborne dirt collecting in the bottle/stopper junction.
- Elimination of the pennyhead top reduces the overall height.
- Increase in head space reduces the danger of sucking out light, fluffy material when removing the closure.
- Contents of the bottle do not come in contact with any ground glass surface.

ACCUFORM
ACCUFORM is the trademark identifying a series of microvials having a "V" shaped interior to enable recovery of a minute residual sample by means of a syringe needle. These vials are available with screw thread or aluminum seal finishes, in either clear or amber borosilicate glass.

KIMAX
KIMAX is the trademark identifying all ware including tubing and rod, made of Kimble borosilicate glass, produced and sold by Kimble Glass, Inc. When used alone, KIMAX signifies that the glass is KG-33; when the KIMAX is followed by a suffix, the glass used is one of the other Kimble borosilicate glasses, e.g., KIMAX-51 means that the glass is N-51A or KIMAX-35 means that the glass is KG-35. Physical properties are referenced in this catalog on page VII. KIMAX (Class A) graduated apparatus is precision grade, including the apparatus described in ANSI/ ASTM E694, Standard Specification for Volumetric Ware and many other pieces of apparatus made to similar rigid requirements for accuracy and design. KIMAX graduated glassware is intended for general use wherever highly accurate laboratory work is carried on. Tolerances are generally twice those of Class A ware.

KIMBLE
KIMBLE is the trademark identifying scientific laboratory glassware. The trademark KIMBLE is also used for scientific laboratory ware manufactured from plastics such as polystyrene, polyethylene and polypropylene.

KIM-BULK
KIM-BULK is the trademark identifying the the bulk packaging for glass and plastic vials.

KIMFLOW
KIMFLOW is the trademark identifying Kimble fritted discs, etc., and glassware with fritted shapes as an integral part of the piece of apparatus.

KIM-KAP
KIM-KAP is the trademark identifying a series of Kimble disposable polypropylene slip-on style closures used on culture tubes.

KIM-LOK
KIM-LOK is the trademark identifying a series of pre-assembled closures. The KIM-LOK products are protected by a patent.

KIM-QWIK
KIM-QWIK is the trademark identifying a value-added program of specially packed Kimble reusable glassware items and accessories available quickly and in smaller quantities.

KIM-RAK
KIM-RAK is the trademark identifying a disposable system of Kimble culture tubes and vials in polypropylene racks in a series of sizes.

KIM-SNAP
KIM-SNAP is the trademark identifying a series of plastic seals, with an assortment of liners, in an assortment of colors. KIM-SNAPs are designed to be used with 11 mm and 13 mm crimp/snap-ring vials and LOVials®.

KIM-TITE
KIM-TITE is the trademark identifying a series of linerless closures with membranes that can be penetrated with a syringe.

KLEAN-PAK
KLEAN-PAK is the trademark identifying the process of packing the glassware immediately after lehring to avoid contamination.

LABSET
LABSET is the trademark identifying sets of apparatus intended for laboratory work in a particular field of science, for example, organic chemistry.

LUBRI-FLO
LUBRI-FLO is the trademark identifying all stopcocks and stopcock assemblies having polytetrafluoroethylene (PTFE) material parts.

MICRO-VIAL
MICRO-VIAL is the trademark identifying vials made with extra thick glass walls for both sturdiness and magnification of contents. Fabricated from either KG-33 or Amber 203 borosilicate glass.

N-51A
N-51A is the trademark identifying glass that belongs to the family of Kimble borosilicate glasses. It possesses the best all-around chemical durability of available commercial glasses. Due to a comparatively low coefficient of expansion, N-51A also possesses good resistance to heat shock. N-51A meets the requirements for Type I Class B glass of ASTM E438. Products made from this are trademarked KIMAX-51.

OPTICLEAR
OPTICLEAR is the trademark identifying Kimble vials fabricated from glass tubing, and for disposable glass microscope slides and cover glasses.

RAY-SORB
RAY-SORB is the trademark identifying red-colored KIMAX glassware for use when contents must be protected from light of wavelengths below the 500mu (millimicron) range. KG-33 glass. Transmission characteristics: 0 percent at 300 mu, 1 percent at 400 mu and 4 percent at 500 mu.

SAFE-GARD
SAFE-GARD is the trademark identifying the protective polyethylene bumpers packed with Kimble graduated cylinders.

SHELF-PACK
SHELF-PACK is the trademark identifying the Kimble developed shelf-size cartoning configuration for Kimble laboratory ware. The sizes and designs offer many advantages in handling, storage inventory and ordering.

SOLVENT SAVER
SOLVENT SAVER is a trademark identifying scintillation vials that are dimensionally smaller than conventional scintillation vials.

TITESEAL
TITESEAL is the trademark identifying vials designed to accommodate either one or two piece plastic plug style closures, providing excellent sealing characteristics.

Other Trademarks
Other trademarks referred to herein are the property of their respective owners.

Chase Trademarks

Mark-M	disposable culture tubes

Kontes Trademarks

AIRLESS-WARE	products for the manipulation of air sensitive and moisture sensitive compounds
BANTAM-WARE	semi-micro scale glassware and accessories
BEVEL-SEAL	a vacuum tight o-ring seal against the bevelled edge of threaded glass
CHROMAFLEX	chromatographic equipment
CYTOLIFT	airlift bioreactor for suspension and microcarrier cultures
CYTOROLL	roller bottles of reusable glass for economy in high volume production
CYTOSTIR	stirred bioreactor for microcarrier cell culture
DISPOSAFLEX	disposable column and rack system
DUALL	tissue grinder with both conical and cylindrical surfaces
FLEX-COLUMN	economy chromatography column
FLOW-WATCHMAN	visual flow indicator
HI-VAC	high vacuum valves and vacuum products
KEM-KIT	a selection of basic small scale glassware in a reusable storage case
KEM-KLAMP	yoke type connector for ¶ jointed glassware
KOOL-GRIP	heat insulating cork jackets that are permanently bonded to borosilicate glassware
MICROFLEX	microscale kits and components, vials and accessories
PELLET PESTLE	disposable mixer for microtubes
SAMPLE SAFE	vial storage system
SLOW-DRY	concentrator tubes that reduce the risk of concentrating a sample to dryness
ULTRA-WARE	filtration products for microbiology and HPLC solvent clean-up and handling

Other Trademarks in this Catalog

AG	Bio-Rad Laboratories
BÜCHI	Büchi
CELLGRO	Mediatech Co.
CIMAREC	Thermolyne
DIRECT TORR	Welch Vacuum Tech. Inc.
DUO SEAL	Welch Vacuum Tech. Inc.
EMPORE	3M Company
FPLC	Pharmacia LKB Biotech.
KYNAR	Pennwalt Corp.
LUBRISEAL	Thomas Scientific
MICROCAP	Drummond Scientific Co.
MICROLINK	Loctite VSI, Inc., Canton Biomedical Division
MICRO-MATE	Popper and Sons, Inc.
MIDI-VAP	BSL Company
MININERT	Dynatech
MOJONNIER	SIG Beverages North America, Inc.
PIPETTE PUMP	Bel-Art Products
RODAVISS	S.A.Z.
RYTON	Phillips Chemical Co.
SAFE-LAB	Bel-Art Products
SPINBAR	Bel-Art Products
STIRMANTLE	Glas-Col
SWAGELOK	Crawford Fittings Inc.
TYGON	Saint-Gobain Performance Plastics Corp.
TEKMAR	Tekmar Co.
THERMO HAAKE	Thermo Haake

A

Acid Soluble Distillation Apparatus 177
Adapters 1-19
Bent 4-5
BEVEL-SEAL® 2, 4, 8, 13-16, 23, 145
Bottle 118
Bushing 1
Claisen 6-7
Micro 320
Connecting 2-4, 280, 462
Micro 3,9,308,313-314,320
Offset 2
Reducing / Enlarging 1
Straight 2
Threaded 2-4, 320
Universal 4,14
Distillation
Bent 4-5
Claisen 6-7
Connecting 8-9
Distributor 9, 188
Luer 10
Micro 9, 188
Transfer 10, 19, 463
Trap 10
Distilling 10
Drying, Micro 462
Filling 462
Filtration 10-11
Vacuum 11, 193
Flex Shaft 376
Flow 89, 94
Flow Control 103
Gas Balloon 463
Hose Connector 18, 280
Micro 18, 321
Inert Gas 17
Inlet 12-19, 451
Bleed Type 12
Flow Control 18-19
Fritted 17
Gas 17, 462
Hose 14-19
Offset 13, 15
Septum 463
Thermometer 13-16
Universal 14, 16
Pour Transfer 19
Rotary Evaporator 361, 364
Solvent Bottle 118
Stirrer 376
Syringe Needle 19
Thermometer 13-16, 19, 411
Transfer 10, 19, 463
Tube 291
Vacuum 462-463
Connecting 9, 462
Distillation 9
Filter 479
Filtration 11, 204
Inlet 15, 308
Micro 308
Valve 463, 469
Addition Funnels 101, 260-271
Adjustable Loop Clamp 135
Air Driven Stirrer 385
AIRLESS-WARE®
Adapters
Connecting 462
Filling 462
Gas Balloon 463
Inlet 462
Transfer 10, 19, 463
Vacuum 462-463
Drying Tower 194, 467
Funnels, Addition 4671
Alginates Assay Distillation Apparatus 173
Allihn Condensers 144
Aluminum Heating Blocks 285, 304, 312
Ammonia Nitrogen Distillation Apparatus 174
Ampuls 20
Antibiotic Moisture Content Flask 218
Arsine Generators 21
Atmospheric Environmental Bottle 277

B

Baffled Powder Addition Funnel 271
Barrett Distillation Receivers 191
Beads, Glass 22
Beakers 22-25
Bearing, Stirrer 382-384
BEVEL-SEAL™
Adapters
Claisen 6
Connecting 2, 4, 391
Distillation 6, 8
Inlet 13-15
PTFE 4, 14, 16
Tube 291
Vacuum 15-16
Extraction
Apparatus 197
Bidwell-Sterling Distillation Receivers 192
Bi-metallic Thermometer 411
Biometer Flask 218
Bioreactors 80
Blades, Stirrer 383-384
Boiling Flasks 230, 233-236, 361, 367, 371
Bottles 26-60
B.O.D. 42
Carboy 49
Dairy 47, 163-165
Dilatometer 43
Dispensing 58
Display 44
Dropping 44
Gas Washing 276-277
HPLC 45-46, 117-118
Media / Storage 52-55
Povitsky 58
Reagent / Solution 46,118
Reservoir 48
Serum 48
Solution 49
Specific Gravity 50-51
Storage / Media 52-55
TCLP 56-57
Toxin 58
Unsaturation 58
Vacuum / Pressure 46
Wash 59, 368

Weighing 60
Bottom-of-the-Bottle™ HPLC Inlet Filter 123
Break Seal Tube 427
Bubblers 278-279, 464
Buchner Funnels 206-207
Bulb
Kugelrohr 182
Ramsbottom Coking 336
Bump Trap 364
Burets 61-69
Automatic 67-68
Dairy Acidity Test 162
Dispensing 64
Funnel Fill 62-66
Reservoir Fill 67-68
Schellbach 69
Tutwiler 69
Bushing Adapters 1

C

Cadmium Reduction Column 107
Capillary Pipets, Micro 3128, 311, 347-348, 429
Capillaries, Melting Point 313, 428
Caps & Closures 70-79
Aluminum Seal 71-72
Plug Style 79
Pour Ring, GL45 73
Screw Thread 73-78
Septa 76, 78
Snap Cap 79
Stopper 72
Cell, Oxidation 337
Cell Culture 80-84
Dishes 81
Flasks 82
Microcarrier Cell Culture 80
Centrifuge Tubes 339-341, 430-437
Cell Disruption
Chamber, Mini Bomb 83
Ultrasonic 84
Center Well Flasks 219
Chemistry Kits 294-323
CHROMAFLEX® Columns
Chromatography
Adapter 106
Columns 85-107
Custom 85
Disposable 96
Economy 92-95
Flow Control Adapter 103
General Purpose 97-106
Neutral Oil and Loss 107
Pesticide Analysis 107
Threaded 86-90
Extender 106
Fittings 91, 95, 124, 129-132
HPLC 108-123
Accessories 117-123
Solvent Systems 108-116
Packing Reservoir 90, 94, 102
Threaded 90
Sample Diffusion Disc 94
Sample Tubes 107, 438
Solvent Addition Funnels 101, 269
TLC 125-128
Developing Tanks 125-126
Labeling Template 128
Plate Streaker 128
Reagent Sprayer 127
Sample Recovery Tube 126
Spotting Capillaries 128
Tubing 133, 456
CIMAREC® Stirring Hot Plate 286, 387
Claisen Adapters 6-7, 320
Clamps 134-137
Adjustable Loop 135
Chain 134
Holder 135
Hook Connector 135
O-ring Connector 137
Pinch 137, 293
Power Hold Clamp 136
Reaction Flask 136
Spherical Joint 137
Standard Taper 134-137, 293
Three-Prong 134
Two-Prong 134
COD Reflux Distillation Apparatus 174
Cold Finger Condensers 145, 308
Coliwassa Tube 447
Color Comparison Tubes 438-440
Colorware 23, 222, 248, 366
Column Packing Beads 22
Columns, Chromatography 85-107
Columns, Distillation 182-184
Concentrators 138-143
Evaporative
Columns 140-141
Kuderna-Danish 138-139
Ebullator 140
Solvent Recovery Systems 141, 143
Tubes 141-142
Condensers 144-152
Allihn 144
Cold Finger 145, 308
Dewar 146, 465
Friedrich 147
Graham 148
High Efficiency 148
Large Capacity 148
Liebig 149
Reflux 150-151, 465
SOLVENT SAVER® 151
Solvent Recovery 141, 151
West 152
Connecting Adapters 2-4, 280, 462
Connectors, Hose 287
Constant Addition Funnels 267
Cooling Bath Funnels 260-261
Crucibles 258
Culture
Flasks 82, 218-219
Tubes 441-447
Cylinders 153-161, 370
Bumper 160
Hydrometer 153
Pharmaceutical Graduate 161
Soil Testing 153
Starter Pack 158
To Contain 154-156
To Deliver 157-160
CYTOSTIR® Microcarrier Bioreactors 80

D

Dairyware **162-166**
Acidity test Apparatus 162
Babcock Bottles 163-164
Centrifuge Tube 165
Paley Bottles 165
Pipets 166
Dean Stark
Distillation / Extraction Apparatus 199
Receivers 192
Debubbler, Mobile Phase **124**
Derivatization Vial **497**
Dessicators **13167**
Developing Tanks, TLC **125-126**
Dewar
Condenser 146, 465
Flasks 220, 468
Diazomethane Generator **353**
Dilatometer **43**
Disc, Fritted **258-259**
Dishes
Crystallizing 81
Culture 81
Sand Bath 309
Dispenser Tilting **169**
Dispensing Burets **64**
Dissolution Vessels **220**
DISPOSAFLEX® Columns **96**
Distillation
Adapters 4-10, 19, 188, 463
Apparatus 170-181
Acid Soluble 177
Alginates Assay 173
Ammonia 170-172
Ammonia Nitrogen 174
COD Reflux 174
Cyanide 170-172, 175-176
Cyanides or Sulfides 176
Dean Stark 177
Extraction 196
Fluoride 178
Hickman 309, 316-317
Kjeldahl Distillation 179
Kugelrohr 182
Midi-Cyanide 175
Midi-Vap 3000 Systems 170-172
Monier-Williams Sulfites 178
Phenols 170-172
Reactors 242-243
Short Path 180
Solvent Repurification 180-181, 466
Vacuum 181
Water in Crude Oil 336
Bulb, Kugelrohr 182
Column Packing Beads 22, 183
Columns 182-184
Heads 185-188, 309, 321
Reactors 242-245
Receivers 188-192
Traps, Foam-Type 10, 192
Distilling Flasks **230, 236-238, 240-241**
Distributor, Micro-Distillation **9, 188**
Dome, Filter **205**
Dounce Tissue Grinders **415**
Drum Sampler **447**
Drying Apparatus and Tubes **193-195**
DUALL® Tissue Grinders **416-418**

E

Ebullator **140**
Electric Stirrer **286, 386-387**
Engler Distilling Flask **221**
Erlenmeyer Flasks **222-226, 321, 367**
Evaporative Concentrators **138-142**
Explosion Proof Stirrers **385**
Extraction Apparatus **196-201**
Body, Soxhlet 200-201
SPE Disk Glassware & Manifolds 202

F

Fabric, Multi-Fiber Test **301**
Fat Extraction Flask **226**
Fermentation Tube **449**
Filter
Adapter, Double Ended 314, 467
Dome 205
Flasks 209-210, 227-228
Funnels 206-207
Filtering Pump **480**
Filtering Tube **305**
Filtration
Adapter 212
Beaker 25, 205
Manifold 202
Microfiltration Assemblies 209-217
Vacuum
Adapters 204
Pump 303, 311, 480-481
Fittings, Chromatography **91, 95, 129-132**
Fittings Kit, Ultra-ware® **124**
Fixed Volume Tilting Dispenser **169**
Flasks
Antibiotic Moisture Content 218
Biometer 218
Blank 218
Culture 82, 218-219
Dewar 220, 468
Dissolution 220
Distilling 230, 236-238, 240-241
Engler 221
Erlenmeyer 222-226, 321, 367
Fat Extraction 226
Filter 209-210, 227-228
Flat Bottom, Single-Neck 232, 367
Flat Bottom / Kjeldahl Flask, Cork-Coated 232, 367
Incubation Center Well 219
Kjeldahl Heavy Wall 229, 367
Long Neck Round Bottom 235
Micro-Volumetric, Class A 255, 302, 322
Pear-Shaped 230, 322
Reaction 242-244
Recovery 231, 360
Round Bottom 232-241, 310, 322
Five-Neck 241
Four-Neck 241
Single-Neck 232-236
Spherical Joint 236, 361
Three-Neck 238-240
Two-Neck 236-237
Vacuum 468-469
Airless/Straus 469

Reaction / Storage 468-469
Solvent Storage 468-469
Volumetric
Heavy Duty Wide Mouth 249-250
Micro 255, 302, 322
Square 254
with Mixing Bulb 252-253
Flat Bottom Flasks 232, 367
FLEX-COLUMNS® 92-95
Fluoride Distillation Apparatus 178
Flow Adapters 89, 94
Flow Control Adapters 103
FLOW-WATCHMAN® Flowmeter 256
Four Neck Flasks 241
Freeze Drying Apparatus 193, 365
Friedrich Condensers 147
Fritted Ware 257-259
Funnels
Addition 101, 260-271
Baffled 271
Constant Addition 267
Cooling Bath 260-261
Graduated 261-268
Open Top 260
Powder Addition 268-269
Buchner 206-207
Filter 206-208
Polypropylene, NMR 330
Separatory 272-275, 323
Solvent Addition 101, 269
Weighing / Transfer Funnel 272

G

Gasket, Reaction Flask 245
Gas Sampling
Atmospheric Environmental Bottle 277
Bubblers 278-279
Impingers 279-280
Sampling Tubes 281
Tube 282
Washing Bottles 276-277
Gauges, Vacuum 472-473
Gooch Crucibles 258
Graduate Pharmaceuticals 161
Graham Condensers 148
Graphite Packing 377
Grease, Lubricant 292, 377
Greaseless Seals 293, 375
Greenberg-Smith Impingers 279-280
Griffin-Worden Pressure Vessels 352-353
Ground Joints 288-293
Guth/Kontes Cork Coated Glassware 367-368

H

Handi-Mat® 369
Heads, Distillation 185-188, 309, 321
Heating
Blocks, Aluminum 285, 304, 312
Cord, High-Temperature 285
Mantles 283-285
Stirrer with Hot Plate 286, 387
High Efficiency Condenser 148
Hickman Still 309, 321
HI-VAC®
Stirrer Assemblies 381
Vacuum & Airless Bubbler 464
Valves 397-402
Drain 402
Homogenizers 414-424
Hook Connector Clamp 135
Horns, Ultrasonic 459
Hose
Adapter, Inlet 16-18
Connectors 287
Hot Plates 286, 387
HPLC
Adapter 46, 118
Solvent Bottle 118
Solvent Pickup 122
Cap Systems 108-116
Conversion Base, 90 mm 122
Debubbler 124
Delivery Caps 119-122
Filtration Cap 113, 121
Fittings Kits 124
Inlet / Sparge Filter 123
Reservoir, Conical Bottom 45, 117
Vacuum/Pressure Bottle 46, 118
Hybridization Tube 450
Hydrolysis Tubes 450
Hydrometer ..... 1`53

I

Impingers 279-280
Incubation Center Well Flasks 219
Inlet
Adapters 12-19
Bleed Tube 12, 451
Microscale, Vacuum 314

J

Jack Stand 408
Jacketed
Beaker, Reaction 25
Flasks 239, 242-243
Funnels 267
Jars 34-37, 287
Joints
Ground 288-291
O-Ring 290
Seals, Greaseless 293, 375
Tube, GPI Threaded 291
Jugs 38

K

KEM-KITS® 295-296
KEM-KLAMP® Clamps 136, 465
Kits
Organic Chemistry
Macroscale 294-297
Microscale 298-323
Kjeldahl Distillation Apparatus 179
Kjeldahl Flasks 229, 367
KOOL-GRIP® Cork Coated Glassware 367-368
Kuderna-Danish
Evaporative Concentrators 138-142
Solvent Recovery Systems 141, 143
Kugelrohr, Distillation Bulbs 182

L

Lab Jack Support 408
Labelling Template, TLC 128
Labmug and Pitcher 25

Lattice Connector Clamp **135**
Leak Detector, Vacuum **474**
Liebig Condensers **149**
Liners, Cap **76**
Lubricant, Grease **292, 377**
LUBRISEAL® Stopcock Grease **292**

M

Magnetic Stir Bars **46, 118, 303, 312, 377-379**
Manifolds, Vacuum **202, 323, 474-476**
Mantles, Heating **283-285**
Mat, Safety **369**
Micro DUALL® Tissue Grinders **418**
Microcaps® Pipets **128, 347**
Microfiltration Apparatus **209-217**
MICROFLEX®
Flasks, Erlenmeyer 225, 321
Mininert® Valves 487
Stir Vanes, Magnetic, PTFE-Coated 379, 487
Microscale
Column, Vigreux 308
Condensers 301, 308
Conical Flask 230
Distillation Distributor 9, 188
Fabric, Multi-fiber Test 301
Flasks
Kjeldahl-Shaped, Threaded 322
Pear-Shaped, Threaded 322
Round Bottom 310, 314
Round Bottom, Threaded 322
Volumetric 322
Funnels 323
Kits 298-323
Mantle, Sand Bath Heating 284, 302
Sublimator 312
Test Identification, Stain 301
Wilfilter Centrifuge Adapter 301
Microtip® Ultrasonicators **459**
Midget Impinger **279**
Midi-Cyanide Distillation Apparatus **175**
MIDI-VAP™ 3000 Apparatus **170-172**
Mini-Bomb Cell Disruption Chamber **83**
Mixing Bulb Volumetric Flasks **252-253**
Mobile Phase Debubbler **124**
Mobile Phase Solvent Handling Systems **7108-116**
Moisture Test Receivers **191-192**
Mojonnier™ Fat Extraction Flask **226**
Monier-Williams Sulfites Apparatus **178**
Multi Fiber Test Fabric **301**

N

Neutral Oil and Loss Column **107**
Needles, Syringe **303, 410**
Nephelo Culture Flask **82, 219**
NMR
Funnel 330
Pipet, Extended Tip 330
Pressure Caps 329
Sample Tube Racks 330
Sealing Manifold 329
Septa 329
Tubes 324-328
Washers, Tube 330-331
NO-OX® Tubing **133, 456**
Non Mercury Thermometers **412**
Non Vortexing Separatory Funnel **273**

O

Offset Connecting Adapters **2**
Organic Chemistry Kits **294-323**
O-Rings
Buna-N 332
Ethylene Propylene, (Purple/Black) 332
FFKM 333
Silicone 333
TFE/Propylene, (Black) 333
FKM, (Brown or Black) 334
Oxidation
Cell 337
Tube 451

P

Packing Reservoirs **90, 94, 102**
Partial Immersion Thermometer **412**
Pear Shaped Flasks **230, 322**
PELLET PESTLES® **423-424**
Penny Head Stopper **312, 404**
Peptide Synthesis Vessels **335**
Pesticide Analysis Column **107**
Petrochemical
Bulb, Ramsbottom Coking 336
Buret, Gas 337
Centrifuge Tubes 339-341
Container, Sample 337
Distilling Flasks 338
Filter Stick 336
Oxidation Cell 337
Pharmaceutical Graduates **161**
Pinch Clamp **137, 293**
Pipets
Disposable 330, 347-351
Pasteur Disposable 330, 348
Pipette Pump™ 303, 311, 348
Reusable 342-346
Volumetric 345-346
Plastic Safety Coated Glassware **370-371**
Plate Streaker, TLC **128**
Platform Jack **408**
Pluro Stoppers **11, 204, 406**
Polyacetal Clamps **136-137, 293, 465**
Polyethylene Tubing **305**
Polyethylene Stoppers **405**
Potter-Elvehjem Tissue Grinders **419-420**
Pour / Transfer Adapter **19**
Powder Addition Funnels **268-269**
Powder Funnel **268**
Power Control, Heating Mantles **285**
Power Hold Clamp **136**
Pressure Release Valve **475**
Pressure Vessels **352-354**
Pumps
Oil Diffusion 480
Vacuum Filtering 480
Vacuum / Pressure 303, 311, 4813
Purge & Trap
Soil Analysis Tube 357
Sparger Needles 356
Spargers 355-356
Static Dilution Bottle 357
PVC Coated TCLP Bottles **56**

Q

Quartz Beaker / Crucible **25**

R

Racks
Sample Tube, NMR 330
Vial 487
Ramsbottom Coking Bulb **336**
RAYSORB® Ware **358-359**
Reaction Flask Clamps **136, 245**
Reaction Jacketed Beaker **25**
Reactors **242-243**
Reagent Spray, TLC **127**
Receivers, Distillation **188-192**
Recovery Flasks **231, 360**
Recrystallization Tube, Craig **309**
Reflux Condensers **150-151, 465**
Reagent Bottles / Solution **46, 118**
Reservoir Bottles **48**
Retainer, Stopcock Plug **390**
Rodaviss® Ground Joints **291**
Rosett™ Cell **458**
Rotary Evaporator Accessories **360-365**
Flasks 360-361
Freeze Drying Apparatus 193, 365
Intake Adapter 361
Traps 362-364
Vial Adapter System 364
Round Bottom Flasks **232-241, 310, 322**
Rubber Stoppers **406**

S

Safe-Lab® Stoppers, Glass **403**
Safety
Coated Glassware 370-371
Colorware 23, 222, 248, 366
Cork Coated Glassware 367-368
Mat, Handi-Mat® 369
Video / DVD 369
Sample Recovery Tube, TLC **126**
Sample Storage & Retrieval Vials **485**
Sample Tubes
Chromatography 107, 438
NMR 324-328
Sampling Tubes, Gas **282**
Sand Bath Dish **309**
Sand Bath Heating Mantle **284, 302, 310**
Schlenk Tubes **471, 479**
Seal Off NMR Tubes **328**
Sealing NMR Manifold **329**
Seals, Greaseless **293, 375**
Serialized Glassware **372-374**
Separatory Funnels **273-275, 323**
Septa **76, 78, 371**
Shoulderless Vial **485**
Sleeves, PTFE **375**
SLOW-DRY®
Concentrators and Tubes 139, 141
Extraction Apparatus 197
Snyder Columns **140, 184**
Soil Analysis Tubes **357**
Solvent
Bottle Adapter 118
HPLC Systems 108-116
Recovery Condensers 141, 151
Recovery Systems 143
Repurification Distillation Apparatus 180-181, 466
Transfer Manifold 469
SOLVENT SAVER® Condensers **141, 151**
Sonabox™ , Ultrasonicators **458**
Soxhlet Extractors **200-201**
Spargers **355-356**
Spatula **375**
SPE Glassware and Manifolds **202**
Spotting Capillaries, TLC **128**
Spray, TLC Reagent **127**
Springs **375**
SSR Vials **485**
Stainless Steel Clamps **137**
Stain Test Identification **301**
Stands **409**
Static Dilution Bottle **357**
Stir Bars / Vanes, Magnetic **377-379**
Stirred Bioreactors **80**
Stirrer
Accessories 376-377, 386
Air Driven Explosion Proof 385
Assembles 380-382
Bearings 382-383
Blades 383-384
Components 382-384
Lubricant 377
Motors 386
Stir Bars 377-379
Stirring Hot Plates, CIMAREC® **286, 387**
Stopcocks **385-402**
Glass Plug 388-390, 393-396
Grease 292
High Vacuum 393-396
Plug Retainer 390
LUBRI-FLO® ,PTFE 391-392
PTFE Plug 391-393
Valves, HI-VAC® 397-402
Stoppers
Safe-Lab® Stoppers, Glass 403
Glass 403-404
Rubber 406
Pluro 11, 204, 406
Polyethylene 405
PTFE, Flat-Head 405
Silicone 406
Storage Bulb **481**
Sublation Extraction Apparatus **198**
Sublimators **407-408**
Supports
Clamps 134-137
Jack Stand 408
Stands 409
Syringes **410**
Needles 303, 410

T

TCLP Extraction Bottles **56-57**
Tenbroeck Tissue Grinders **421**
Test Identification Stain **301**
Test Tubes .....
TFE / Propylene O-Ring **333**
Thermometers **411-413**
Tissue Grinders **414-424**
Cell Disruption Chamber, Mini-Bomb 83
Kit 421
Micro DUALL® 418
PELLET PESTLES® 423-424

Ultrasonic 84, 457
Thimble, Extraction 200-201
Threaded Connecting Tube 291
Three Neck Flasks 238-240
Tilting Dispenser 169
TLC Accessories 125-128
Total Immersion Thermometers 412
Transfer Pipet 346
Transfer / Weighing Funnel 272
Traps
Foam 192
Rotary Evaporator 362-364
Vacuum 482-483
Tubes
Blood
Collection 425
Sedimentation Rate 427
Typing 426
Break Seal 427
Capillary 428-429
Centrifuge 430-437
Disposable 431
Heavy Duty 435-436
High Strength 437
Petrochemical 339-341
Reusable 432-437
Chromatography Sample Tube 107, 438
Coliwassa 447
Color Comparison 438-440
Craig Recrystallization 309
Culture
Blood Typing 443
Disposable 441-444
Reusable 445-447
Diazomethane Generator 353
Drum Sampler 447
Drying 448
Fermentation 449
Gas Measuring 449
Griffin-Worden Pressure Vessel 352-353
Hose Connector 287
Hybridization 450
Hydrolysis 450
Inlet 12, 451
Melting Point 428
NMR 324-328
Oxidation 451
Pressure Vessels, Heavy Wall 352-354
Recrystallization 309
Schlenk Tube 471, 479
Test 452-453
Thunberg 454
Viscosity 454
Williams Alcohol 454
Tubing 133, 455-456
Two Neck Flasks 236-237

U

Ultrasonicators and Accessories 84, 457, 459
ULTRA-WARE®
HPLC 108-123
Microfiltration Apparatus 209-217
Unions 91, 95, 130-131

V

Vacuum and Airless 460-483
Adapters 462-463
Bubbler, Gas 278-279, 464
Condensers 465
Dewar 468
Distillation Apparatus 466
Drying Tower 467
Filter 470
Flasks 468-469
Funnels 470
Gauges 472-473
Gauge Trap 472
Leak Detector 474
Manifolds 202, 323, 474-476
Accessories 475-480
Pressure Release Valve 475
Pumps 303, 311, 481
Storage Bulb 481
Traps 482-483
Valves
HI-VAC® 397-402
Vacuum Check 472
Vial 487
Vessels, Peptide 335
Vigreux
Columns 140, 184, 308
Distillation Apparatus 185-186
Vials
Conical Bottom 485-487
EPA 484
High Recovery 485-487
Hydrolysis / Derivatization 497
Racks 487
Sample 485-490
Scintillation 491-494
Serum 495
Shell 496-497
Specialty 497
SSR 485
Video / DVD, Play It Safe In The Lab 369
Volumetric Flasks 249-255, 302, 322

W

Washers 330-331, 498
Washing Bottles 59, 368
Weighing / Transfer Funnel 272
West Condensers 152
Wide Mouth Volumetric Flasks 249-251
Wilfilter Centrifuge Adapter 301
Williams Alcohol Tube 454
Williamson Microscale Kits 297-305

X, Y, Z

Kimble Art. No.	Page
KIMBLE REUSABLES	
508-20	165
509-50	165
516-20	164
530-50100	163
570-9	166
580S-9	166
609-99	162
620F-1	162
A-620F-1	162
1003S-8	163
1025-10	163
2015S-50	164
2075C-50	164
2085S-50	164
3001-176	166
3005S-176	166
3010-11	166
13500-3	22
13500-4	22
13500-5	22
13500-6	22
14000-10	22
14000-20	22
14000-30	22
14000-50	22
14000-100	22
14000-150	22
14000-250	22
14000-400	22
14000-600	22
14000-800	22
14000-1000	22
14000-1500	22
14000-2000	22
14000-4000	22
14000B-50	23
14000G-50	23
14000R-50	23
14000Y-50	23
14000B-100	23
14000G-100	23
14000R-100	23
14000Y-100	23
14000B-250	23
14000G-250	23
14000R-250	23
14000Y-250	23
14000B-400	23
14000G-400	23
14000R-400	23
14000Y-400	23
14000B-600	23
14000G-600	23
14000R-600	23
14000Y-600	23
14000B-1000	23
14000G-1000	23
14000R-1000	23
14000Y-1000	23
14005-250	23
14005-400	23
14005-600	23
14005-1000	23
14005-2000	23
14005-4000	23
14020-100	24
14020-200	24
14020-300	24
14020-400	24
14020-600	24
14020-1000	24
14030-100	24
14030-200	24
14030-300	24
14030-400	24
14030-600	24
14030-1000	24
14080-01	23
14250-200	47
14255-28	74
14395-100	52
14395-250	52
14395-500	52
14395-1000	52
14395-2000	52
14395-5000	52
14395-10000	52
14395C-45	73
14395C-451	73
14395H-452	73
14395E-452	73
14395C-453	73
14395M-45	78
14395P-45	73
14396-100	52
14396-250	52
14396-500	52
14396-1000	52
14396-2000	52
14396-5000	52
14396-10000	52
14399-500	52
14399-1000	52
14399-2000	52
14399-5000	52
14399-10000	52
14607-250	48
14607-500	48
14607-1000	48
14607-2000	48
14607-5000	48
14607-10000	48
14607-20000	48
14612F-2000	48
14612F-5000	48
14612F-10000	48
14612F-20000	48
14720-200	435
14915-160	47
14925-160	47
14950-25	49
14950-35	49
14950-120	49
14950-500	49
14950C-12	49
14950S-321	49
14950S-2321	49
14960-4	48
14960-9	48
14975-5	58
15035-15	44
15035-30	44
15035-60	44
15035-125	44
15060-125	276
15060-250	276
15060-500	276
15065-250	276
15066-10	58
15070-00	42
15070-01	42
15070-25	42
15070G-00	42
15070L-99	42
15093-1000	49
15093-2000	49
15093-5000	49
15093-10000	49
15093-20000	49
15097-100	49
15097-250	49
15097-500	49
15097-1000	49
15097-2000	49
15107-2	44
15107-4	44
15107-8	44
15107-16	44
15110-24	51
15113-25	51
15115-24	51
15123R-10	50
15123R-25	50
15123R-50	50
15123T-1025	411
15145-1550	60
15145-2540	60
15145-2550	60
15145-3060	60
15145-4050	60
15145-4080	60
15145-5060	60
15146-2540	60
15146-2550	60
15146-3060	60
15146-4050	60
15146-4080	60
15146-40100	60
15157-2024	60
15165-5030	60
15165-6030	60
15165-7033	60
15180-2912	60
15180-3412	60
15180-4512	60
15182-1910	440
15182-2412	440
16040-55	229
17021H-25	65
17021H-50	65
17021J-25	65
17021J-50	65
17026-50	63
17026F-10	63
17026F-25	63
17026F-50	63
17026F-100	63
17026G-50	63
17027F-10	62
17027F-25	62
17027F-50	62
17027F-100	62
17030K-50	65
17033F-50	63
17034H-99	65
17051F-10	68
17051F-25	68
17051F-50	68
17051F-100	68
17052F-25	67
17052F-50	67
17052F-100	67
17054F-10	67
17054F-25	67
17054F-50	67
17054F-100	67
17080F-250	64
17080F-500	64
17080F-1000	64
17094F-50	62
17110F-5	66
17110F-10	66
17115F-5	68
17115F-10	68
17121H-25	65
17121H-50	65
17124F-10	67
17124F-25	67
17124F-50	67
17124F-100	67
17132F-2	68
17132F-5	68
17132F-10	68
17150F-25	69
17150F-50	69
17170F-25	69
17170F-50	69
17800-11300	97
17800-11500	97
17800-19300	97
17800-19500	97
17800-22300	97
17800-22500	97
17802-99	97
17810-11300	97
17810-19300	97
18140-400	149
18185-1420	152
19000-1	153
20011-100	154
20022-10	154
20022-25	154
20022-50	154
20022-100	154
20022-250	154
20022-500	154
20022-1000	154
20022-2000	154
20023-1000	153
20023-1205	153
20024-01	158
20024-10	158
20024-25	158
20024-50	158
20024-100	158
20024-250	158
20024-500	158
20024-1000	158
20024-2000	158
20024D-10	159
20024D-25	159
20024D-50	159
20024D-100	159
20024D-250	159
20024D-500	159
20024D-1000	159
20024D-2000	159
20025-10	159
20025-25	159
20025-50	159
20025-100	159
20025-250	159
20025-500	159
20025-1000	159
20025-2000	159
20025B-25	160
20025B-50	160
20025B-100	160
20025H-10	160
20025H-25	160
20025H-50	160
20025H-100	160
20025J-10	160
20025J-25	160
20025J-50	160
20025J-100	160
20025K-10	160
20025K-25	160
20025K-50	160
20025K-100	160
20025K-250	160
20025K-500	160
20025K-1000	160
20025K-2000	160
20026-10	157
20026-25	157
20026-50	157
20026-100	157
20026-250	157
20026-500	157
20026-1000	157
20028W-10	157
20028W-25	157
20028W-50	157
20028W-100	157
20028W-250	157
20028W-500	157
20028W-1000	157
20028W-2000	157
20030-10	159
20030-25	159
20030-50	159
20030-100	159
20030-250	159
20030-500	159
20030-1000	159
20030-2000	159
20032-50	158
20032-100	158
20036-10	154
20036-25	154
20036-50	154
20036-100	154
20036-250	154
20036-500	154
20036-1000	154
20039-10	155
20039-25	155
20039-50	155
20039-100	155
20039-250	155
20039-500	155
20039-1000	155
20039-2000	155
20039P-50	155
20039P-100	155
20039P-1000	155
20040-10	155
20040-25	155
20040-50	155
20040-100	155
20040-250	155
20040-500	155
20040-1000	155
20040-2000	155
20058-38200	153
20058-38375	153
20058-50375	153
20058-63460	153
20100-4	160
21050-160	167
21050-200	167
21050-250	167
21070-160	167
21070-200	167
21070-250	167
21200-160	167
21200-200	167
21200-250	167
21500-500	173
21500-1000	173
21500G-500	173
21500G-1000	173
21800-1420	182
21802-200	184
21805-300	182
22012-10	192
23000-5035	168
23000-6035	168
23000-7050	168
23000-8040	168
23000-9050	168
23000-10050	168
23000-12565	168
23000-15075	168
23000-17090	168
23000-19100	168
23060-6015	168
23060-10010	168
23060-10015	168
23060-10020	168
23060-15020	168
23062-6015	168
23062-10010	168
23062-10015	168
23062-10020	168
23062-15020	168
23064-6015	168
23064-10010	168
23064-10015	168
23064-10020	168
23064-15020	168
24005-30	200
24005-40	200
24005-50	200
24027-30	200
24027-40	200
24027-50	200
24071-30	200
24071-40	200
24071-50	200
24900-2	55
25000-500	232
25000-1000	232
25000-6000	232
25055-125	232
25055-250	232
25055-300	232
25055-500	232
25055-1000	232
25057-250	232
25200-250	233
25200-500	233
25276-100	233
25276-250	233
25277-100	233
25277-250	233
25277-500	233
25285-50	233
25285-100	233
25285-200	233
25285-250	233
25285-300	233
25285-500	233
25285-1000	233
25285-2000	233
25285-3000	233
25615-125	219
25615-250	219
25615-500	219
25615-1000	219
25615-2000	219
25630-125	218
25630-250	218
25630-500	218
25630-1000	218
25630-2000	218
26015-125	221
26015C-125	221
26016-125	221
26246-250	238
26246-500	238
26500-25	222
26500-50	222
26500-125	222
26500-250	222
26500-300	222
26500-500	222
26500-1000	222
26500-2000	222
26500-4000	222
26500-6000	222
26500B-50	222
26500G-50	222
26500R-50	222
26500Y-50	222
26500B-125	222
26500G-125	222
26500R-125	222
26500Y-125	222
26500B-250	222
26500G-250	222
26500R-250	222
26500Y-250	222
26500B-500	222
26500G-500	222
26500R-500	222
26500Y-500	222
26500B-1000	222
26500G-1000	222
26500R-1000	222
26500Y-1000	222
26505-50	224
26505-125	224
26505-250	224
26505-500	224
26505-1000	224
26505-2000	224
26510-50	226
26510-125	226
26510-250	226
26510-500	226
26510-1000	226
26510-2000	226
26520-1	222
26600-25	225
26600-50	225
26600-125	225
26600-250	225
26600-500	225
26600-1000	225
26610-50	225
26610-125	225
26610-250	225
26610-500	225
26650-125	223
26650-250	223
26650-500	223
26650-1000	223
26650-2000	223
26720-500	224
26850-99	200
27050-500	223
27050-1000	223
27050-2000	223
27050-4000	223
27060-25	227
27060-50	227
27060-100	227
27060-125	227
27060-250	227
27060-500	227
27060-1000	227
27060-2000	227
27060-4000	227
27065-250	227
27065-500	227
27065-1000	227
27065-2000	227
27065-4000	227
27070-250	227
27070-500	227
27070-1000	227
27070-2000	227
27070-4000	227
27200-125	228
27200-250	228
27200-500	228
27400-30	229
27400-100	229
27400-500	229
27400-800	229
28008-10	247
28008-25	247
28008-50	247
28008-100	247
28008-200	247
28008-250	247
28008-500	247
28008-1000	247
28008-2000	247
28010-10	256
28010-25	256
28010-50	256
28010-100	256
28010-200	256
28010-250	256
28010-500	256
28010-1000	256
28010-2000	256
28012-50	247
28012-100	247
28012-250	247
28012-500	247
28012-1000	247
28013-25	252
28013-50	252
28013-100	252
28013-200	252
28013-250	252
28013-500	252
28013-1000	252
28013-2000	252
28014-1	248
28014-2	248
28014-5	248
28014-10	248
28014-25	248
28014R-25	248
28014Y-25	248
28014B-25	248
28014E-25	248
28014-50	248
28014R-50	248
28014Y-50	248
28014B-50	248
28014E-50	248
28014-100	248
28014R-100	248
28014Y-100	248
28014B-100	248
28014E-100	248
28014-200	248
28014-250	248
28014R-250	248
28014Y-250	248
28014B-250	248
28014E-250	248
28014-500	248
28014R-500	248
28014Y-500	248
28014B-500	248
28014E-500	248
28014-1000	248
28014R-1000	248
28014Y-1000	248
28014B-1000	248
28014E-1000	248
28014-2000	248
28014F-2	251
28014F-5	251
28014F-10	251
28014F-25	251
28014F-50	251
28014F-100	251
28014F-200	251
28014F-250	251
28014F-500	251
28014F-1000	251
28014F-2000	251
28014P-5	251
28014P-10	251
28014P-25	251
28014P-50	251
28014P-100	251
28014P-200	251
28014P-250	251
28014P-500	251
28014P-1000	251

Kimble Art. No.	Page
28014P-2000	251
28014W-50	251
28015-10	256
28015-25	256
28015-50	256
28015-100	256
28015-200	256
28015-250	256
28015-500	256
28015-1000	256
28015-2000	256
28015P-100	256
28016-10	251
28016-25	251
28016-50	251
28016-100	251
28016-200	251
28016-250	251
28016-500	251
28016-1000	251
28017-10	248
28017-25	248
28017-50	248
28017-100	248
28017-200	248
28017-250	248
28017-500	248
28017-1000	248
28017-2000	248
28017A-1	255
28017A-2	255
28017A-5	255
28017A-10	255
28017A-25	255
28019-50	252
28019-100	252
28019-250	252
28019-500	252
28019-1000	252
28026-100	253
28040-50	254
28040-100	254
28040-200	254
28040-250	254
28040-500	254
28040-1000	254
28040-2000	254
28046-500	254
28046-900	254
28066-110	254
28100-100	254
28100-200	254
28100-500	254
28150R-2	79
28150R-3	79
28150R-4	79
28150R-5	79
28150R-6	79
28160R-9	405
28160R-13	405
28160R-16	405
28160R-19	405
28160R-22	405
28160R-27	405
28220-5001	276
28250-302	258
28260-152	258
28260-301	258
28260-302	258
28260-303	258
28400-21	206
28400-22	206
28400-23	206
28400-151	206
28400-152	206
28400-153	206
28400-301	206
28400-302	206
28400-303	206
28400-601	206
28400-602	206
28400-603	206
28400-1501	206
28400-1502	206
28400-1503	206
28400-3501	206
28400-3502	206
28400-3503	206
28400-6001	206
28400-6002	206
28400-6003	206
28400-20001	206
28400-20002	206
28400-30001	206
28400-30002	206
28900-55	270
28900-65	270
28900-75	270
28900-100	270
28950-25	271
28950-35	271
28950-45	271
28950-55	271
28950-65	271
28950-75	271
28950-90	271
28950-100	271
28980-150	270
28980-200	270
28980-250	270
29020-60	271
29020-80	271
29020-100	271
29020-125	271
29020-150	271
29043F-125	274
29043F-250	274
29048-60	275
29048-125	275
29048-250	275
29048-500	275
29048-1000	275
29048F-30	274
29048F-60	274
29048T-60	274
29048F-125	274
29048T-125	274
29048F-250	274
29048F-500	274
29048T-500	274
29048G-250	275
29048T-250	274
29048F-1000	274
29048F-2000	274
29048T-2000	274
29048G-2000	275
29049F-125	275
29049F-250	275
29049F-500	275
29049F-1000	275
29049F-2000	275
29052F-125	275
29052F-250	275
29052F-500	275
30034A-100	69
30040-500	281
30040F-250	281
30060-50	449
32450-7511	205
32501-99	287
32600-12120	287
33730-1000	220
33820-99	294
34500-99	428
34502-99	428
34505-99	428
34507-99	428
37000-1	346
37000-2	346
37000-3	346
37000-5	346
37000-10	346
37000-20	346
37000-25	346
37000-50	346
37000-100	346
37004-510	345
37004-1	345
37004-2	345
37004-3	345
37004-4	345
37004-5	345
37004-6	345
37004-7	345
37004-8	345
37004-9	345
37004-10	345
37004-12	345
37004-15	345
37004-20	345
37004-25	345
37004-30	345
37004-40	345
37004-50	345
37004-75	345
37004-100	345
37004-200	345
37004-1510	345
37004-2510	345
37007-1	346
37007-2	346
37007-3	346
37007-4	346
37007-5	346
37007-6	346
37007-7	346
37007-8	346
37007-9	346
37007-10	346
37007-15	346
37007-20	346
37007-25	346
37010-1	345
37010-2	345
37010-3	345
37010-4	345
37010-5	345
37010-6	345
37010-7	345
37010-8	345
37010-9	345
37010-10	345
37010-12	345
37010-15	345
37010-20	345
37010-25	345
37010-30	345
37010-40	345
37010-50	345
37010-75	345
37010-100	345
37010-200	345
37010-510	345
37010-1510	345
37010-2510	345
37020-110	343
37020-1110	343
37020-11100	343
37020-2	343
37020-5	343
37020-10	343
37020-25	343
37020-50	343
37025-1110	343
37025-11100	343
37025-2	343
37025-5	343
37025-10	343
37025-25	343
37034A-210	344
37034A-510	344
37034A-1110	344
37034A-11100	344
37034A-2110	344
37034A-21100	344
37034A-5	344
37034A-10	344
37034A-25	344
37034B-2	344
37034B-5	344
37034B-10	344
37034B-25	344
37079-11	342
37079-22	342
37079-10	342
37079-110	342
37081-110	342
37100-60	346
38004-99	480
40500-125	383
40500-150	383
40500-200	383
40500-250	383
40500-300	383
40500-375	383
41006F-2	402
41007F-2	402
41900R-13	404
41900R-38	404
41901R-9	405
41901R-13	405
41901R-16	405
41901R-19	405
41901R-22	405
41901R-32	405
41901R-38	405
41906R-22	228
45042-1075	453
45042-1275	453
45042-13100	453
45042-15125	453
45042-16150	453
45042-18150	453
45042-20150	453
45042-25150	453
45042-25200	453
45048-1075	445
45048-1275	445
45048-13100	445
45048-15125	445
45048-16100	445
45048-16125	445
45048-16150	445
45048-18150	445
45048-20150	445
45048-25150	445
45048-25250	445
45050-19150	453
45050-25150	453
45050-25200	453
45060-650	445
45060-13100	445
45060-16150	445
45060-19150	445
45060-25150	445
45060-25200	445
45066-13100	446
45066-16100	446
45066-16125	446
45066-16150	446
45066-20125	446
45066-20150	446
45066-25150	446
45066-25200	446
45066-38200	446
45066A-13100	446
45066A-16100	446
45066A-16125	446
45066A-16150	446
45066A-20125	446
45066A-20150	446
45066A-25150	446
45066A-25200	446
45066B-13	74
45066B-15	74
45066B-18	74
45066B-24	74
45066B-28	74
45066B-38	74
45066C-13	74
45066C-15	74
45066C-18	74
45066C-24	74
45066C-28	74
45066C-38	74
45071-10	445
45100-13100	453
45100-16150	453
45100-19150	453
45100-25200	453
45150-2	432
45150-5	432
45153-15	434
45153-50	434
45160-15	432
45164-15	433
45165-10	433
45165-15	433
45165-50	433
45166-15	434
45166-50	434
45167-50	165
45170-125	339
45174-13	435
45174-50	435
45176-13	436
45176-50	436
45186-50	433
45194-12	435
45196-40	435
45199-12	436
45200-10	436
45200-40	436
45201-10	436
45212-35	435
45212-50	435
45220-100	339
45225-10	433
45240-100	340
45241-100	340
45243-100	341
45243-200	341
45244-100	339
45244-200	339
45246-100	434
45290-154	438
45310-50	438
45310-100	438
45310-50100	438
45310A-50	439
45310A-100	439
45315-50	439
45315-100	439
45315-50100	439
45315A-50	439
45315A-100	439
45315A-50100	439
45315B-50	439
45315B-100	439
45325A-50	440
45325B-50100	440
45500-15	437
45500-30	437
45550-15	437
45550-30	437
45600-15	437
45600-30	437
46150-99	449
46155-99	449
46162-5	449
46188-65300	270
46188-65400	270
46350-10	452
46460-50	341
46460-100	341
46460-150	341
46460-200	341
46460-300	341
46460-350	341
46460-400	341
46463-1075	454
60345-60	161
60345-120	161
60345-40	161
60345-80	161
60345-2	161
60345-4	161
60345-8	161
60345-16	161
60345-32	161
92812G-5	249
92812G-10	249
92812G-20	249
92812G-25	249
92812G-50	249
92812G-100	249
92812G-200	249
92812G-250	249
92812G-500	249
92812G-1000	249
92812G-2000	249
92812F-5	249
92812F-10	249
92812F-20	249
92812F-25	249
92812F-50	249
92812F-100	249
92812F-200	249
92812F-250	249
92812F-500	249
92812F-1000	249
92812F-2000	249
92812P-5	249
92812P-10	249
92812P-20	249
92812P-25	249
92812P-50	249
92812P-100	249
92812P-200	249
92812P-250	249
92812P-500	249
92812P-1000	249
92812P-2000	249
92822G-5	250
92822G-10	250
92822G-20	250
92822G-25	250
92822G-50	250
92822G-100	250
92822G-200	250
92822G-250	250
92822G-500	250
92822G-1000	250
92822G-2000	250
92822F-5	250
92822F-10	250
92822F-20	250
92822F-25	250
92822F-50	250
92822F-100	250
92822F-200	250
92822F-250	250
92822F-500	250
92822F-1000	250
92822F-2000	250
92822P-5	250
92822P-10	250
92822P-20	250
92822P-25	250
92822P-50	250
92822P-100	250
92822P-200	250
92822P-250	250
92822P-500	250
92822P-1000	250
92822P-2000	250
92812N-5	249
92812N-10	249
92812N-20	249
92812N-25	249
92812N-50	249
92812N-100	249
92812N-200	249
92812N-250	249
92812N-500	249
92812N-1000	249
92812N-2000	249
92822N-5	250
92822N-10	250
92822N-20	250
92822N-25	250
92822N-50	250
92822N-100	250
92822N-200	250
92822N-250	250
92822N-500	250
92822N-1000	250
92822N-2000	250

KIMBLE DISPOSABLES

12010L-1	20
12010L-2	20
12010L-5	20
12010L-10	20
12010L-20	20
12040G-1	20
12040G-2	20
12050G-1	20
12050G-2	20
12050G-5	20
12050G-10	20
12050G-20	20
15040D-3001	44
15040D-6001	44
15040G-30	44
15040G-60	44
15040P-30	44
15040P-60	44
58500-20	492
58501-20	492
58502-7	493
58503-7	493
58504-20	492
58510-20	492
58510B-20	492
58511-20	492
58511B-20	492
58512-20	492
58515-20	492
58552-4	493
60680-12	485
60680-1	485
60680-2	485
60680-4	485
60690-12	485
60690-1	485
60690-2	485
60690-4	485
60700-1	486
60700-2	486
60700-3	486
60700-5	486
60700-10	486
60702-1	486
60702-2	486
60702-3	486
60702-5	486
60702-10	486
60705-1	486
60705-2	486
60705-3	486
60705-5	486
60707-1	486
60707-2	486
60707-3	486
60707-5	486
60710-110	487
60710-310	487
60710-1	487
60710-2	487
60710-3	487
60710-5	487
60710-10	487
60715-110	486
60715-310	486
60715-1	486
60715-2	486
60715-3	486
60715-5	486
60720-1	487
60720-2	487
60720-3	487
60720-5	487
60730-310	487
60810-1528	489
60810-1760	488
60810-1940	489
60810-1965	488
60810-2170	488
60810-2385	488
60815-1760	489
60815-1965	489
60831D-830	496
60831D-843	496
60831D-1231	496
60831D-1544	496
60835D-843	496
60835D-1544	496
60910-1	490
60910-2	490
60910-3	490
60910-4	490
60910-6	490
60910-8	490
60910C-12	490
60910C-1	490
60910C-112	490
60910C-2	490
60910C-3	490
60910C-4	490
60910C-6	490
60910C-8	490
60910D-1	490
60910D-2	490
60910D-3	490
60910D-4	490
60910L-1	490
60910L-2	490
60910L-12	490
60920D-4	489
60920D-8	489
60931-14	496
60931-12	496
60931-1	496
60931-2	496
60931-4	496
60931-6	496
60931-8	496
60940A-2	490
60940A-4	490

Kimble Art. No.	Page
60940A-8	490
60940A-12	490
60940A-16	490
60940A-24	490
60940D-1	490
60940D-2	490
60940D-3	490
60940D-4	490
60940D-6	490
60940D-12	490
60942A-8	489
60942A-12	489
60942A-16	489
60942A-24	489
60942A-40	489
60957-1	489
60957-4	489
60957C-4	489
60957C-6	489
60957C-11	489
60957D-4	489
60957D-6	489
60957D-11	489
60958A-4	484
60958A-6	484
60958A-912	484
60958A-11	484
60958A-16	484
60960A-4	484
60960A-912	484
60961C-4	484
60961C-6	484
60961C-912	484
60965-4	496
60965D-12	497
60965D-1	497
60965D-3	497
60965D-7	497
60965D-120	497
60975L-1	497
60975L-3	497
60975L-4	497
60975L-5	497
61000G-5	48
61000G-10	48
61000G-20	48
61000G-30	48
61000G-50	48
61000G-60	48
61000G-100	48
61000G-125	48
61000G-200	48
61020G-50	48
61100-125	55
61100-250	55
61100-500	55
61100-1000	55
61100A-1000	55
61110-125	55
61110-250	55
61110-500	55
61110-1000	55
61110A-1000	55
61110P-125	54
61110P-250	54
61110P-500	54
61110P-1000	54
61110R-125	54
61110R-250	54
61110R-500	54
61110R-1000	54
61110T-125	54
61110T-250	54
61110T-500	54
61110T-1000	54
61111P-1000	54
61111R-1000	54
61111T-1000	54
62113D-2	495
62113D-312	495
62121D-5	495
62121D-10	495
62121D-20	495
62413D-2	495
62421D-5	495
62421D-10	495
62421D-30	495
71900-5	348
71900-10	348
71900-20	348
71900-25	348
71900-50	348
71900-100	348
72100-1110	350
72100-11100	350
72100-21100	350
72100-5110	350
72100-10110	350
72102-5110	351
72102-10110	351
72102-11100	351
72102-21100	351
72105-1110	350
72105-11100	350
72105-21100	350
72105-5110	350
72105-10110	350
72106-11	347
72106-22	347
72108-5110	351
72108-10110	351
72110-11100	351
72110-5110	351
72110-10210	351
72110-25210	351
72110-50510	351
72115-11100	351
72115-5110	351
72115-10210	351
72115-25210	351
72115-50510	351
72120-1110	350
72120-11100	350
72120-21100	350
72120-5110	350
72120-10110	350
73500-650	441
73500-1075	441
73500-1275	441
73500-13100	441
73500-16100	441
73500-16125	441
73500-16150	441
73500-18150	441
73500-20150	441
73500-25150	441
73660-13	79
73660-16	79
73660-18	79
73660-20	79
73660-25	79
73660-38	79
73662-13	79
73662-16	79
73662-18	79
73662-20	79
73662-25	79
73663-13	79
73663-16	79
73663-18	79
73663-20	79
73663-25	79
73664-13	79
73664-16	79
73664-18	79
73664-20	79
73664-25	79
73665-13	79
73665-16	79
73665-18	79
73665-20	79
73665-25	79
73750-13100	444
73750-16100	444
73750-16125	444
73750-16150	444
73750-20125	444
73750-20150	444
73785-5	431
73785-10	431
73785-15	431
73785-50	431
73790-5	431
73790-10	431
73790-15	431
73790-50	431
73800-13415	74
73800-15415	74
73800-18415	74
73802-8425	75
73802-13415	75
73802-13425	75
73802-15415	75
73802-15425	75
73802-18400	75
73802-20400	75
73802-22400	75
73802-24400	75
73802-33430	75
73802-38430	75
73802U-8425	75
73802U-13425	75
73802U-15425	75
73802U-18400	75
73802U-20400	75
73802U-24400	75
73803-33430	75
73803-38430	75
73804-15425	78
73804-18400	78
73804-20400	78
73804-24400	78
73805-15415	73
73805B-13415	73
73805B-15415	73
73805B-18415	73
73808-13415	75
73808-15415	75
73808-18415	75
73808-24400	75
73808-24410	75
73808-28400	75
73808-28410	75
73808-33430	75
73808-38430	75
73809-13425	75
73809-15425	75
73809-18400	75
73809-20400	75
73809-22400	75
73811-21	72
73811T-21	72
73812-99	425
73813-99	425
73816-15	78
73816-18	78
73816-20	78
73816-24	78
73818-15	78
73818-18	78
73818-20	78
73818-24	78
73818A-24	78
73818X-18	78
73818X-24	78
73820-13	71
73820-20	71
73821-13	71
73821-20	71
N73824-13	71
N73824T-20	71
73827-13	72
73827-21	72
73828-13	72
73828A-21	72
73835-1	79
73835-2	79
73835-3	79
73837-1	79
73837-2	79
73843C-20	71
73843A-20	71
74400-2040	496
74500-20	491
74502-7	493
74503-7	493
74503-20	491
74504-20	491
74505-20	491
74506-20	491
74510-20	491
74511-20	491
74512-20	491
74515-20	491
74516-20	491
74520-15425	77
74520-22400	77
74521-15425	77
74521-22400	77
74522-22400	77
74524-22400	77
74525-22400	77
74526-22400	77
76000-25	447
76000-75	447
76000-150	447
76100-200	447
99991D-99	369

KIMBLE TYPE III BOTTLES & CAPS

5110120P	26
5110220P	26
5110422P	26
5110824P	26
5111628P	26
5113233P	26
5120120P	27
5120220P	27
5120422P	27
5120824P	27
5121628P	27
5123233P	27
5110120B	26
5110220B	26
5110422B	26
5110824B	26
5111628B	26
5113233B	26
5120120B	27
5120220B	27
5120422B	27
5120824B	27
5121628B	27
5123233B	27
5110120C-21	26
5110220C-21	26
5110422C-21	26
5110824C-21	26
5111628C-21	26
5113233C-21	26
5120120C-21	27
5120220C-21	27
5120422C-21	27
5120824C-21	27
5121628C-21	27
5123233C-21	27
5110120C-22	26
5110220C-22	26
5110422C-22	26
5110824C-22	26
5111628C-22	26
5113233C-22	26
5120120C-22	27
5120220C-22	27
5120422C-22	27
5120824C-22	27
5121628C-22	27
5123233C-22	27
5110120C-23	26
5110220C-23	26
5110422C-23	26
5110824C-23	26
5111628C-23	26
5113233C-23	26
5120120C-23	27
5120220C-23	27
5120422C-23	27
5120824C-23	27
5121628C-23	27
5123233C-23	27
5110120C-24	26
5110220C-24	26
5110422C-24	26
5110824C-24	26
5111628C-24	26
5113233C-24	26
5120120C-24	27
5120220C-24	27
5120422C-24	27
5120824C-24	27
5121628C-24	27
5123233C-24	27
5110120C-25	26
5110220C-25	26
5110422C-25	26
5110824C-25	26
5111628C-25	26
5113233C-25	26
5120120C-25	27
5120220C-25	27
5120422C-25	27
5120824C-25	27
5121628C-25	27
5123233C-25	27
5110120C-26	26
5110220C-26	26
5110422C-26	26
5110824C-26	26
5111628C-26	26
5113233C-26	26
5120120C-26	27
5120220C-26	27
5120422C-26	27
5120824C-26	27
5121628C-26	27
5123233C-26	27
5110120V-21	26
5110220V-21	26
5110422V-21	26
5110824V-21	26
5111628V-21	26
5113233V-21	26
5120120V-21	27
5120220V-21	27
5120422V-21	27
5120824V-21	27
5121628V-21	27
5123233V-21	27
5110120V-22	26
5110220V-22	26
5110422V-22	26
5110824V-22	26
5111628V-22	26
5113233V-22	26
5120120V-22	27
5120220V-22	27
5120422V-22	27
5120824V-22	27
5121628V-22	27
5123233V-22	27
5110120V-23	26
5110220V-23	26
5110422V-23	26
5110824V-23	26
5111628V-23	26
5113233V-23	26
5120120V-23	27
5120220V-23	27
5120422V-23	27
5120824V-23	27
5121628V-23	27
5123233V-23	27
5110120V-24	26
5110220V-24	26
5110422V-24	26
5110824V-24	26
5111628V-24	26
5113233V-24	26
5120120V-24	27
5120220V-24	27
5120422V-24	27
5120824V-24	27
5121628V-24	27
5123233V-24	27
5110120V-25	26
5110220V-25	26
5110422V-25	26
5110824V-25	26
5111628V-25	26
5113233V-25	26
5120120V-25	27
5120220V-25	27
5120422V-25	27
5120824V-25	27
5121628V-25	27
5123233V-25	27
5110120V-26	26
5110220V-26	26
5110422V-26	26
5110824V-26	26
5111628V-26	26
5113233V-26	26
5120120V-26	27
5120220V-26	27
5120422V-26	27
5120824V-26	27
5121628V-26	27
5123233V-26	27
5210128P	28
5210233P	28
5210438P	28
5210845P	28
5211653P	28
5213253P	28
5220128P	29
5220233P	29
5220438P	29
5220845P	29
5221653P	29
5223253P	29
5210128B	28
5210233B	28
5210438B	28
5210845B	28
5211653B	28
5213253B	28
5220128B	29
5220233B	29
5220438B	29
5220845B	29
5221653B	29
5223253B	29
5210128C-21	28
5210233C-21	28
5210438C-21	28
5210845C-21	28
5211653C-21	28
5213253C-21	28
5220128C-21	29
5220233C-21	29
5220438C-21	29
5220845C-21	29
5221653C-21	29
5223253C-21	29
5210128C-22	28
5210233C-22	28
5210438C-22	28
5210845C-22	28
5211653C-22	28
5213253C-22	28
5220128C-22	29
5220233C-22	29
5220438C-22	29
5220845C-22	29
5221653C-22	29
5223253C-22	29
5210128C-23	28
5210233C-23	28
5210438C-23	28
5210845C-23	28
5211653C-23	28
5213253C-23	28
5220128C-23	29
5220233C-23	29
5220438C-23	29
5220845C-23	29
5221653C-23	29
5223253C-23	29
5210128C-24	28
5210233C-24	28
5210438C-24	28
5210845C-24	28
5211653C-24	28
5213253C-24	28
5220128C-24	29
5220233C-24	29
5220438C-24	29
5220845C-24	29
5221653C-24	29
5223253C-24	29
5210128C-25	28
5210233C-25	28
5210438C-25	28
5210845C-25	28
5211653C-25	28
5213253C-25	28
5220128C-25	29
5220233C-25	29
5220438C-25	29
5220845C-25	29
5221653C-25	29
5223253C-25	29
5210128C-26	28
5210233C-26	28
5210438C-26	28
5210845C-26	28
5211653C-26	28
5213253C-26	28
5220128C-26	29
5220233C-26	29
5220438C-26	29
5220845C-26	29
5221653C-26	29
5223253C-26	29
5210128V-21	28
5210233V-21	28
5210438V-21	28
5210845V-21	28
5211653V-21	28
5213253V-21	28
5220128V-21	29
5220233V-21	29
5220438V-21	29
5220845V-21	29
5221653V-21	29
5223253V-21	29
5210128V-22	28
5210233V-22	28
5210438V-22	28
5210845V-22	28
5211653V-22	28
5213253V-22	28
5220128V-22	29
5220233V-22	29
5220438V-22	29
5220845V-22	29
5221653V-22	29
5223253V-22	29
5210128V-23	28
5210233V-23	28
5210438V-23	28
5210845V-23	28
5211653V-23	28
5213253V-23	28
5220128V-23	29
5220233V-23	29
5220438V-23	29
5220845V-23	29
5221653V-23	29
5223253V-23	29
5210128V-24	28
5210233V-24	28
5210438V-24	28
5210845V-24	28
5211653V-24	28
5213253V-24	28
5220128V-24	29
5220233V-24	29
5220438V-24	29
5220845V-24	29
5221653V-24	29
5223253V-24	29
5210128V-25	28
5210233V-25	28
5210438V-25	28
5220128V-25	29
5220233V-25	29
5220438V-25	29
5210128V-26	28
5210233V-26	28
5210438V-26	28
5210845V-26	28
5211653V-26	28
5213253V-26	28
5220128V-26	29
5220233V-26	29
5220438V-26	29
5220845V-26	29
5221653V-26	29
5223253V-26	29
5310448P	34
5310858P	34
5310448B	34
5310858B	34
5310448C-21	34
5310858C-21	34
5310448C-22	34
5310858C-22	34
5310448C-23	34
5310858C-23	34
5310448C-24	34
5310858C-24	34
5310448C-26	34
5310858C-26	34
5310448V-21	34
5310858V-21	34
5310448V-22	34
5310858V-22	34
5310448V-23	34
5310858V-23	34
5310448V-24	34
5310858V-24	34
5310448V-26	34
5310858V-26	34
5410253P	36
5410458P	36

Kimble Art. No.	Page
5410663P	36
5410870P	36
5411689P	36
5413289P	36
5420253P	37
5420458P	37
5420663P	37
5420870P	37
5421689P	37
5423289P	37
5410253B	36
5410458B	36
5410663B	36
5410870B	36
5411689B	36
5413289B	36
5420253B	37
5420458B	37
5420663B	37
5420870B	37
5421689B	37
5423289B	37
5410253C-21	36
5410458C-21	36
5410663C-21	36
5410870C-21	36
5411689C-21	36
5413289C-21	36
5420253C-21	37
5420458C-21	37
5420663C-21	37
5420870C-21	37
5421689C-21	37
5423289C-21	37
5410253C-22	36
5410458C-22	36
5410663C-22	36
5410870C-22	36
5411689C-22	36
5413289C-22	36
5420253C-22	37
5420458C-22	37
5420663C-22	37
5420870C-22	37
5421689C-22	37
5423289C-22	37
5410253C-23	36
5410458C-23	36
5410663C-23	36
5410870C-23	36
5411689C-23	36
5413289C-23	36
5420253C-23	37
5420458C-23	37
5420663C-23	37
5420870C-23	37
5421689C-23	37
5423289C-23	37
5410253C-24	36
5410458C-24	36
5410663C-24	36
5410870C-24	36
5411689C-24	36
5413289C-24	36
5420253C-24	37
5420458C-24	37
5420663C-24	37
5420870C-24	37
5421689C-24	37
5423289C-24	37
5410253C-26	36
5410458C-26	36
5410663C-26	36
5410870C-26	36
5411689C-26	36
5413289C-26	36
5420253C-26	37
5420458C-26	37
5420663C-26	37
5420870C-26	37
5421689C-26	37
5423289C-26	37
5410253V-21	36
5410458V-21	36
5410663V-21	36
5410870V-21	36
5411689V-21	36
5413289V-21	36
5420253V-21	37
5420458V-21	37
5420663V-21	37
5420870V-21	37
5421689V-21	37
5423289V-21	37
5410253V-22	36
5410458V-22	36
5410663V-22	36
5410870V-22	36
5411689V-22	36
5413289V-22	36
5420253V-22	37
5420458V-22	37
5420663V-22	37
5420870V-22	37
5421689V-22	37
5423289V-22	37
5410253V-23	36
5410458V-23	36
5410663V-23	36
5410870V-23	36
5411689V-23	36
5413289V-23	36
5420253V-23	37
5420458V-23	37
5420663V-23	37
5420870V-23	37
5421689V-23	37
5423289V-23	37
5410253V-24	36
5410458V-24	36
5410663V-24	36
5410870V-24	36
5411689V-24	36
5413289V-24	36
5420253V-24	37
5420458V-24	37
5420663V-24	37
5420870V-24	37
5421689V-24	37
5423289V-24	37
5410253V-26	36
5410458V-26	36
5410663V-26	36
5410870V-26	36
5411689V-26	36
5413289V-26	36
5420253V-26	37
5420458V-26	37
5420663V-26	37
5420870V-26	37
5421689V-26	37
5423289V-26	37
5510448P	35
5510858P	35
5511670P	35
5513289P	35
5510448B	35
5510858B	35
5511670B	35
5513289B	35
5510448C-81	35
5510858C-81	35
5511670C-81	35
5513289C-81	35
5510448C-82	35
5510858C-82	35
5511670C-82	35
5513289C-82	35
5510448C-83	35
5510858C-83	35
5511670C-83	35
5513289C-83	35
5510448C-84	35
5510858C-84	35
5511670C-84	35
5513289C-84	35
5510448C-86	35
5510858C-86	35
5511670C-86	35
5513289C-86	35
5510448V-81	35
5510858V-81	35
5511670V-81	35
5513289V-81	35
5510448V-82	35
5510858V-82	35
5511670V-82	35
5513289V-82	35
5510448V-83	35
5510858V-83	35
5511670V-83	35
5513289V-83	35
5510448V-84	35
5510858V-84	35
5511670V-84	35
5513289V-84	35
5510448V-86	35
5510858V-86	35
5511670V-86	35
5513289V-86	35
5611220P	32
5610124P	32
5610228P	32
5610433P	32
5610843P	32
5611648P	32
5611220B	32
5610124B	32
5610228B	32
5610433B	32
5610843B	32
5611648B	32
5611220C-21	32
5610124C-21	32
5610228C-21	32
5610433C-21	32
5610843C-21	32
5611648C-21	32
5611220C-22	32
5610124C-22	32
5610228C-22	32
5610433C-22	32
5610843C-22	32
5611648C-22	32
5611220C-23	32
5610124C-23	32
5610228C-23	32
5610433C-23	32
5610843C-23	32
5611648C-23	32
5611220C-24	32
5610124C-24	32
5610228C-24	32
5610433C-24	32
5610843C-24	32
5611648C-24	32
5611220C-25	32
5610124C-25	32
5610228C-25	32
5610433C-25	32
5611220C-26	32
5610124C-26	32
5610228C-26	32
5610433C-26	32
5610843C-26	32
5611648C-26	32
5611220V-21	32
5610124V-21	32
5610228V-21	32
5610433V-21	32
5610843V-21	32
5611648V-21	32
5611220V-22	32
5610124V-22	32
5610228V-22	32
5610433V-22	32
5610843V-22	32
5611648V-22	32
5611220V-23	32
5610124V-23	32
5610228V-23	32
5610433V-23	32
5610843V-23	32
5611648V-23	32
5611220V-24	32
5610124V-24	32
5610228V-24	32
5610433V-24	32
5610843V-24	32
5611648V-24	32
5611220V-25	32
5610124V-25	32
5610228V-25	32
5610433V-25	32
5611220V-26	32
5610124V-26	32
5610228V-26	32
5610433V-26	32
5610843V-26	32
5611648V-26	32
5710133P	30
5710238P	30
5710448P	30
5710858P	30
5710133B	30
5711670P	30
5710238B	30
5710448B	30
5710858B	30
5711670B	30
5710133C-21	30
5710238C-21	30
5710448C-21	30
5710858C-21	30
5711670C-21	30
5710133C-22	30
5710238C-22	30
5710448C-22	30
5710858C-22	30
5711670C-22	30
5710133C-23	30
5710238C-23	30
5710448C-23	30
5710858C-23	30
5711670C-23	30
5710133C-24	30
5710238C-24	30
5710448C-24	30
5710858C-24	30
5711670C-24	30
5710133C-25	30
5710238C-25	30
5710133C-26	30
5710238C-26	30
5710448C-26	30
5710858C-26	30
5711670C-26	30
5710133V-21	30
5710238V-21	30
5710448V-21	30
5710858V-21	30
5711670V-21	30
5710133V-22	30
5710238V-22	30
5710448V-22	30
5710858V-22	30
5711670V-22	30
5710133V-23	30
5710238V-23	30
5710448V-23	30
5710858V-23	30
5711670V-23	30
5710133V-24	30
5710238V-24	30
5710448V-24	30
5710858V-24	30
5711670V-24	30
5710133V-25	30
5710238V-25	30
5710133V-26	30
5710238V-26	30
5710448V-26	30
5710858V-26	30
5711670V-26	30
5810133P	31
5810238P	31
5810448P	31
5810858P	31
5811670P	31
5810133B	31
5810238B	31
5810448B	31
5810858B	31
5811670B	31
5810133C-21	31
5810238C-21	31
5810448C-21	31
5810858C-21	31
5811670C-21	31
5810133C-22	31
5810238C-22	31
5810448C-22	31
5810858C-22	31
5811670C-22	31
5810133C-23	31
5810238C-23	31
5810448C-23	31
5810858C-23	31
5811670C-23	31
5810133C-24	31
5810238C-24	31
5810448C-24	31
5810858C-24	31
5811670C-24	31
5810133C-25	31
5810238C-25	31
5810133C-26	31
5810238C-26	31
5810448C-26	31
5810858C-26	31
5811670C-26	31
5810133V-21	31
5810238V-21	31
5810448V-21	31
5810858V-21	31
5811670V-21	31
5810133V-22	31
5810238V-22	31
5810448V-22	31
5810858V-22	31
5811670V-22	31
5810133V-23	31
5810238V-23	31
5810448V-23	31
5810858V-23	31
5811670V-23	31
5810133V-24	31
5810238V-24	31
5810448V-24	31
5810858V-24	31
5811670V-24	31
5810133V-25	31
5810238V-25	31
5810133V-26	31
5810238V-26	31
5810448V-26	31
5810858V-26	31
5811670V-26	31
5910400C-30	33
5910133B	33
5910233B	33
5910133C-21	33
5910133C-25	33
5910133C-26	33
5910233C-21	33
5910233C-25	33
5910233C-26	33
5910243B	35
5910243C-21	35
5910243C-26	35
5916438B	38
5919138B	38
5928038B	38
5929138B	38
5916438V-21	38
5919138V-21	38
5928038V-21	38
5929138V-21	38
5916438V-24	38
5919138V-24	38
5928038V-24	38
5929138V-24	38
5916438V-25	38
5919138V-25	38
5928038V-25	38
5929138V-25	38
5916438V-26	38
5919138V-26	38
5928038V-26	38
5929138V-26	38
75201-20400	40
75201-22400	40
75201-24400	40
75201-28400	40
75201-33400	40
75201-38400	40
75201-43400	40
75201-45400	40
75201-48400	40
75201-53400	40
75201-58400	40
75201-63400	40
75201-70400	40
75201-89400	40
75202-20400	40
75202-22400	40
75202-24400	40
75202-28400	40
75202-33400	40
75202-38400	40
75202-43400	40
75202-45400	40
75202-48400	40
75202-53400	40
75202-58400	40
75202-63400	40
75202-70400	40
75202-89400	40
75203-20400	40
75203-22400	40
75203-24400	40
75203-28400	40
75203-33400	40
75203-38400	40
75203-43400	40
75203-45400	40
75203-48400	40
75203-53400	40
75203-58400	40
75203-63400	40
75203-70400	40
75203-89400	40
75204-20400	41
75204-22400	41
75204-24400	41
75204-28400	41
75204-33400	41
75204-38400	41
75204-43400	41
75204-45400	41
75204-48400	41
75204-53400	41
75204-58400	41
75204-63400	41
75204-70400	41
75204-89400	41
75205-20400	41
75205-22400	41
75205-24400	41
75205-28400	41
75205-33400	41
75205-38400	41
75206-20400	41
75206-22400	41
75206-24400	41
75206-28400	41
75206-33400	41
75206-38400	41
75206-43400	41
75206-45400	41
75206-48400	41
75206-53400	41
75206-58400	41
75206-63400	41
75206-70400	41
75206-89400	41
75201G-20400	40
75201G-22400	40
75201G-24400	40
75201G-28400	40
75201G-33400	40
75201G-38400	40
75201G-43400	40
75201G-45400	40
75201G-48400	40
75201G-53400	40
75201G-58400	40
75201G-63400	40
75201G-70400	40
75201G-89400	40
75202G-20400	40
75202G-22400	40
75202G-24400	40
75202G-28400	40
75202G-33400	40
75202G-38400	40
75202G-43400	40
75202G-45400	40
75202G-48400	40
75202G-53400	40
75202G-58400	40
75202G-63400	40
75202G-70400	40
75202G-89400	40
75203G-20400	40
75203G-22400	40
75203G-24400	40
75203G-28400	40
75203G-33400	40
75203G-38400	40
75203G-43400	40
75203G-45400	40
75203G-48400	40
75203G-53400	40
75203G-58400	40
75203G-63400	40
75203G-70400	40
75203G-89400	40
75204G-20400	41
75204G-22400	41
75204G-24400	41
75204G-28400	41
75204G-33400	41
75204G-38400	41
75204G-43400	41
75204G-45400	41
75204G-48400	41
75204G-53400	41
75204G-58400	41
75204G-63400	41
75204G-70400	41
75204G-89400	41
75205G-20400	41
75205G-22400	41
75205G-24400	41
75205G-28400	41
75205G-33400	41
75205G-38400	41
75206G-20400	41
75206G-22400	41
75206G-24400	41
75206G-28400	41
75206G-33400	41
75206G-38400	41
75206G-43400	41
75206G-45400	41
75206G-48400	41
75206G-53400	41
75206G-58400	41
75206G-63400	41
75206G-70400	41
75206G-89400	41

Kontes Art. No.	Page
1011	59
1055	59
1011-A	59
1011-D	59
1011-G	59
1011-R	59
1051-1000	59
1051-500	59
1051-B	59
1051-D	59
1051-G	59
1051-R-1000	59
1051-R-500	59
1055-1000	59
4011-250	24
4011-400	24
4011-600	24
4011-800	24
5011-0015	369
5013-0100	369
150100-0221	1
150100-0223	1
150100-0224	1
150100-0241	1
150100-0242	1
150100-0243	1
150100-0254	1
150100-0261	1
150100-0262	1
150100-0263	1
150100-0264	1
150100-0265	1
150100-0266	1
150100-0267	1
150100-0268	1
150100-0269	1
150100-0270	1
150100-0271	1
150100-0272	1
150100-0273	1
150100-0274	1
150100-0275	1
150100-0277	1
150100-0279	1
150100-0282	1
150100-0285	1
150100-0287	1
150100-0432	1
150100-0437	1
150100-0439	1
150100-0451	1
150100-0452	1
150100-0455	1
150100-0456	1
150100-0642	1
150100-2610	1
150100-2611	1
150100-2613	1
150750-0020	1
150750-0223	1
150750-0242	1
150750-0265	1
150750-0266	1
150750-0268	1
150750-0277	1
150750-0285	1
150750-0437	1
150750-2610	1
150800-0223	1
150800-0265	1
150800-0268	1
150800-0277	1
150800-0285	1
157000-2440	4
157500-2440	4
157500-2942	4
158000-2440	4
158000-2942	4
159500-2440	5
161000-2440	6
161000-2942	6
161100-2440	6
161500-2440	6
161500-2942	6
161600-2440	6
163000-2440	7
163000-2942	7
164010-2440	7
166000-7524	2
166000-7529	2
166100-1224	2
166100-1229	2
166100-1729	2
166100-3024	2
166100-7524	2
166100-7529	2
166200-1224	2
166200-1229	2
166200-1724	2
166200-1729	2
166200-3024	2
166200-7524	2
166200-7529	2
166600-0314	364
166600-0319	364
166600-0324	364
167000-2440	8
167010-2440	8
167010-2942	8
167100-2440	8
167500-2440	8
167500-2942	8
169500-2440	9
176500-2440	9
178100-2425	11
17810-11300	97
17810-19300	97
178110-2440	11
178110-2942	11
178120-0014	11
178120-0024	11
178120-0029	11
178120-0124	11
178120-0129	11
178130-1420	11
178130-2440	11
178130-2942	11
179000-2440	12
179700-0514	13
179700-0519	13
179700-0524	13
179700-0529	13
179700-0814	145
179700-0819	13
179700-0824	13
179700-0829	13
179700-1119	13
179700-1124	13
179700-1129	13
179700-1424	13
179700-1429	13
179700-1729	13
179700-2114	13
179700-2119	13
179700-2124	13
179700-2129	13
179710-2114	13
179710-2119	13
179710-2124	13
179710-2129	13
179720-2129	13
179730-0808	2
179730-0811	2
179740-0505	2
179740-0808	2
179744-0808	2
179750-0514	15
179750-0524	15
179750-0814	15
179750-0819	15
179750-0824	15
179750-0829	15
179750-1119	15
179750-1124	15
179750-1129	15
179750-1424	15
179750-2114	15
179750-2124	15
179750-2129	15
179800-2110	14
179800-2114	14
179800-2119	14
179800-2124	14
179800-2129	14
179800-2214	14
179800-2224	14
179800-2324	14
179802-0021	4
179802-0022	4
179802-0023	4
179850-2114	16
179850-2124	16
179850-2214	16
179850-2224	16
179850-2314	16
179850-2324	16
179920-0510	4
179920-0808	4
179920-1010	4
179950-4532	212
179951-3213	212
180000-2440	15
181000-2440	12
181500-2440	17
181500-2942	17
181700-3525	361
182900-2440	17
182900-2942	17
182910-2440	17
182920-2440	17
182920-2926	17
182920-2942	17
183000-2440	17
183000-2942	17
183010-2440	17
183010-2942	17
183100-1502	477
185000-2440	18
185000-2942	18
185030-2440	19
185030-2942	19
185031-2440	19
185031-2942	19
186000-2440	19
186055-2440	18
186055-2926	18
186055-2942	18
188000-2440	2
188000-2942	2
190000-2440	19
190000-2942	19
195500-2440	14
197000-2440	16
197000-2942	16
197500-2440	10
197500-2942	10
197800-2440	19
198000-2440	15
198100-2440	15
199000-2440	14
205000-2440	16
205000-2942	16
205100-1420	10
205100-2440	10
205500-2440	5
205500-2942	5
205600-1420	5
205600-1922	5
205600-2440	5
205600-2942	5
206000-2440	5
211010-1415	477
211010-2415	477
211010-2815	477
211040-0015	477
211040-1215	477
211050-1420	462
211050-2440	462
211100-1420	462
211100-2440	462
211200-1420	462
211200-2440	462
211210-0015	478
211230-2440	462
211250-1420	463
211250-2440	463
211275-1420	463
211275-2440	463
211300-1420	462
211300-2440	462
211310-0015	478
211320-0815	478
211320-1215	478
211330-1420	462
211330-1922	462
211330-2440	462
211410-2440	10
211450-1420	463
211450-2440	463
211460-2440	469
213000-0215	479
213000-0515	479
213000-1015	479
213100-0114	468
213100-0214	468
213100-0514	468
213100-1014	468
213100-1024	468
213100-2014	468
213100-2024	468
213100-5024	468
213202-0514	468
213202-1014	468
213202-2514	468
213202-2524	468
213202-5024	468
213205-0514	469
213205-1014	469
213205-2514	469
213205-2524	469
213205-5024	469
213210-0500	469
213210-1000	469
215000-2023	470
215000-2044	470
215000-6023	470
215000-6044	470
215100-2023	470
215100-2044	470
215100-6023	470
215100-6044	470
215200-0100	470
215200-0250	470
215500-1523	467
215500-1544	467
215500-6023	467
215500-6044	467
215510-1523	479
215510-1544	479
216030-0003	476
216030-0004	476
216030-0005	476
216040-0003	476
216040-0004	476
216040-0005	476
216050-0000	474
216050-0005	474
216060-0000	475
216060-0003	475
216080-2440	9
216100-0000	463
216130-0003	474
216130-0004	474
216130-0005	474
216140-0003	475
216140-0004	475
216140-0005	475
216145-0003	475
216145-0004	475
216145-0005	475
216150-0000	481
216151-0000	481
216152-0000	481
218702-0214	471
218702-0514	471
218702-1014	471
218702-1024	471
218706-0214	471
218706-0514	471
218706-1014	471
218706-1024	471
218706-2524	471
218710-0015	471
218710-0025	471
218710-0050	471
218710-0100	471
218710-0350	471
218720-0015	471
218720-0025	471
218720-0050	471
218720-0100	471
218720-0350	471
241100-0000	21
241101-2440	21
241102-0000	21
241160-0000	21
241161-0000	21
251175-0000	9
251200-0000	462
251450-0015	230
269320-0000	296
269330-0000	297
269501-0000	296
269501-0002	296
269800-0000	296
272900-0000	4
272900-1922	4
273100-0000	4
273200-0000	5
273200-1922	5
273410-0000	12
273500-0022	1
273500-0024	1
273500-0220	1
273750-0000	6
273755-0000	6
273760-0000	6
274000-0000	6
274200-0000	7
274750-0221	1
274750-0240	1
274750-0241	1
274750-0242	1
274750-0243	1
274750-0253	1
274750-0254	1
274750-0259	1
274750-0263	1
274750-0264	1
274750-0266	1
274750-0268	1
274750-0272	1
274750-0273	1
274800-0030	2
274800-0090	2
274900-0000	8
274900-1922	8
274950-0000	8
274960-0000	8
274960-1922	8
275050-1420	9
275060-0000	8
275070-1420	9
275090-0000	10
275095-0000	10
275095-2414	10
275095-2914	10
275095-2919	10
275095-2924	10
275100-0000	11
275110-0000	11
275200-0000	18
275210-0000	18
275230-0000	19
275231-0000	19
275240-0000	19
275241-0000	19
275400-0035	12
275400-0060	12
275410-1420	14
275410-1922	14
275501-0000	12
275600-0000	12
275750-1420	19
275750-1922	19
275900-0000	2
276000-0000	17
276010-0000	17
276020-0000	17
276030-0000	17
276100-1420	17
276100-1922	17
276110-1420	17
276110-1922	17
276120-1420	17
276120-1922	17
276130-1420	17
276250-0000	14
276400-0000	5
276405-0000	5
276410-0000	5
276750-0000	16
276760-0000	16
280500-0000	135
282000-0000	145
282010-0000	145
282020-0000	145
282210-0000	149
282460-0200	152
282550-0000	152
282555-0000	152
282560-0000	152
283000-0000	150
283010-0000	150
283050-0000	150
283055-0000	150
283100-0000	150
283250-0000	144
283400-0000	146
283410-0000	146
283550-0004	451
283550-0007	451
284000-0005	156
284000-0010	156
284000-0025	156
284800-0000	180
285053-0000	181
285054-0000	181
285250-0000	181
285251-0000	181
285605-0000	236
286000-0021	183
286000-0022	183
286100-0000	297
286500-0000	183
286700-0000	184
286710-0150	184
286710-0300	184
286810-0200	183
286810-0300	183
286820-0110	183
286900-0000	185
287100-0000	185
287110-0000	185
287120-0000	185
287150-0000	185
287320-0000	186
287450-0000	186
287630-0000	187
287631-0000	187
287800-0000	188
287801-0000	188
287802-0000	235
287900-0000	189
287901-0000	189
287902-0000	189
287910-0000	189
287911-0000	189
287912-0000	189
287913-0000	189
288050-0000	188
288051-0000	188
288100-0000	189
288101-0000	189
288200-0000	190
288250-0000	190
288251-0000	190
288251-0040	190
288260-0001	190
288681-0000	192
288730-0000	191
288770-0010	191
288790-0002	191
288790-0005	191
288790-0010	191
289080-0031	182
289080-0035	182
289080-0041	182
291000-0000	195
291100-0000	195
291100-0019	195
291200-0000	195
291210-0000	195
292010-0000	199
292011-0000	199
292100-0000	201
292900-0030	25
293001-0023	207
293001-0026	207
293001-0044	207
293050-0123	207
293050-0126	207
293050-0144	207
293050-0323	207
293050-0326	207
293050-0344	207
293050-0623	207
293050-0626	207
293050-0644	207
293450-0000	151
294000-0005	234
294000-0010	234
294000-0015	234
294000-0025	234
294000-0035	234
294000-0050	234
294000-0100	234
294000-0250	234
294000-0500	234
294010-0005	234
294010-0010	234
294010-0015	234
294010-0025	234
294010-0035	234
294010-0050	234
294010-0100	234
294010-0250	234
294010-0500	234
294250-0005	230
294250-0010	230
294250-0015	230
294250-0025	230
294250-0035	230
294250-0050	230
294250-0075	230
294250-0100	230
294250-0250	230
294260-0005	230
294260-0010	230
294260-0015	230
294260-0025	230
294260-0035	230
294260-0050	230
294260-0075	230
294260-0100	230
294260-0250	230
294300-0010	231
294300-0025	231
294300-0050	231
294300-0100	231
294300-0200	231
294305-0010	231
294305-0025	231
294305-0050	231
294305-0100	231
294320-0025	231
294320-0050	231
294320-0100	231
294410-0000	236
294500-0010	230
294750-0010	230
294760-0025	230

Kontes Art. No.	Page
294760-0050	230
294760-0100	230
294990-0010	237
294990-0015	237
294990-0025	237
294990-0050	237
294990-0100	237
294990-0250	237
294990-0500	237
295000-0015	237
295000-0025	237
295000-0050	237
295000-0100	237
295000-0250	237
295000-0500	237
295010-0015	237
295010-0025	237
295010-0050	237
295010-0100	237
295010-0250	237
295010-0500	237
295500-0015	240
295500-0025	240
295500-0050	240
295500-0100	240
295500-0250	240
295500-0500	240
295510-0025	240
295510-0050	240
295510-0100	240
295510-0250	240
295510-0500	240
295550-0015	240
295550-0025	240
295550-0050	240
295550-0100	240
295550-0250	240
295550-0500	240
295740-0025	230
295740-0050	230
295790-0025	241
295790-0050	241
295790-0100	241
295790-0250	241
296100-0050	244
296100-0100	244
296110-0000	244
296150-0250	244
296150-0300	244
296150-0500	244
296170-0000	245
296190-0000	245
296200-0000	136
296250-0010	235
296250-0025	235
296250-0050	235
296250-0100	235
296500-0005	226
296500-0010	226
296500-0015	226
296500-0025	226
296500-0050	226
296500-0100	226
296500-0125	226
296510-0025	226
296510-0050	226
296510-0100	226
296510-0125	226
296510-0250	226
297000-0001	255
297000-0002	255
297000-0003	255
297000-0005	255
297000-0010	255
297001-0001	255
297001-0002	255
297001-0003	255
297001-0005	255
297001-0010	255
297050-0001	255
297050-0002	255
297050-0003	255
297050-0005	255
297050-0010	255
298000-0000	268
298030-0000	268
298280-0010	273
298280-0025	273
298280-0050	273
298280-0125	273
298281-0010	273
298281-0025	273
298281-0050	273
298281-0125	273
298290-0060	274
298290-0125	274
298290-0250	274
298290-0500	274
298780-0010	260
298780-0025	260
298780-0050	260
298781-0010	260
298781-0025	260
298781-0050	260
298790-0075	260
299030-0010	261
299030-0025	261
299030-0050	261
299041-0010	262
299041-0025	262
299041-0050	262
299090-0060	261
299090-0125	261
299230-0010	262
299230-0025	262
299230-0050	262
299231-0010	262
299231-0025	262
299231-0050	262
299250-0010	262
299250-0025	262
299250-0050	262
299250-0060	262
299250-1010	262
299250-1025	262
299250-1050	262
299250-1060	262
299251-0010	262
299251-0025	262
299251-0050	262
299261-0025	265
299280-0010	263
299280-0025	263
299280-0050	263
299281-0010	263
299281-0025	263
299281-0050	263
299290-0060	264
299290-0125	264
299290-0250	264
299310-0010	266
299310-0025	266
299310-0050	266
299311-0010	266
299311-0025	266
299311-0050	266
299321-0050	266
299350-0030	267
299350-0060	267
299351-0030	267
299351-0060	267
299352-0030	267
299352-0060	267
299400-0015	268
299400-0050	268
3011-1000	229
3011-500	229
302000-0010	283
302000-0025	283
3021-800	229
302250-0010	283
302250-0025	283
302250-0050	283
302250-0100	283
303860-0000	380
303861-0000	380
303862-0000	380
304001-0000	380
304151-0000	383
305750-0221	389
305751-0221	389
306500-0000	407
306501-0000	407
306502-0000	407
308900-0211	411
308900-0231	411
309000-0021	411
309000-0023	411
309140-0200	412
309140-0300	412
309150-0200	412
309150-0250	412
309150-0300	412
309180-0290	411
309250-0000	411
317000-0050	25
317000-0100	25
317000-0250	25
317000-0500	25
317000-1000	25
317000-2000	25
318000-0000	25
318100-0000	25
319010-0050	25
319011-0050	25
319012-0050	25
321000-0100	53
321000-0250	53
321000-0500	53
321000-1000	53
321000-2000	53
329103-0000	43
329105-0000	43
329150-0000	43
329300-0000	43
329325-0000	43
332100-0221	56
332140-0251	56
332200-1000	56
332250-2000	42
354000-0250	64
354000-0500	64
354000-1000	64
410090-0015	432
410090-0050	432
410112-0000	76
410113-0000	76
410116-1325	107
410119-1305	78
410119-1307	78
410119-1508	78
410119-2011	78
410119-2015	78
410119-2214	78
410119-2817	78
410119-3021	78
410119-3324	78
410119-3527	78
410121-1325	335
410121-2800	335
410125-7000	76
410133-0100	76
410134-0100	76
410135-0051	76
410135-0100	76
410136-4504	53
410138-4504	53
410150-0002	432
410170-3220	212
410170-4534	212
410171-2916	212
410171-4226	212
410500-0005	433
410500-0015	433
410550-0005	434
410550-0013	434
410550-0025	434
410550-0045	434
410551-0005	434
410551-0013	434
410551-0025	434
410551-0045	434
411050-0050	432
411050-0100	432
411800-0015	432
411800-1015	432
412510-0000	339
416170-0510	126
416170-0520	126
416170-1020	126
416170-1118	126
416170-1119	126
416170-1120	126
416170-1121	126
416170-1122	126
416170-1123	126
416170-1124	126
416170-1125	126
416171-0500	126
416171-1000	126
416171-3412	126
416171-6021	126
416172-0308	126
416172-0310	126
416175-0000	125
416180-0000	125
416180-1020	125
416181-0000	125
416181-0001	126
416181-0308	126
416181-0310	126
416182-0000	125
416185-0000	125
416186-0000	125
416190-0000	125
416190-4900	125
416191-0000	125
416192-0000	125
416400-0021	126
416400-0022	126
416400-0023	126
416430-0000	128
416431-0000	128
416432-0000	128
416433-0000	128
416434-0000	128
416450-0000	128
419000-8505	107
419001-8505	107
420000-0000	100
420100-0022	100
420100-0023	100
420125-0000	100
420150-0000	100
420160-0000	96
420162-0000	96
420162-0020	96
420163-0000	131
420163-0001	131
420163-1500	131
420163-4500	131
420163-4503	131
420164-0000	96
420166-0001	96
420166-1001	96
420168-0000	96
420168-1000	96
420169-0000	96
420280-0213	99
420280-0222	99
420280-0232	99
420280-0242	99
420280-0252	99
420290-0000	100
420300-0021	98
420300-0022	98
420300-0023	98
420320-0213	99
420320-0224	99
420320-0233	99
420320-0234	99
420320-0245	99
420320-0256	99
420400-0704	93
420400-0705	93
420400-0710	93
420400-0715	93
420400-0720	93
420400-0730	93
420400-0750	93
420400-1005	93
420400-1010	93
420400-1012	93
420400-1015	93
420400-1020	93
420400-1030	93
420400-1050	93
420400-1505	93
420400-1510	93
420400-1511	93
420400-1512	93
420400-1515	93
420400-1517	93
420400-1520	93
420400-1530	93
420400-1550	93
420400-1575	93
420400-2505	93
420400-2510	93
420400-2511	93
420400-2512	93
420400-2515	93
420400-2520	93
420400-2530	93
420400-2550	93
420400-2575	93
420401-0704	93
420401-0705	93
420401-0710	93
420401-0715	93
420401-0720	93
420401-0730	93
420401-0750	93
420401-1005	93
420401-1010	93
420401-1011	93
420401-1012	93
420401-1015	93
420401-1020	93
420401-1030	93
420401-1050	93
420401-1505	93
420401-1510	93
420401-1511	93
420401-1512	93
420401-1515	93
420401-1517	93
420401-1520	93
420401-1530	93
420401-1550	93
420401-1575	93
420401-2505	93
420401-2510	93
420401-2511	93
420401-2512	93
420401-2515	93
420401-2520	93
420401-2530	93
420401-2550	93
420401-2575	93
420404-1000	94
420404-1500	94
420404-2500	94
420405-0100	268
420405-0700	268
420406-0500	94
420406-0525	94
420406-1000	94
420406-1025	94
420407-0000	129
420407-2003	129
420407-2013	129
420407-2113	129
420408-0000	129
420411-0000	131
420412-0000	129
420415-1000	94
420415-1001	94
420415-1500	94
420415-1501	94
420415-2500	94
420415-2501	94
420510-0120	102
420510-0125	102
420510-0130	102
420510-0150	102
420510-0220	102
420510-0225	102
420510-0230	102
420510-0250	102
420510-0320	102
420510-0325	102
420510-0330	102
420510-0350	102
420510-0420	102
420510-0425	102
420510-0430	102
420510-0450	102
420510-0520	102
420510-0525	102
420510-0530	102
420510-0550	102
420510-0560	102
420510-0620	102
420510-0625	102
420510-0630	102
420510-0650	102
420510-0660	102
420510-0720	102
420510-0725	102
420510-0730	102
420510-0750	102
420510-0760	102
420510-5000	102
420530-0125	98
420530-0130	98
420530-0150	98
420530-0211	98
420530-0212	98
420530-0213	98
420530-0214	98
420530-0220	98
420530-0221	98
420530-0222	98
420530-0225	98
420530-0226	98
420530-0232	98
420530-0233	98
420530-0234	98
420530-0241	98
420530-0242	98
420530-0244	98
420530-0251	98
420530-0252	98
420530-0253	98
420530-0255	98
420530-0265	98
420530-0273	98
420530-0275	98
420530-0320	98
420530-0325	98
420530-0330	98
420530-0350	98
420530-0414	98
420530-0415	98
420530-0420	98
420530-0425	98
420530-0430	98
420530-0450	98
420530-0520	98
420530-0525	98
420530-0530	98
420530-0550	98
420530-0560	98
420530-0620	98
420530-0625	98
420530-0630	98
420530-0650	98
420530-0660	98
420530-0720	98
420530-0725	98
420530-0730	98
420530-0750	98
420530-0760	98
420540-0120	99
420540-0125	99
420540-0130	99
420540-0150	99
420540-0213	99
420540-0220	99
420540-0224	99
420540-0225	99
420540-0230	99
420540-0233	99
420540-0234	99
420540-0243	99
420540-0245	99
420540-0250	99
420540-0256	99
420540-0320	99
420540-0325	99
420540-0420	99
420540-0425	99
420540-0430	99
420540-0450	99
420540-0520	99
420540-0525	99
420540-0530	99
420540-0550	99
420540-0560	99
420540-0620	99
420540-0625	99
420540-0630	99
420540-0650	99
420540-0660	99
420540-0720	99
420540-0725	99
420540-0730	99
420540-0750	99
420540-0760	99
420540-2610	99
420550-0120	103
420550-0125	103
420550-0130	103
420550-0150	103
420550-0213	103
420550-0220	103
420550-0224	103
420550-0225	103
420550-0230	103
420550-0233	103
420550-0234	103
420550-0243	103
420550-0245	103
420550-0250	103
420550-0256	103
420550-0320	103
420550-0325	103
420550-0330	103
420550-0350	103
420550-0420	103
420550-0425	103
420550-0430	103
420550-0450	103
420550-0520	103
420550-0525	103
420550-0530	103
420550-0550	103
420550-0560	103
420550-0620	103
420550-0625	103
420550-0630	103
420550-0650	103
420550-0660	103
420550-0720	103
420550-0725	103
420550-0730	103
420550-0750	103
420550-0760	103
420550-2610	103
420550-5000	103
420570-0124	102
420570-0224	102
420570-0524	102
420570-1024	102
420570-1045	102
420570-2024	102
420570-2045	102
420570-3045	102
420570-5045	102
420575-2440	103
420575-4550	103

Kontes Art. No.	Page
420600-0000	107
420610-0120	104
420610-0125	104
420610-0130	104
420610-0320	104
420610-0325	104
420610-0330	104
420610-0350	104
420610-0420	104
420610-0425	104
420610-0430	104
420610-0450	104
420610-0520	104
420610-0530	104
420610-0550	104
420610-0560	104
420610-0620	104
420610-0630	104
420610-0650	104
420610-0660	104
420610-0720	104
420610-0730	104
420610-0750	104
420610-0760	104
420610-5000	104
420620-0120	104
420620-0125	104
420620-0130	104
420620-0320	104
420620-0325	104
420620-0330	104
420620-0350	104
420620-0420	104
420620-0425	104
420620-0430	104
420620-0450	104
420620-0520	104
420620-0530	104
420620-0550	104
420620-0560	104
420620-0620	104
420620-0630	104
420620-0650	104
420620-0660	104
420620-0720	104
420620-0730	104
420620-0750	104
420620-0760	104
420620-5000	104
420804-0001	130
420804-0601	130
420809-0510	87
420809-0511	89
420809-0520	87
420809-0540	87
420809-1010	87
420809-1011	89
420809-1020	87
420809-1040	87
420809-2010	87
420809-2011	89
420809-2020	87
420809-2040	87
420811-2010	87
420811-2011	89
420811-2020	87
420811-2040	87
420817-2306	131
420817-2313	131
420817-3306	131
420817-3313	131
420818-0000	130
420818-0600	130
420818-0606	130
420818-3305	130
420821-0018	130
420821-0116	130
420821-0618	130
420821-3519	130
420821-6116	130
420821-6218	130
420822-0018	130
420822-0116	130
420822-1019	130
420822-2007	130
420823-0014	133
420823-0018	133
420823-0116	133
420826-0018	91
420826-0116	91
420827-0018	91
420827-0116	91
420828-0018	91
420828-0116	91
420830-1000	87
420830-1010	87
420830-1020	87
420830-1040	101
420830-1200	87
420830-1210	87
420830-1220	87
420830-1240	101
420830-1500	87
420830-1510	87
420830-1520	87
420830-1540	101
420830-3000	87
420830-3010	87
420830-3020	87
420830-3040	101
420830-6000	87
420830-6010	87
420830-6020	87
420830-6040	101
420831-1000	87
420831-1010	87
420831-1020	87
420831-1040	101
420831-1200	87
420831-1210	87
420831-1220	87
420831-1240	101
420831-1500	87
420831-1510	87
420831-1520	87
420831-1540	101
420831-3000	87
420831-3010	87
420831-3020	87
420831-3040	101
420831-6000	87
420831-6010	87
420831-6020	87
420831-6040	101
420832-2100	87
420832-2110	87
420832-2120	87
420832-4100	88
420832-4110	88
420832-4120	88
420833-0000	87
420833-0010	87
420833-0020	87
420833-1000	88
420833-1010	88
420833-1020	88
420836-0000	89
420836-0020	89
420836-0040	89
420836-1620	89
420837-0000	90
420837-0020	90
420837-0040	90
420870-1000	88
420870-1010	88
420870-1020	88
420870-1200	88
420870-1210	88
420870-1220	88
420870-1500	88
420870-1510	88
420870-1520	88
420870-3000	88
420870-3010	88
420870-3020	88
420870-6000	88
420870-6010	88
420870-6020	88
420876-0000	89
420876-0020	89
420876-0040	89
420876-1620	89
422230-2512	105
422230-2520	105
422230-2525	105
422230-5012	105
422230-5020	105
422230-5025	105
422231-2512	105
422231-2520	105
422231-2525	105
422231-5012	105
422231-5020	105
422231-5025	105
422250-2512	105
422250-2520	105
422250-2525	105
422251-2512	105
422251-2520	105
422251-2525	105
422370-0012	106
422370-0020	106
422370-0025	106
422371-0012	106
422371-0020	106
422371-0025	106
422380-0012	105
422380-0020	105
422380-0025	105
422390-0012	106
422390-0020	106
422390-0025	106
422391-0012	106
422391-0020	106
422391-0025	106
422420-0012	106
422420-0020	106
422420-0025	106
422425-0012	106
422425-0020	106
422425-0025	106
422440-1512	106
422440-1520	106
422440-1525	106
422440-2512	106
422440-2520	106
422440-2525	106
422440-5012	106
422440-5020	106
422440-5025	106
422500-0125	127
422500-0250	127
422501-0125	127
422501-0250	127
422530-0010	127
422530-0025	127
422530-0050	127
422530-0125	127
422530-0250	127
422530-0500	127
422531-0010	127
422531-0050	127
422531-0125	127
422531-0250	127
422531-0500	127
422532-0010	127
422532-0025	127
422532-0050	127
422532-0125	127
422532-0250	127
422532-0500	127
422533-0014	291
422533-0019	291
422533-0024	291
422534-0014	291
422534-0019	291
422534-0024	291
422534-0029	291
422540-0000	127
422541-0000	127
422542-0000	453
422550-0000	127
422551-0000	127
422560-0000	438
422561-0000	438
422570-0000	438
427100-0000	107
427101-0000	107
427102-0000	107
427103-0000	107
427104-0000	107
427105-0000	107
431000-2420	144
431000-2425	144
431000-2430	144
431000-2440	144
431000-2920	144
431000-2930	144
431000-2940	144
431500-2430	144
437000-2440	147
437000-2942	147
439000-2420	148
439000-2425	148
439000-2430	148
439000-2440	148
439000-2920	148
439000-2930	148
439000-2940	148
444500-2420	148
444500-2425	148
447000-2410	149
447000-2420	149
447000-2425	149
447000-2430	149
447000-2440	149
447000-2920	149
447000-2930	149
447000-2940	149
448000-2410	149
448000-2420	149
448000-2430	149
452000-2410	152
452000-2420	152
452000-2430	152
452750-2430	152
456000-0021	144
456000-0022	144
456000-0023	144
456000-0024	144
456000-0025	144
456000-0026	144
456250-0021	147
456250-0022	147
456250-0023	147
456300-2440	147
456900-2024	150
456900-3024	150
457000-0125	150
457000-0175	150
457000-0225	150
457050-0000	150
457100-0175	150
457100-0225	150
457250-0225	151
457270-2425	151
457500-2420	146
457500-2425	146
457500-2930	146
457750-2425	146
458000-2950	148
459000-0021	151
459000-0022	151
459951-0000	330
459960-0000	330
459961-0000	330
479100-0000	175
479101-0000	175
479102-0000	175
479103-0000	145
479104-0000	175
479105-0000	175
479110-0000	176
479112-0000	176
479114-0000	176
479115-0000	176
479120-0000	176
479121-0000	176
479155-0050	171
479156-3001	171
479156-4501	171
479157-0000	171
479158-0318	171
479159-0002	171
479160-0000	171
479160-0005	175
479161-0000	171
479162-0023	171
479163-0002	171
479164-1602	171
479190-3000	171
479200-3000	171
479210-3000	171
479215-0152	172
479216-0305	172
479217-0043	172
479218-0046	172
479219-0018	172
479220-3000	172
481500-4000	158
481755-0100	157
481755-0250	157
481755-0500	157
481755-1000	157
482600-0025	156
482600-0050	156
482600-0100	156
482600-0250	156
501000-2024	183
503000-0121	184
503000-0122	184
503100-0002	184
503100-0003	184
503500-0221	184
503500-0222	184
503500-0223	184
513400-0000	178
513600-0000	177
513650-0000	176
513700-0000	174
513750-0000	185
513750-2942	185
513760-0000	185
513770-0000	185
513800-0000	178
513801-0000	178
513802-0000	178
513810-2440	186
513850-2440	186
513880-0000	336
513881-0000	336
513882-0000	336
513970-0000	336
514000-2440	185
517000-2440	10
518500-2440	187
518501-0000	145
518502-2440	187
518530-2440	187
518530-2942	187
518532-2440	187
518550-1425	188
518550-1450	188
523010-0000	196
523011-0000	196
523012-0000	196
523860-0125	18
523860-0189	18
523860-2815	18
523860-3525	18
523870-0125	18
523870-0189	18
523870-2815	18
523870-3525	18
527000-0000	173
527001-0000	173
527002-0000	173
527003-0000	173
527004-0000	173
527005-0000	173
527006-0000	173
527007-0000	173
527008-0000	173
535750-0000	188
535751-0000	188
535752-0000	235
535800-0000	177
535801-0000	192
536002-0000	189
536003-0000	235
544000-2440	189
544001-2440	189
545000-0120	143
545001-0303	143
545002-2418	143
545006-0500	143
545504-1518	143
547400-0000	151
547600-0125	180
547600-0500	180
547650-0000	181
551100-0000	179
551101-0000	179
551104-0000	179
551106-0285	179
551600-0030	229
551600-0100	229
552500-1000	174
562490-0000	448
562500-2440	448
562800-0250	365
562800-0500	365
562800-1000	365
562800-2000	365
562810-2440	365
562830-0000	365
562850-0012	365
562850-0516	365
569001-0219	141
569001-0319	141
569011-0219	141
569011-0319	141
569251-0319	141
569251-0324	141
569261-0319	141
569261-0324	141
569351-0000	140
570001-0250	138
570001-0500	138
570002-0250	142
570002-0500	142
570010-0250	139
570010-0500	139
570011-0250	138
570012-0250	139
570012-0500	139
570025-0250	138
570025-0500	138
570035-0250	138
570035-0500	138
570037-0500	138
570040-0500	139
570050-0425	142
570050-1025	142
570050-1026	142
570050-1525	142
570050-1526	142
570050-2525	142
570050-2526	142
570051-0425	142
570051-1025	142
570051-1026	142
570051-1525	142
570051-1526	142
570051-2525	142
570051-2526	142
570060-0519	142
570061-0519	142
570071-1025	141
570071-1525	141
570071-2525	141
570071-2526	141
570200-0114	363
570200-0119	363
570200-0124	363
570200-2514	363
570200-2519	363
570200-2524	363
570200-5014	363
570200-5024	363
570205-0114	363
570205-0124	363
570205-2514	363
570205-2524	363
570210-0114	363
570210-0119	363
570210-0124	363
570210-1024	363
570210-2514	363
570210-2519	363
570210-2524	363
570210-5014	363
570210-5024	363
570260-0114	362
570260-0124	362
570260-2514	362
570260-2524	362
570260-5024	362
570265-0114	362
570265-0124	362
570265-2514	362
570265-2524	362
570265-5024	362
570280-0114	362
570280-0124	362
570280-2524	362
570280-5024	362
570300-0114	362
570300-0124	362
570300-2524	362
584190-0000	196
584191-0000	196
584360-0500	197
584361-0500	197
584362-0500	197
584364-0300	197
584400-0000	197
584401-0000	197
584402-0000	197
584403-0000	197
584404-0000	197
584654-0000	197
584780-2440	197
585050-0022	200
585050-0023	200
585150-0023	199
585151-0035	199
586000-0021	200
586000-0022	200
586000-0023	200
586000-0024	200
586000-0025	200
586280-0021	201
586280-0022	201
586280-0023	201
586280-0024	201
586300-0000	198
586300-0001	198
586300-0002	198
586300-0003	198
586300-0004	198
586500-0021	201
586500-0022	201
586500-0023	201
586500-0024	201
586500-0025	201
586500-0026	201
586500-0211	201
586500-0222	201
586500-0233	201
586500-0244	201
586500-0255	201
586500-0266	201
586800-0000	198
586801-0000	198
586802-0000	198
591100-0005	355
591100-0025	355
591100-2605	355
591100-2625	355
591101-0025	355
591101-2605	355

Kontes Art. No.	Page
591101-2625	355
591120-2605	355
591120-2625	355
591132-2605	355
591132-2625	355
591150-0005	356
591150-0025	356
591151-0025	356
591155-0005	356
591155-0025	356
591156-0005	356
591156-0025	356
591170-2606	357
591175-0715	357
591190-2000	357
591191-2000	357
601000-0119	234
601000-0124	234
601000-0129	234
601000-0219	234
601000-0224	234
601000-0229	234
601000-0324	234
601000-0326D	234
601000-0329	234
601000-0424	234
601000-0429	234
601000-0524	234
601000-0526D	234
601000-0529	234
601000-0624	234
601000-0626D	234
601000-0629	234
601000-0645	234
601000-0724	234
601000-0726D	234
601000-0729	234
601000-0734	234
601000-0745	234
601000-0755	234
601000-0824	234
601000-0826D	234
601000-0829	234
601000-0845	234
601000-0855	234
601000-0924	234
601000-0929	234
601000-0934	234
601000-0945	234
601000-0955	234
601000-1024	234
601000-1029	234
601000-1045	234
601000-1055	234
601000-1145	234
601000-1155	234
601000-1245	234
601000-1255	234
601000-1345	234
601000-1355	234
601000-1445	234
601000-1455	234
601000-2224	234
601000-2229	234
601010-0124	235
601010-0129	235
601010-0224	235
601010-0229	235
601010-0324	235
601010-0329	235
601010-0424	235
601010-0429	235
601010-0524	235
601010-0529	235
601010-0624	235
601010-0629	235
601010-0724	235
601010-0729	235
601010-0824	235
601010-0829	235
601010-0924	235
601010-0929	235
601010-1024	235
601010-1029	235
601010-2224	235
601010-2229	235
601010-2524	235
601010-2529	235
601050-0128	236
601050-0136	236
601050-0228	236
601050-0235	236
601050-0236	236
601050-0428	236
601050-0436	236
601050-0536	236
601050-0628	236
601050-0635	236
601050-0636	236
601050-0728	236
601050-0735	236
601050-0736	236
601050-0828	236
601050-0835	236
601050-0836	236
601050-0850	236
601050-0928	236
601050-0935	236
601050-0936	236
601050-0950	236
601050-1028	236
601050-1036	236
601050-1050	236
601050-1065	236
601050-1150	236
601050-1165	236
601050-1250	236
601050-1265	236
601055-0236	236
601055-0436	236
601055-0636	236
601055-0736	236
601055-0836	236
601500-0124	232
601500-0224	232
601500-0324	232
601500-0329	232
601500-0424	232
601500-0429	232
601500-0524	232
601500-0529	232
601500-0624	232
601500-0629	232
601500-0645	232
601500-0824	232
601500-0829	232
601500-0845	232
601500-0929	232
601500-1024	232
601500-1029	232
601500-1045	232
601500-2124	232
605000-0224	237
605000-0624	237
605000-1024	237
605000-1224	237
605000-1424	237
605000-1529	237
605000-1624	237
605000-1824	237
605000-1924	237
605000-2024	237
605000-2524	237
605020-0019	237
605020-0210	237
605020-0224	237
605020-0610	237
605020-0624	237
605020-1010	237
605020-1024	237
605020-1110	237
605020-1124	237
605020-1410	237
605020-1419	237
605020-1424	237
605020-1524	237
605020-1824	237
605020-1924	237
605020-2224	237
605020-2324	237
605020-2624	237
605020-2924	237
605020-4810	237
605020-4824	237
605030-1524	221
606000-0224	238
606000-0624	238
606000-1024	238
606000-1124	238
606000-1129	238
606000-1224	238
606000-1424	238
606000-1524	238
606000-1529	238
606000-1624	238
606000-1724	238
606000-1729	238
606000-1824	238
606000-1924	238
606000-1929	238
606000-2024	238
606000-2124	238
606000-2224	238
606000-2324	238
606000-2329	238
606000-2524	238
606000-2624	238
606000-2729	238
606000-2824	238
606000-2924	238
606000-4824	238
606000-4829	238
606000-6129	238
606020-0219	240
606020-0224	240
606020-0624	240
606020-1024	240
606020-1124	240
606020-1129	240
606020-1224	240
606020-1324	240
606020-1424	240
606020-1529	240
606020-1624	240
606020-1824	240
606020-1924	240
606020-1929	240
606020-2124	240
606020-2224	240
606020-2624	240
606020-2724	240
606020-2924	240
606020-4824	240
606020-4829	240
606200-0124	241
606200-0224	241
606200-0324	241
606200-0424	241
606200-0624	241
606200-0724	241
606200-0824	241
606200-1024	241
606300-0124	241
606300-0224	241
607000-0224	241
607000-0324	241
607000-0329	241
607000-0424	241
607000-0524	241
607000-0624	241
607000-0724	241
607000-0729	241
607000-0824	241
607000-0924	241
607000-1124	241
607000-1129	241
607000-1224	241
607000-1324	241
607000-1529	241
607000-1624	241
607000-1724	241
607000-1729	241
607000-1924	241
607000-1929	241
607000-2024	241
607000-2124	241
607000-2129	241
607000-4724	241
607280-1024	239
607280-1424	239
607280-1824	239
607500-0224	241
607500-0624	241
607500-1024	241
608675-0124	231
608675-0224	231
608675-0229	231
608675-0324	231
608675-0329	231
608675-0624	231
608675-0629	231
608675-0729	231
608675-0829	231
608675-4124	231
608675-4224	231
608675-4324	231
608675-4624	231
608675-4724	231
608675-4824	231
608675-6129	231
608675-6229	231
608675-6329	231
608675-6629	231
608675-6729	231
608675-6829	231
608680-4324	231
608685-4124	231
608685-4224	231
608685-4324	231
608685-4624	231
608685-4724	231
608700-0124	230
608700-0224	230
608700-0229	230
608700-0424	230
608700-0524	230
608700-0624	230
608700-2524	230
608700-2529	230
609400-0224	238
609400-0624	238
609400-1324	238
609400-2124	238
609500-0524	239
610900-0200	221
610910-0125	221
610950-0125	221
611290-0150	220
611290-0350	220
611290-0500	220
611290-0850	220
611290-1500	220
611290-2500	220
611795-2430	220
612000-0500	244
612000-1000	244
612000-1500	244
612000-2000	244
612000-3000	244
612100-0500	244
612100-1000	244
612100-2000	244
612100-3000	244
612250-1200	244
612250-2000	244
612250-2200	244
612250-5000	244
612500-0021	245
612500-0022	245
612500-4524	245
613000-0021	245
613000-4524	245
613750-0000	136
613755-0002	245
613755-0004	245
614000-1000	242
614000-2000	242
614001-0021	242
614002-1000	242
614002-2000	242
614010-1000	242
614010-2000	242
614012-1000	242
614012-2000	242
614100-5005	243
614101-4524	243
614102-5005	243
614103-5000	243
614110-5005	243
614112-5005	243
616500-0025	225
616500-0050	225
616500-0125	225
616500-0250	225
616500-0500	225
616500-1000	225
617000-0124	226
617000-0224	226
617000-0229	226
617000-0424	226
617000-0429	226
617000-0524	226
617000-0624	226
617000-0629	226
617000-0645	226
617000-0724	226
617000-0729	226
617000-0745	226
617000-0824	226
617000-0829	226
617000-0834	226
617000-0845	226
617000-1024	226
617000-1045	226
617000-1124	226
617000-1145	226
617050-0436	173
617310-0250	224
617310-0500	224
617310-1000	224
617310-2000	224
617500-0003	228
617500-0005	228
617600-0025	226
617800-0250	223
617800-0500	223
617800-1000	223
617800-2000	223
621410-0524	255
621410-0525	255
621410-1025	255
621410-1026	255
621505-0100	371
621505-0250	371
621505-0500	371
621505-1000	371
621505-2000	371
621600-0005	246
621600-0010	246
621600-0025	246
621600-0050	246
621600-0100	246
621600-0250	246
621600-0500	246
621600-1000	246
621600-2000	246
621630-0025	246
621630-0050	246
621630-0100	246
623010-0005	253
623010-0010	253
623010-0020	253
623010-0025	253
623010-0030	253
623010-0040	253
623010-0050	253
623010-0100	253
623010-0150	253
623010-0200	253
623010-0250	253
623010-0300	253
623010-0400	253
623010-0500	253
623010-1000	253
623010-2000	253
623020-0100	253
623020-0200	253
623020-0250	253
623020-0300	253
623020-0400	253
623020-0500	253
623020-1000	253
623100-0050	252
623100-0100	252
623100-0200	252
623100-0250	252
623100-0500	252
623100-1000	252
626250-0000	256
629000-0022	268
629000-0023	268
629030-0022	268
629040-0023	269
629040-0024	269
629040-0025	269
629040-0026	269
629050-0000	269
629100-0125	268
629100-0500	268
629101-0004	268
629101-0008	268
629101-0012	268
629110-0500	268
629200-0014	268
629200-0016	268
629200-0018	268
629200-0020	268
629200-0022	268
629200-0024	268
629200-0026	268
629200-0030	268
629200-0032	268
629200-0034	268
629500-0001	269
629500-0002	269
629500-0003	269
629500-0004	269
629500-0005	269
629500-0006	269
629600-0025	271
629600-0035	271
629600-0045	271
629600-0055	271
629600-0065	271
629600-0075	271
629600-0090	271
629600-0100	271
629700-0014	269
629700-0015	269
629700-0018	269
629700-0020	269
629700-0022	269
629700-0024	269
631250-0060	260
633030-0250	260
633030-0500	260
633031-0250	260
633031-0500	260
633060-0250	260
633060-0251	260
633060-0500	260
633060-0501	260
633070-0060	261
633070-0125	261
633070-0250	261
633070-0500	261
633070-1250	261
633070-1500	261
633511-0060	262
633511-0125	262
633511-0250	262
633511-0500	262
633511-1000	262
633530-0060	261
633530-0125	261
633530-0250	261
633530-0500	261
633530-1000	261
633530-2000	261
633531-0060	261
633531-0125	261
633531-0250	261
633531-2000	261
634000-0060	263
634000-0125	263
634000-0250	263
634000-0500	263
634000-1000	263
634030-0060	263
634030-0125	263
634030-0250	263
634030-0500	263
634030-1000	263
634040-0060	263
634040-0250	263
634040-1000	263
634050-0050	265
634050-0060	265
634050-0125	265
634050-0250	265
634050-0500	265
634050-1000	265
634055-0050	265
634055-0060	265
634055-0500	265
634055-1000	265
634055-1060	265
634100-0050	265
634100-0060	265
634100-0125	265
634100-0250	265
634100-0500	265
634100-1000	265
634110-0050	265
634110-0060	265
634110-0125	265
634110-0250	265
634110-0500	265
634110-1000	265
634120-0060	265
634130-0060	265
634500-0010	264
634500-0025	264
634500-0050	264
634500-0060	264
634500-0125	264
634500-0250	264
634500-0500	264
634500-1005	264
634500-1125	264
634500-2926	264
634500-2942	264
634510-0060	265
634510-0125	265
634510-0250	265
634510-0500	265
634510-1000	265
634530-0060	264
634530-0125	264
634530-0250	264
634530-0500	264
634530-1000	264
634530-2000	264
634540-0060	264
634540-0125	264
634540-0250	264
634540-0500	264
634540-1000	264
634540-2000	264
634580-0060	266
634580-0125	266
634580-0250	266
634580-0500	266
634620-0060	267
634620-0125	267
634620-0250	267
634620-0500	267
634621-0060	267
634621-0250	267
634621-0500	267
634622-0060	267
634622-0125	267

Kontes Art. No.	Page
634622-0250	267
634622-0500	267
634623-0000	267
634630-0125	267
634630-0500	267
634632-0125	267
634632-0500	267
636000-0030	272
636000-0060	272
636000-0125	272
636000-0250	272
636000-0500	272
636000-1000	272
636000-2000	272
636000-3000	272
636000-6000	272
636010-0030	272
636010-0060	272
636010-0125	272
636010-0250	272
636010-0500	272
636010-1000	272
636010-2000	272
636010-3000	272
636010-6000	272
636030-0060	272
636030-0125	272
636030-0250	272
636030-0500	272
636030-1000	272
636030-2000	272
636030-4000	272
636030-6000	272
636031-0060	272
636031-0125	272
636031-0250	272
636031-0500	272
636031-1000	272
636031-2000	272
636031-4000	272
636031-6000	272
636040-0500	273
636040-1000	273
636040-2000	273
636041-0500	273
636041-1000	273
636041-2000	273
636100-1000	272
636100-2000	272
636200-0500	273
636200-1000	273
636200-2000	273
636200-4000	273
636200-6000	273
636280-0500	274
636280-1000	274
636280-2000	274
636281-0500	274
636281-1000	274
636281-2000	274
652210-0000	464
652220-0000	464
652230-0000	464
652240-0000	278
652250-0000	278
652260-2440	278
652261-2440	278
652262-2440	278
652265-0000	278
652266-0000	278
652267-0000	278
652650-2440	278
652651-2440	278
653100-0022	281
653150-0125	281
653150-0250	281
653150-0500	281
653151-0125	281
653151-0250	281
653151-0500	281
653200-2000	277
653210-2000	277
655800-0000	474
655910-0000	194
655911-0000	194
655912-0000	194
655952-0000	194
655960-0000	194
655961-0000	194
655962-0000	194
657002-0125	276
657002-0250	276
657002-0500	276
657250-1223	276
657250-1225	276
657250-2523	276
657250-2525	276
657250-5023	276
657250-5025	276
657251-1223	276
657251-1225	276
657251-5023	276
657251-5025	276
657750-1223	277
657750-1225	277
657750-2523	277
657750-2525	277
657750-5023	277
657750-5025	277
657751-1223	277
657751-1225	277
657751-2523	277
657751-2525	277
657751-5023	277
657751-5025	277
657752-0125	277
657752-0250	277
657752-0500	277
661250-0360	289
661250-0725	289
661250-1030	289
661250-1230	289
661250-1938	289
661250-2440	289
661250-2942	289
661250-3445	289
661250-4050	289
661250-4550	289
661250-5050	289
661250-5550	289
661250-6050	289
661250-7160	289
661250-8650	289
661300-2440	289
661500-0360	289
661500-0725	289
661500-1030	289
661500-1230	289
661500-1435	289
661500-1938	289
661500-2440	289
661500-2942	289
661500-3445	289
661500-4050	289
661500-4550	289
661500-5050	289
661500-5550	289
661500-6050	289
661500-7160	289
661500-8650	289
662750-0001	375
662750-0002	375
662750-0012	375
662750-0034	375
662750-0038	375
662750-0114	375
663500-0126	290
663500-0144	290
663500-0226	290
663500-0244	290
663500-0426	290
663500-0444	290
664500-1030	289
664500-1230	289
664500-1435	289
664500-2440	289
664500-4550	289
665801-1420	291
665801-1922	291
665801-2440	291
665802-1420	291
665802-1922	291
665802-2440	291
669250-1420	290
669500-1420	290
671250-0122	288
671250-0125	288
671250-0187	288
671250-0189	288
671250-0275	288
671250-2812	288
671250-2815	288
671250-3520	288
671250-3525	288
671250-5030	288
671250-6540	288
671250-7550	288
671300-0122	288
671300-0125	288
671300-0187	288
671300-0275	288
671300-2815	288
671300-3525	288
671300-5030	288
671300-6540	288
671300-7550	288
671500-0122	288
671500-0125	288
671500-0187	288
671500-0189	288
671500-0275	288
671500-2812	288
671500-2815	288
671500-3520	288
671500-3525	288
671500-5030	288
671500-6540	288
671500-7550	288
671750-0005	290
671750-0007	290
671750-0009	290
671750-0012	290
671750-0015	290
671750-0020	290
671750-0025	290
671750-0030	290
671750-0040	290
671750-0050	290
671750-0075	290
671750-0100	290
671790-0005	291
671790-0008	291
671790-0011	291
671790-0014	291
671790-0017	291
671790-0020	291
671790-0023	291
671790-0026	291
671791-0005	291
671791-0008	291
671791-0011	291
671791-0014	291
671791-0017	291
671791-0020	291
671791-0023	291
671791-0026	291
675000-0012	137
675000-0018	137
675000-0028	137
675000-0035	137
675000-0040	137
675000-0050	137
675000-0065	137
675000-0075	137
675000-0102	137
675000-1221	137
675000-1821	137
675300-0010	136
675300-0014	136
675300-0019	136
675300-0024	136
675300-0029	136
675300-0034	136
675300-0040	136
675300-0045	136
675310-0013	137
675310-0019	137
675310-0029	137
675310-0035	137
675320-0014	137
675320-0019	137
675320-0024	137
675320-0029	137
675400-1420	137
675400-2440	137
675500-1420	136
675500-1922	136
675500-2440	136
675500-2942	136
675500-3445	136
675600-0005	135
675600-0008	135
675600-0012	135
675650-0005	135
675650-0008	135
675650-0012	135
675660-0000	135
675675-0028	134
675700-0025	134
675700-0057	134
675700-0089	134
675710-0025	134
675710-0057	134
675710-0089	134
675725-0038	134
675725-0064	134
675750-0000	135
675775-0000	135
675800-0060	243
676001-1018	375
676001-1030	375
676001-1420	375
676001-1922	375
676001-1938	375
676001-2425	375
676001-2440	375
676001-2926	375
676001-2942	375
676001-3445	375
676001-4035	375
676001-4550	375
676001-5550	375
676001-7160	375
676005-1030	375
676005-1420	375
676005-1922	375
676005-2440	375
676005-2942	375
676005-4550	375
676100-1420	375
676100-1922	375
676100-2440	375
676100-2942	375
676100-3445	375
676100-4550	375
691550-0000	474
720140-3000	171
720200-0001	285
720200-0002	285
720205-0001	285
720210-0001	285
720500-0101	284
720600-0115	284
721000-0050	283
721000-0100	283
721000-0250	283
721000-0500	283
721000-1000	283
721000-1200	283
721000-2000	283
721000-3000	283
721000-5000	283
722330-1000	283
722330-2000	283
722340-5000	283
726123-4051	284
726170-4051	284
726325-0301	284
729000-1022	283
729520-0448	285
729550-0006	285
730500-0000	285
730500-0230	285
730900-0000	285
731000-0503	143
736400-1413	212
736500-3515	450
736500-3530	450
736510-4506	450
737250-0000	280
737251-0000	280
737252-0000	280
737260-2815	280
737261-2815	280
737550-0000	279
737551-0000	279
737552-0000	279
737560-0000	279
737561-0000	279
737575-2815	280
737600-0000	279
737601-0000	279
737610-0000	279
737611-0000	279
742000-1024	229
742000-3024	229
742000-5024	229
742000-5029	229
742000-8024	229
742000-8029	229
743200-0001	292
743202-0000	292
743204-0000	292
743206-0000	292
744250-0022	428
744250-0023	428
746000-0000	306
746000-0005	306
746001-0001	298
746001-0002	306
746010-0000	306
746020-0000	306
746030-0000	13
746030-0510	13
746035-0510	15
746035-0814	15
746040-0000	308
746050-0000	306
746060-0000	306
746065-0000	308
746070-0000	309
746080-0000	306
746090-0000	306
746095-0000	448
746100-0003	306
746100-0005	306
746105-0003	313
746105-0005	313
746105-0010	313
746110-0005	306
746115-0010	310
746120-0005	310
746120-0010	310
746120-0025	310
746122-0010	314
746122-0025	314
746125-0000	312
746125-0001	312
746130-0000	306
746140-1013	316
746140-1020	306
746150-0000	308
746200-0000	307
746200-0005	307
746210-0000	307
746210-0005	307
746220-0000	307
746220-0005	307
746320-0000	308
746330-0044	314
746331-0044	314
746340-0005	314
746345-0005	314
747000-0000	317
747000-0005	317
747001-0002	317
747010-0000	317
747010-0005	317
747011-0002	317
747020-0000	316
747020-0005	316
747100-0000	316
747110-0000	320
747120-0000	316
747125-1314	3
747125-1319	3
747125-1324	3
747125-2014	3
747125-2019	3
747125-2024	3
747128-2014	3
747128-2019	3
747128-2024	3
747130-1314	3
747130-1319	3
747130-1324	3
747130-2014	3
747130-2019	3
747130-2024	3
747133-2014	3
747133-2019	3
747133-2024	3
747140-0000	317
747160-0000	317
747185-0013	18
747185-0020	18
747190-0010	317
747205-0000	3
747205-0808	3
747205-0813	3
747205-1313	3
747205-1315	3
747205-1320	3
747205-1520	3
747205-1820	3
747205-2020	3
747205-2022	3
747205-2024	3
747250-0000	317
747255-0000	316
747300-0050	317
747300-0100	316
747330-0002	451
747330-0003	451
747331-0001	451
747331-0631	451
747332-0001	451
747332-0002	451
747350-0000	317
747355-0000	316
747360-0000	321
747370-0000	316
747400-2313	317
747400-2320	317
747405-0013	317
747405-0020	317
747500-0010	316
747510-0520	322
747510-1020	322
747510-1520	322
747510-2520	322
747520-1020	322
747520-2520	322
747530-0520	225
747530-1020	225
747530-1520	225
747530-2520	225
747540-0520	322
747540-1020	322
747540-1520	322
747540-2520	322
747550-1020	322
747550-2520	322
747575-0020	323
747580-0015	323
747581-0015	323
747582-0013	323
747583-0000	323
747585-0013	323
747585-0020	323
747600-0000	317
747600-0013	272
747600-0020	272
747620-0000	317
747630-0000	291
747650-0006	323
748000-0000	299
748000-0005	299
748001-0000	298
748001-0003	298
748001-1000	298
748002-0000	298
748003-0000	298
748003-1000	298
748004-0000	299
748004-1000	299
748005-0000	298
748005-1000	298
748005-1001	298
748005-1651	298
748006-0100	298
748006-1100	298
748007-1060	298
748008-0005	298
748008-1005	298
748009-0005	298
748009-1005	298
748010-0025	298
748010-1025	297
748012-0000	298
748012-1000	297
748013-0000	298
748013-1000	298
748014-0000	375
748014-1000	375
748016-0017	305
748016-1017	305
748017-0020	297
748019-0001	410
748020-1000	301
748021-1030	305
748025-1034	301
748030-0043	301
748033-0008	301
748035-0023	284
748100-0000	298
748100-0005	298
748110-0000	299
748110-0005	299
749060-0000	379
749060-0003	379
749110-0021	487
749110-0022	487
749110-0024	357
749112-0000	487
749113-0000	357
749210-0012	487
749210-0016	487
749400-0025	225
749510-0590	423
749510-1500	423
749510-1501	423
749510-1590	423
749515-0000	423
749515-1500	423
749515-5000	423
749516-0500	423
749520-0000	423
749520-0090	423
749520-0500	423
749520-0590	423
749521-0500	423
749521-0590	423
749521-1500	423
749521-1590	423
749530-1500	423
749530-5000	423
749540-0000	423
749541-0000	423
749560-0500	423
749560-1500	423
751280-0010	191

Kontes Art. No.	Page
751280-0020	191
751350-0005	192
751350-0010	192
751530-0010	191
751530-0020	191
758200-5374	332
758202-0032	332
758202-0114	332
758202-0212	332
758210-0323	333
758240-0003	333
758240-0008	333
758240-0010	333
758240-0013	333
758240-0014	333
758240-0015	333
758240-0019	333
758240-0022	333
758240-0108	333
758240-0109	333
758240-0110	333
758240-0111	333
758240-0116	333
758240-0124	333
758240-0133	333
758240-0213	333
758240-0214	333
758240-0216	333
758240-0222	333
758240-5105	333
758250-0349	334
758252-0004	334
758252-0006	334
758252-0008	334
758252-0009	334
758252-0010	334
758252-0011	334
758252-0012	334
758252-0013	334
758252-0014	334
758252-0015	334
758252-0034	334
758252-0105	334
758252-0107	334
758252-0108	334
758252-0109	334
758252-0110	334
758252-0111	334
758252-0112	334
758252-0114	334
758252-0116	334
758252-0118	334
758252-0120	334
758252-0140	334
758252-0207	334
758252-0208	334
758252-0212	334
758252-0214	334
758252-0223	334
758252-0226	334
758252-0229	334
758252-1025	334
758252-5105	334
758260-0008	333
758260-0010	333
758260-0027	333
758260-0116	333
758260-0118	333
758260-0216	333
758260-0222	333
758290-0349	332
758292-0011	332
758292-0012	332
758292-0013	332
758292-0017	332
758292-0109	332
758292-0110	332
758292-0111	332
758292-0112	332
758292-0116	332
758292-0120	332
758292-0122	332
758292-0124	332
758292-0223	332
758292-0226	332
758292-0229	332
758292-1025	332
759300-0005	169
759300-0010	169
759300-0015	169
759300-0020	169
759300-0025	169
759300-0030	169
759300-0040	169
759300-0050	169
759300-0060	169
759300-0100	169
759301-0005	169
759301-0010	169
759301-0015	169
759301-0020	169
759301-0025	169
759301-0030	169
759301-0040	169
759301-0050	169
759301-0060	169
759301-0100	169
761000-0200	346
763620-0200	348
763620-1000	348
763620-2500	348
764100-1001	298
764500-0000	429
764500-0001	429
764500-0002	429
764500-0005	429
764500-0010	429
764500-0020	429
764500-0025	429
764500-0050	429
764500-0100	429
764520-0000	429
767100-0021	352
767100-0022	352
767101-0021	352
767101-0022	352
767102-0000	352
767103-0000	352
767104-0000	352
767150-0021	352
767150-0022	352
767151-0021	352
767151-0022	352
767160-0000	353
767170-0000	353
767171-0000	353
767172-0000	353
767200-0021	353
767210-0015	354
767210-0035	354
767210-0038	354
767210-0048	354
767210-0100	354
767210-0120	354
767250-0075	354
767250-0150	354
767250-0350	354
767255-0075	354
767255-0150	354
767255-0350	354
767300-0015	354
767300-0035	354
767300-0038	354
767300-0048	354
767300-0100	354
767300-0120	354
767350-0075	354
767350-0150	354
767350-0350	354
767355-0075	354
767355-0150	354
767355-0350	354
773900-0000	14
774161-0008	371
774161-0013	180
774161-0015	76
774161-0018	76
774161-0020	76
774161-0024	76
774161-0924	76
774200-0022	406
774200-0023	406
774240-0014	405
774240-0019	405
774240-0024	405
774240-0029	405
774250-0005	406
774250-0007	406
774250-0011	406
774250-0013	406
774250-0014	406
774250-0016	406
774260-0000	406
774261-0005	406
774261-0006	406
774261-0008	406
774261-0010	406
774261-0014	406
774261-0019	406
774261-0024	406
781001-2440	382
781001-2942	382
781001-3445	382
781001-4550	382
781001-5550	382
781010-2440	382
781010-2942	382
781019-2942	384
781019-4550	384
781030-0119	380
781030-0124	380
781030-0129	380
781030-0134	380
781030-0245	380
781030-0255	380
781050-2440	382
781050-2942	382
781050-3445	382
781050-4550	382
781501-2440	383
781501-2942	383
781501-4550	383
782000-0050	384
782000-0075	384
782000-0120	384
782001-2440	382
782001-2942	382
782002-0000	382
782030-0124	382
782030-0129	382
784000-2942	384
784000-4550	384
784010-0003	384
784010-0004	384
784010-0005	384
784010-0006	384
784010-0007	384
784035-0004	384
784035-0005	384
784035-0006	384
784035-0007	384
785030-0119	381
785030-0124	381
785030-0129	381
785030-0145	381
785031-0119	381
785031-0124	381
785031-0129	381
785031-0145	381
785040-0124	381
785050-0624	381
786200-1045	384
786200-1060	384
786500-0261	383
786500-0262	383
786500-0263	383
786500-0264	383
786520-0260	383
786520-0261	383
786520-0262	383
787150-0621	383
787150-0622	383
787150-0623	383
787150-0624	383
787150-0625	383
787150-0626	383
787150-1622	381
787920-0115	386
788000-0020	376
788000-0021	376
788000-0022	376
788010-0021	376
788020-0020	376
788020-0021	376
788020-0022	376
788030-0000	376
788250-0000	377
788500-0021	376
788500-0022	376
788940-0021	380
789030-0019	383
789030-0020	383
789030-0021	383
789030-0022	383
789030-0023	383
789030-0024	383
789030-0025	383
790000-0027	385
790010-0000	385
790015-0000	385
790040-0000	386
790950-0401	387
790950-0402	387
790950-0701	387
790950-0702	387
790950-1001	387
790950-1002	387
791120-0000	378
791130-0021	378
791130-0022	378
791130-0023	378
791130-0024	378
791130-0025	378
791130-0026	378
791130-0027	378
791130-0028	378
791130-0029	378
791140-0020	379
791145-0021	379
791150-0020	379
791150-0021	379
791150-0022	379
791150-0023	379
791150-0024	379
791150-0028	379
791160-0001	378
791160-0002	378
791160-0003	378
791160-0004	378
791160-0005	378
791160-0006	378
791160-0007	378
791160-0008	378
791160-0009	378
791160-0010	378
791160-0012	378
791160-0013	378
791160-0018	378
791160-0019	378
791160-0020	378
791170-0020	377
791170-0021	377
791170-0022	377
791180-0021	377
791180-0022	377
791190-0100	379
791190-0114	379
791200-0020	379
791200-0021	379
791200-0022	379
792000-0012	379
792000-0018	379
801000-0001	389
801000-0002	389
801000-0004	389
801000-0006	389
801000-0008	389
801001-0001	389
801001-0002	389
801001-0004	389
801001-0006	389
801001-0008	389
801020-0002	314
801021-0002	314
802000-0002	389
802000-0004	389
802000-0006	389
802001-0002	389
802001-0004	389
802001-0006	389
802500-0004	389
802501-0004	389
803000-0002	389
803000-0004	389
803001-0002	389
803001-0004	389
804000-0002	388
804001-0002	388
807000-0144	388
807001-0144	388
809000-0021	390
809000-0022	390
809000-0023	390
821000-0002	392
821000-0004	392
821000-0006	392
821000-0008	392
821000-0010	392
821001-0002	392
821001-0004	392
821001-0006	392
821001-0008	392
821001-0010	392
821110-0002	391
821110-0004	391
821111-0002	262
821111-0004	262
821250-0002	393
822000-0002	392
822000-0004	392
822000-0006	392
822001-0002	392
822001-0004	392
822001-0006	392
822500-0002	392
822501-0002	392
823000-0002	392
823000-0004	392
823001-0002	392
823001-0004	392
824000-0002	391
824000-0004	391
824001-0002	391
824001-0004	391
826300-0020	399
826301-0020	399
826302-0020	399
826310-0020	399
826312-0020	399
826400-0006	402
826400-0012	402
826410-0002	401
826410-0004	401
826411-0002	265
826411-0004	103
826412-0002	401
826412-0004	401
826420-0002	401
826420-0004	401
826422-0002	401
826422-0004	401
826422-0008	400
826430-0008	399
826430-0012	399
826431-0008	399
826431-0012	399
826435-0012	402
826435-0020	402
826450-0004	397
826450-0008	397
826450-0012	397
826451-0004	397
826451-0008	397
826451-0012	397
826460-0004	397
826460-0008	397
826460-0012	397
826500-0004	399
826500-0008	399
826500-0012	399
826501-0004	398
826501-0008	398
826501-0012	398
826501-4008	450
826502-0002	400
826502-0004	400
826502-0008	400
826502-0012	400
826505-0004	398
826505-0008	398
826505-0012	398
826506-0004	398
826506-0008	398
826506-0012	398
826510-0004	399
826510-0008	399
826510-0012	399
826512-0004	397
826512-0008	397
826512-0012	397
826515-0004	398
826515-0008	398
826515-0012	398
826530-0004	398
826530-0008	398
826530-0012	398
826600-0002	400
826600-0004	400
826600-0008	400
826600-0012	400
826601-0002	400
826601-0004	400
826601-0008	400
826601-0012	400
826601-4004	450
826610-0002	400
826610-0004	400
826610-0008	400
826610-0012	400
826620-0004	400
826620-0008	400
826622-0004	400
826700-0002	401
826700-0004	401
826702-0002	401
826702-0004	401
826800-0004	401
826800-0008	401
826802-0004	401
826802-0008	401
831000-0002	390
831000-0004	390
831200-0002	390
832000-0002	390
832000-0004	390
833000-0002	390
833000-0004	390
833500-0002	391
841000-0002	394
841000-0004	394
841000-0006	394
841000-0008	394
841000-0010	394
841000-0015	394
841100-0002	394
841100-0004	394
841100-0006	394
841250-0002	393
841500-0002	395
841500-0004	395
843000-0002	395
843000-0004	395
843000-0006	395
843000-0008	395
843000-0010	395
843100-0002	395
843100-0004	395
843250-0002	393
843800-0002	394
843800-0004	394
843800-0006	394
843800-0008	394
843800-0010	394
843900-0002	394
843900-0004	394
843900-0006	394
845000-0002	396
845000-0004	396
845000-0006	396
845100-0002	396
845100-0004	396
845100-0006	396
845850-0002	393
846000-0002	395
846000-0004	395
847000-0002	396
847000-0004	396
847000-0006	396
847000-0008	396
847000-0010	396
847000-0015	396
848000-0002	396
848000-0004	396
848000-0006	396
848000-0008	396
848000-0010	396
848000-0015	396
850100-0008	404
850100-0009	404
850100-0013	404
850100-0016	404
850100-0019	404
850100-0022	404
850100-0027	404
850100-0032	404
850100-0038	404
850400-1420	403
850400-1922	403
850400-2425	403
850400-2926	403
850400-3428	403
850405-1420	403
850405-2440	403
850405-2942	403
850500-1018	404
850500-1420	404
850500-1922	404
850500-2425	404
850500-2926	404
850500-3428	404
850505-1410	404
850540-0014	405
850540-0019	405
850540-0024	405
850540-0029	405
850540-0034	405
850550-1018	107
850800-2440	403
850800-2942	403
851000-1030	404
851000-1435	404
851000-1938	404
851000-2440	404
851000-2942	404
851000-3445	404
851000-4550	404
851800-1420	404
851800-2440	404
851810-0015	403
851900-1420	403
852000-2440	403
852050-0070	406
855500-2050	407
855500-3075	407
855501-2050	407
855501-3075	407
855502-2050	407
855502-3075	407
855503-2050	407
855503-3075	407
855601-0000	408
855602-0000	408

Kontes Art. No.	Page
855610-0000	408
855611-0000	408
855702-0000	408
855710-0000	408
855711-0000	408
863000-0000	409
864000-0000	409
864200-0000	409
864210-0000	409
864300-0018	409
864300-0020	409
864300-0024	409
864300-0036	409
864310-0020	409
864310-0024	409
864310-0036	409
864320-0000	409
864321-0000	409
868270-1406	218
868280-1801	410
868280-2001	410
868280-2201	410
868300-0001	410
868300-0002	410
868300-0005	410
868300-0010	410
868300-0020	410
869770-0014	455
869775-0738	143
869780-0014	455
869790-0012	455
869790-0014	455
869800-1305	456
869801-1006	456
870505-0051	412
870505-0110	412
870505-0151	412
870505-0405	412
870505-1260	412
870605-1260	412
870790-0311	412
870790-0315	412
870790-0325	412
871000-0125	411
871000-0136	411
871000-0225	411
871000-0315	411
871000-0325	411
871000-0336	411
881300-0100	457
881300-0600	457
881312-0000	458
881338-0000	408
881342-0012	459
881350-0018	459
881350-0332	459
881360-0175	458
881360-0515	458
881360-2175	458
881365-0010	458
881365-0025	458
881455-0000	83
881455-0488	83
881455-0489	83
881455-0491	83
881455-0492	83
881455-0493	83
881455-0495	83
881455-0496	83
881455-0499	83
881455-0501	83
881455-0505	83
881455-0506	83
881457-0000	83
881500-0021	168
881700-0000	218
881750-0214	219
881750-0219	219
881750-0414	219
881750-0419	219
881800-0414	219
881900-0250	218
881901-0250	218
881902-0000	218
882300-0010	219
882310-0000	219
882311-0000	219
882320-0000	219
882360-0010	219
882910-0100	80
882910-0250	80
882910-0500	80
882910-1000	80
882910-1500	80
882910-3000	80
882910-3600	80
882910-6000	80
882910-8000	80
882911-0100	80
882911-0250	80
882911-0500	80
882911-1000	80
882911-1500	80
882911-3000	80
882911-3600	80
882911-6000	80
882911-8000	80
882912-0100	80
882912-0500	80
882912-1000	80
882912-1500	80
882912-3000	80
882912-6000	80
882914-0100	80
882914-0500	80
882914-1500	80
882914-3000	80
882914-6000	80
882916-0100	80
882916-1000	80
882916-1500	80
882916-3000	80
883350-0009	348
883350-0575	348
884900-0000	421
885000-0002	421
885000-0007	421
885000-0015	421
885000-0040	421
885001-0002	421
885001-0007	421
885001-0015	421
885001-0040	421
885002-0002	421
885002-0007	421
885002-0015	421
885002-0040	421
885300-0000	415
885300-0001	415
885300-0002	415
885300-0007	415
885300-0015	415
885300-0040	415
885300-0100	415
885301-0000	415
885301-0001	415
885301-0002	415
885301-0007	415
885301-0015	415
885301-0040	415
885301-0100	415
885302-0000	415
885302-0001	415
885302-0002	415
885302-0007	415
885302-0015	415
885302-0040	415
885302-0100	415
885303-0000	415
885303-0001	415
885303-0002	415
885303-0007	415
885303-0015	415
885303-0040	415
885303-0100	415
885350-0021	417
885350-0022	417
885350-0023	417
885351-0021	417
885351-0022	417
885351-0023	417
885352-0021	417
885352-0022	417
885352-0023	417
885380-0021	418
885380-0022	418
885380-0023	418
885381-0021	418
885381-0022	418
885381-0023	418
885450-0020	416
885450-0021	416
885450-0022	416
885450-0023	416
885450-0024	416
885450-0025	416
885451-0020	416
885451-0021	416
885451-0022	416
885451-0023	416
885451-0024	416
885451-0025	416
885452-0020	416
885452-0021	416
885452-0022	416
885452-0023	416
885452-0024	416
885452-0025	416
885460-0020	416
885460-0021	416
885460-0022	416
885460-0023	416
885460-0024	416
885460-0025	416
885462-0020	416
885462-0021	416
885462-0022	416
885462-0023	416
885462-0024	416
885462-0025	416
885470-0000	418
885480-0020	417
885480-0021	417
885480-0022	417
885480-0023	417
885480-0024	417
885480-0025	417
885481-0020	417
885481-0021	417
885481-0022	417
885481-0023	417
885481-0024	417
885481-0025	417
885482-0020	417
885482-0021	417
885482-0022	417
885482-0023	417
885482-0024	417
885482-0025	417
885490-0017	418
885490-0019	418
885490-0020	418
885490-0021	418
885491-0017	418
885491-0020	418
885492-0017	418
885492-0019	418
885492-0020	418
885492-0021	418
885500-0019	419
885500-0021	419
885500-0022	419
885500-0023	419
885500-0024	419
885501-0019	419
885501-0021	419
885501-0022	419
885501-0023	419
885501-0024	419
885502-0019	419
885502-0021	419
885502-0022	419
885502-0023	419
885502-0024	419
885510-0020	420
885510-0021	420
885510-0022	420
885510-0023	420
885511-0020	420
885511-0021	420
885511-0022	420
885511-0023	420
885512-0020	420
885512-0021	420
885512-0022	420
885512-0023	420
885520-0100	420
885521-0100	420
885752-0018	419
885752-0019	419
885752-0020	419
885752-0021	419
885752-0022	419
885752-0023	419
885752-0024	419
886000-0018	419
886000-0019	419
886000-0020	419
886000-0021	419
886000-0022	419
886000-0023	419
886000-0024	419
886001-0018	419
886001-0019	419
886001-0020	419
886001-0021	419
886001-0022	419
886001-0023	419
886001-0024	419
891000-1420	448
892750-0010	427
893500-0021	287
893500-0022	287
893750-0021	287
893750-0022	287
896600-0000	337
896650-0000	336
896670-0000	337
896820-0000	497
896860-2860	450
896860-4010	450
896860-4015	450
896860-8910	450
896900-0021	451
897030-0005	331
897033-0003	331
897033-0005	331
897047-0001	329
897048-0001	329
897049-0005	329
897050-0021	330
897050-0022	330
897080-0005	330
897085-0007	330
897085-0009	330
897093-0001	329
897095-0001	329
897095-0011	329
897095-0012	329
897095-0021	329
897095-0061	329
897095-0071	329
897095-0081	329
897095-1001	329
897095-1011	329
897095-1021	329
897095-1071	329
897095-1081	329
897096-0003	329
897096-0005	329
897097-0001	329
897110-0007	327
897110-0008	327
897120-0007	327
897120-0008	327
897130-0007	327
897130-0008	327
897140-0007	327
897140-0008	327
897150-0007	327
897150-0008	327
897193-0000	327
897193-0008	327
897193-0050	327
897193-7100	327
897193-8050	327
897193-8100	327
897200-0000	325
897200-0008	325
897200-0009	325
897205-0000	325
897205-0008	325
897205-0009	325
897220-0000	325
897220-0008	325
897220-0009	325
897225-0000	325
897225-0008	325
897225-0009	325
897230-0000	325
897230-0008	325
897230-0009	325
897235-0000	325
897235-0008	325
897235-0009	325
897240-0000	325
897240-0008	325
897240-0009	325
897241-0000	325
897241-0008	325
897241-0009	325
897245-3000	325
897245-3008	325
897250-3000	325
897250-3008	325
897320-0000	326
897320-0008	326
897325-0000	326
897325-0008	326
897330-0000	326
897330-0008	326
897335-0000	326
897335-0008	326
897435-0000	328
897435-0008	328
897635-0800	328
897735-1300	328
897750-0235	328
897750-0240	328
897750-0245	328
897800-0000	326
897800-0008	326
897805-0000	326
897805-0008	326
897820-0000	326
897820-0008	326
897825-0000	326
897825-0008	326
897830-0000	326
897830-0008	326
897835-0000	326
897835-0008	326
897840-0000	326
897840-0008	326
897900-0005	453
897900-0010	453
897900-0025	453
897900-0050	453
897900-0100	453
898000-0005	453
898000-0010	453
898000-0025	453
898250-0005	452
898250-0025	452
898500-0005	452
898500-0010	452
898500-0025	452
899250-0000	454
899400-0000	454
922504-0000	472
923000-0021	472
923000-0022	472
923000-0023	472
923000-0024	472
923001-0021	472
923001-0022	472
923001-0023	472
923001-0024	472
923002-0021	472
923002-0022	472
923002-0023	472
923002-0024	472
923250-0000	472
923510-0115	473
923512-0000	473
923513-0000	473
923530-0115	473
923535-0115	473
923537-0000	473
923610-3024	377
923612-3002	377
923910-0115	481
923920-0115	481
924762-0000	480
924770-0000	480
924781-0000	480
924785-0000	480
925700-0250	481
925700-0500	481
926035-0021	483
926035-0022	483
926035-0023	483
926035-0025	483
926035-0026	483
926050-0021	483
926050-0022	483
926050-0023	483
926055-0500	483
926060-0015	482
926061-0015	482
926062-0015	482
926250-0021	482
926250-0022	482
926250-0023	482
926250-0024	482
926250-0025	482
926250-0026	482
926251-0021	482
926251-0022	482
926251-0023	482
926251-0024	482
926251-0025	482
926251-0026	482
926252-0021	453
926252-0022	453
926252-0023	453
926252-0024	453
926252-0025	453
926252-0026	453
926252-0027	453
926300-0021	482
926300-0022	482
926300-0023	482
926300-0024	482
926300-0025	482
926300-0026	482
926301-0021	482
926301-0022	482
926301-0023	482
926301-0024	482
926301-0025	482
926301-0026	482
926306-0021	483
926306-0022	483
926306-0023	483
926306-0025	483
926306-0026	483
926400-0500	483
926400-1000	483
926401-0500	483
926402-0500	483
926402-1000	483
926910-0250	364
926910-0500	364
926910-1000	364
931000-0000	472
952000-0923	258
952000-0925	258
952000-0944	258
952000-1023	258
952000-1025	258
952000-1044	258
952000-2023	258
952000-2025	258
952000-2044	258
952000-3023	258
952000-3025	258
952000-3044	258
952000-4023	258
952000-4025	258
952000-4044	258
952000-6023	258
952000-6025	258
952000-6044	258
952000-8023	258
952000-8025	258
952000-8044	258
952050-0009	259
952050-0012	259
952050-0020	259
952050-0025	259
952050-0040	259
952050-0050	259
953101-0000	208
953701-0000	209
953701-0125	209
953701-0325	209
953702-0001	209
953703-0000	209
953705-0000	209
953710-0000	228
953711-0000	209
953712-0000	209
953715-0501	406
953715-0801	406
953726-0001	209
953730-0000	209
953750-5347	213
953751-0000	210
953752-0001	210
953752-0090	215
953752-5047	213
953753-0000	202
953753-0090	202
953755-0000	205
953755-0090	205
953760-0000	228
953760-0122	228
953760-1002	228
953760-2000	228
953760-2002	228
953760-4000	228
953760-4002	228
953761-0000	210
953763-0000	331
953763-0801	406
953770-0090	215
953771-0000	210
953772-0090	215
953776-0000	210
953777-0001	210
953780-0000	210
953781-0000	210
953781-0090	215
953800-5347	213
953801-0001	210
953801-0090	215
953801-5047	213
953805-0000	205
953805-0090	205
953810-0000	210
953810-0090	215
953811-0000	202
953811-4701	213
953820-1047	214
953820-4047	214
953825-0000	211
953825-0090	216
953826-0000	211
953826-0090	216
953827-0000	211
953828-0000	211

Kontes Art. No.	Page
953829-0000	211
953830-0000	202
953835-0000	211
953835-0090	216
953840-1090	216
953840-2090	216
953840-4090	216
953841-0090	216
953845-0000	211
953845-0090	216
953852-0001	211
953855-1047	211
953855-1090	217
953870-1000	205
953870-2000	205
953871-1000	205
953871-2000	205
953872-0000	205
953882-0000	116
953882-1000	124
953882-2000	124
953890-0000	124
953891-0000	124
953900-0010	46
953901-0252	45
953901-0502	45
953901-1002	45
953901-1003	45
953901-2002	45
953901-2003	45
953901-5002	45
953902-0252	45
953902-0502	45
953902-1002	45
953902-1003	45
953902-2002	45
953902-2003	45
953902-5002	45
953903-0000	121
953903-0002	121
953903-0003	121
953903-0004	121
953903-0005	121
953903-0042	121
953903-6200	121
953903-6201	121
953905-0000	46
953906-0001	122
953906-0002	122
953906-0047	122
953906-0090	122
953906-0092	122
953906-6301	122
953906-6347	122
953906-6390	122
953907-0000	46
953908-0000	46
953909-0000	46
953910-1003	117
953910-2002	117
953910-2003	117
953910-5002	117
953913-0000	122
953913-0001	130
953913-5000	116
953913-5001	116
953913-5005	116
953914-0001	119
953914-0002	119
953914-0006	119
953914-0091	122
953914-0092	122
953915-0001	121
953915-0047	121
953915-1047	113
953915-2047	113
953916-0000	123
953916-0001	123
953916-0002	123
953916-1002	123
953916-2002	123
953916-2700	123
953916-2701	123
953916-3002	123
953916-6210	123
953916-6220	123
953917-0000	123
953917-0001	123
953918-0014	129
953918-0018	129
953918-2306	129
953918-2313	129
953918-2319	129
953919-0014	129
953921-6216	129
953922-0252	45
953922-0502	45
953922-1002	45
953922-1003	45
953922-2002	45
953922-2003	45
953922-5002	45
953923-6318	129
953924-1300	91
953925-1002	114
953925-2002	114
953925-5002	114
953930-0000	116
953930-0001	116
953930-1002	116
953930-1003	116
953930-2002	116
953930-5002	116
953931-1002	114
953931-2002	114
953931-5002	114
953932-0252	45
953932-0502	45
953932-1002	45
953932-1003	45
953932-2002	45
953932-2003	45
953932-5002	45
953943-1002	111
953943-1003	111
953943-2002	111
953943-5002	111
953963-1002	109
953963-1003	109
953963-2002	109
953963-5002	109
953971-1002	112
953971-1003	112
953971-2002	112
953971-5002	112
953976-1002	113
953976-1003	113
953976-2002	113
953976-5002	113
953980-0252	115
953980-0502	115
953980-1002	115
953980-1003	115
953980-2002	115
953980-2003	115
953980-5002	115
953981-0001	119
953981-0002	119
953981-0003	119
953981-0004	119
953981-0005	119
953981-0047	120
953981-6301	119
953981-6302	119
953981-6347	120
953983-0047	119
953983-6347	119
953984-0090	119
954001-0000	207
954100-0123	207
954100-0126	207
954100-0144	207
954100-0323	207
954100-0326	207
954100-0344	207
954100-0623	207
954100-0626	207
954100-0644	207
954100-1523	207
954100-1526	207
954100-1544	207
954100-3523	207
954100-3526	207
954100-3544	207
954100-6023	207
954100-6026	207
954100-6044	207
954120-1523	207
954120-1526	207
954120-1544	207
954120-3523	207
954120-3526	207
954120-3544	207
954120-6023	207
954120-6026	207
954120-6044	207
954900-0323	206
954900-0326	206
954900-0344	206
954900-0623	206
954900-0626	206
954900-0644	206
954900-1523	206
954900-1526	206
954900-1544	206
954900-3523	206
954900-3526	206
954900-3544	206
955140-0025	335
955141-0025	335
955170-0075	335
955170-0100	335
955170-0110	335
955200-0025	335
955250-3523	208
955250-5023	208
955250-5026	208
955250-5044	208
955250-7523	208
955250-7526	208
955250-7544	208
956500-0022	259
956500-0023	259
956500-0025	259
971000-1047	202
971000-3047	202
971000-6047	202
971100-0047	202
971100-0090	202
971101-0347	202
971101-1047	202
971101-1090	202
971102-0047	202
971102-0090	202
971103-0047	202
971103-0090	202
971103-4247	202
971103-4290	202
971200-1000	202
971200-3000	202
971200-6000	202
994910-0100	218
994910-0250	218
994910-0500	218
994910-1000	218
994910-2000	218
994910-3000	218
994910-5000	218
H32834-0000	129
H32836-0000	129
H35030-0000	131
H35031-0000	131
H86725-0000	131
H86728-0000	131
H88800-0000	91
H90018-0006	410
H90018-0009	410
H90018-0012	410
H90020-0006	410
H90020-0009	410
H90020-0012	410
H90022-0006	410
H90022-0009	410
H90022-0012	410
H90039-0000	410
H90669-0005	91

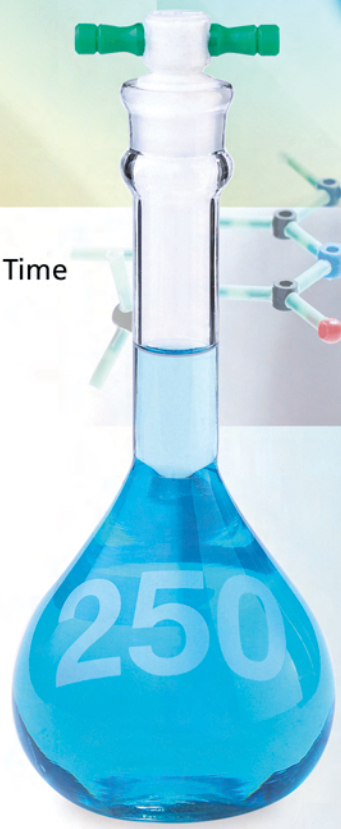
Chase Article No.	Page
2212N	247
2215N	427
2216	427
40A502	425
40B501	425
40C505	425
41A2502	425
41B2501	425
42F604	425
42G605	425
42H606	425
44A507	425
44A509	425
44B506	425
44B508	425
60A10BZ1	426
60A10BZ2	426
60A10BZ3	426
60A10BZ4	426
60A10BZ5	426
60A10BZ6	426
60A10BZB	442
60A10BZG	442
60A10BZL	442
60A10BZW	442
60A10BZXB	442
60A10BZXG	442
60A10BZXL	442
60A10BZXW	442
60AM10	442
60AM10MW	442
60AM10MXW	442
60B12BZ1	426
60B12BZ2	426
60B12BZ3	426
60B12BZ4	426
60B12BZ5	426
60B12BZ6	426
60B12BZB	442
60B12BZG	442
60B12BZL	442
60B12BZW	442
60B12BZXB	442
60B12BZXG	442
60B12BZXL	442
60B12BZXW	442
60BM12	442
60BM12MW	442
60BM12MXW	442
60C13BZW	442
60CM13	442
60E16BZW	442
60EM16	442
60FM165	442
60GM166	442
60KM18	442
60MM190	442
63A54	348
63A54P	348
63B93	348
63B93P	348
63C50	348
63DP1005	348
64FR828B	427
66F828SO	427
67G830SO	427
90G331232C	488
90G331232CL	488
90G331232CLW	488
90G331232S	488
90G511232CA	488
90G511232CLA	488
90G511232CLAW	488
90H13100F	444
90J15103F	444
90J331545SW	488
90J511545SA	488
90J511545SAW	488
90K16100F	444
90K16150F	444
90P20113F	444
90P20125F	444
90S332346B	488
90S332375	488
90S332375B	488
90S332375BMB	488

KIMBLE CHASE

Your Source for Kimble, Kontes and Chase Brands







Ordering Information

To order, contact your local distributor or the office below.

Kimble Chase

Call:
1-888-546-2531 Ext. 1 (toll-free)
(+1)856-692-8500 Ext. 1 (international)
865-717-2600 Ext. 1

Fax:
(865)354-3853
(856)794-9762
(856)691-0271 (international)

Email:
info@kimble-chase.com

Web:
www.kimble-chase.com

Customer Service Hours:
8 am - 5 pm US Eastern Standard Time

Trademarks referred to herein are the property of their respective owners.

Printed in USA.
PDFKC-0722A Rev.2.21.12