
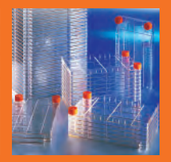


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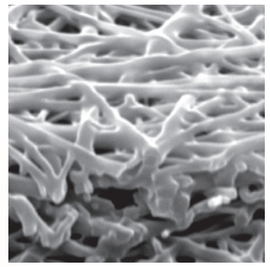
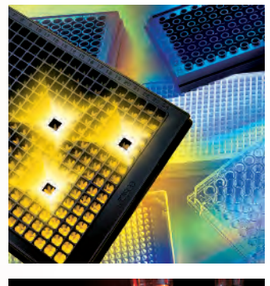
Issue 6


# Corning Life Sciences Selection Guide

Issue 6


Possibilities Made Real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Online ordering now available

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# Corning is helping to make your research possibilities real with new and innovative products.

## Introduction

Corning is pleased to present our Life Sciences Selection Guide. In this guide, you will find a selection of our newest, most innovative and most requested products.

For more than 150 years, Corning Incorporated has leveraged its materials science and process engineering expertise to collaborate closely with customers worldwide — turning what were once only possibilities into breakthrough realities.

One such reality is the Corning® Epic® System, a high-throughput label-free screening platform based on optical biosensor technology. The system performs both biochemical and cell-based drug discovery applications and offers drug developers the ability to evaluate promising new drug targets. It also allows for the observation of direct biological interactions not previously detectable in high-throughput applications.

For hard-to-attach cell lines, Corning offers a number of modified or synthetic surfaces including Corning CellBIND® Surface, Ultra-Low Attachment, and Ultra-Web™ Surfaces. If you are trying to prevent or reduce attachment, we offer plates, dishes, flasks and the CellSTACK® Culture Chambers with our Ultra-Low Attachment surface. We also offer two new vessel formats, the HYPER*Flask*™ Cell Culture Vessel and Low Profile flask, for conserving incubator space.

We have recently advanced our microplate line to include many enhancmements and new products. Check out the new 384 well solid, low-volume and Poly-D-Lysine microplates, as well as 384 and 1536 well microplates with generic bar codes in the Microplates Section.

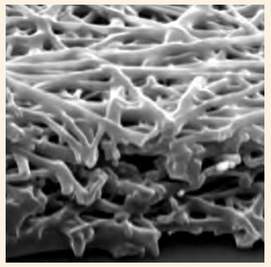
For up-to-date information on Corning Life Sciences' comprehensive range of products and services, go to **www.corning.com/lifesciences** where you can access:

- New Products Information
- Technical Information including:
  - Application Notes
  - Instruction Manuals
  - Product Bulletins
- Educational Opportunities
- Product Catalog Information
- Product Literature
- Complete Distributor Information

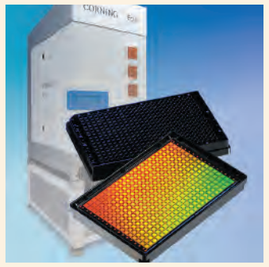
For additional product information, please visit **www.corning.com/lifesciences**, or contact your local support office (see back cover).

Try one of our newest innovations and see if it can help to make your research possibilities real.

**Grow enough cells in one 1720 cm² HYPER*Flask* Cell Culture Vessel to seed 2,000 microplates.**



**Grow more *in vivo*-like cells on Ultra-Web™ synthetic surfaces.**



**Corning's Epic System, the new high-throughput, label-free detection technology allows researchers to bring drugs to market faster.**


**Improve cell attachment and yield with our Corning CellBIND surface – a nonbiological surface with high oxygen levels.**

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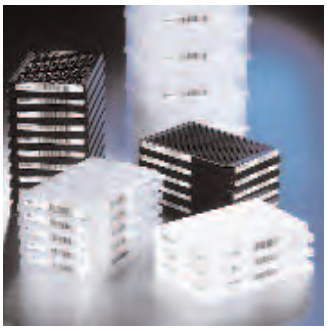
- Corning Low Profile 100 cm² Flask
- Ultra-Web™ Synthetic Surfaces
- Transwell® Permeable Supports Coated with Cultrex® Basement Membrane Extract
- Corning 1L and 3L Disposable Plastic Spinner Flasks
- Corning Aseptic Transfer Caps
- Corning Baffled Erlenmeyer flasks



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- Corning Low Volume 384 Well Solid Black Flat Bottom Microplates
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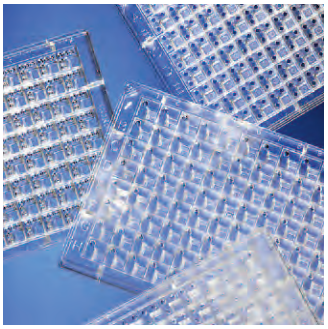
- Corning Square Polycarbonate Storage Bottles
- PYREX® Wide Mouth Storage Bottles
- Clean Room Packaging for Pipets
- Corning CentriStar™ Centrifuge Tubes
- Corning Digital Hot Plates and Stirrers



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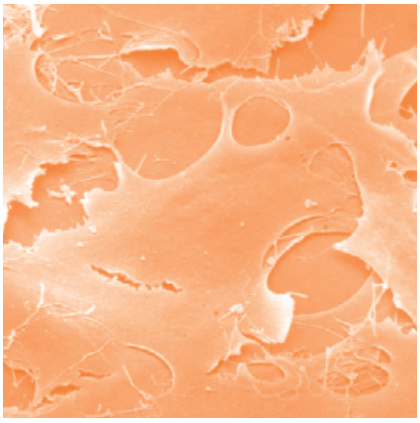
- Next Generation Crystal*EX*™ Protein Crystallization Microplates
- Corning Epoxide Coated Slides

## Online Cell Culture and Assay

# Training



**The Corning Scientific Seminar Series** is a series of free online technical presentations that provide novel tips, best practices and proven techniques to help advance your research. Delivered by scientists, these one hour sessions have proven useful for technicians as well as for researchers who have been doing cell culture and assays for years.

Join us online for an upcoming session or download any of our previously recorded sessions. New topics are added monthly. Former topics include:

- Cell Culture Contamination – Every Researcher's Nightmare!
- Effects of Cell Culture Surfaces on Cellular Behavior
- Detecting, Removing and Managing Mycoplasma Contamination
- Grow More Cells! Scaling Up Cell Production
- Growing Happier Cells
- Growing Cells on Transwell Inserts – Tips and Techniques
- Life and Death *In Vitro* - Growth and Toxicity
- HeLa Cells - A Blessing or a Curse?
- More *In Vivo*-like Cell Cultures and Better Assays with Permeable Supports
- Optimizing Assay Performance through Microplate Attributes and Equipment Setting
- Primary Cell Culture – Tips and Techniques for Getting Started
- Solving Cell Culture Problems
- Using Frozen vs. Continuously Cultured Cells for HTS

**Register at www.corning.com/lifesciences**

### *What attendees had to say about past seminars:*

*"We are not getting information like this from anywhere. The seminar was amazing, very useful to my work. Thanks for organizing these sessions."*

*"Great tips! I'll pass along information I learned here to my colleagues to let them know how we should conduct cell culture properly. Many thanks again indeed."*

*"I use your seminars as training for new employees and estimate they save my company more than $24,000 a year in training costs."*

***All attendees receive a certificate of completion.***

Training is co-sponsored by:

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- Through any Corning Distributor – please visit our website or see pages iii-vii for a full listing. To place an order, simply contact the Distributor of your choice. For each requested product, provide the Corning catalogue number, product description, and desired quantity.

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Web site: www.vitaris.com
Products: Plastics

**Fisher Scientific AG**
Wilstrasse 57
CH-5610 Wohlen
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Phone: 41-56-618-41-11
Fax: 41-56-618-41-41
Email: info@ch.fishersci.com
Web site: www.ch.fishersci.com
Products: Plastics

## United Arab Emirates

**Attieh Medico**
P.O. Box 116105
21391 Jeddah
Saudi Arabia
Phone: 966-2-661-3613
Fax: 966-2-665-1358
Products: Plastics

**Emphor FZCO**
P.O. Box 61232
Jebelau Free Zone
Dubai, UAE
Phone: 971 4 8830233
Fax: 971 50 457 3009
Email: ravi@emphor.biz
Web site: www.emphor.biz
Products: Plastics

## United Kingdom

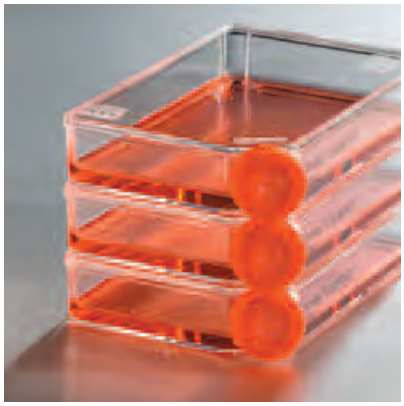
**Fisher Scientific UK.**
Bishop Meadow Road
Loughborough
Leicestershire
UK
Phone: 44-1509-231166
Fax: 44-1509-231893
Email: sales@fisher.co.uk
Web site: www.fisher.co.uk
Products: Plastics

**Appleton Woods Limited**
Lindon House
Heeley Road
Selly Oak
Birmingham
UK
Phone: 44-121-472-7353
Fax: 44-121-414-1075
Email: info@appletonwoods.co.uk
Web site: www.appletonwoods.co.uk
Products: Plastics

**Sigma-Aldrich Company Ltd**
Fancy Road
Poole
Dorset
BH12 4QH
UK
Phone: 44 1202 733114
Fax: 44 1202 715460
Email: ukcustsv@Europe.sial.com
Web site: www.sigma-aldrich.com/uk
Products: Plastics

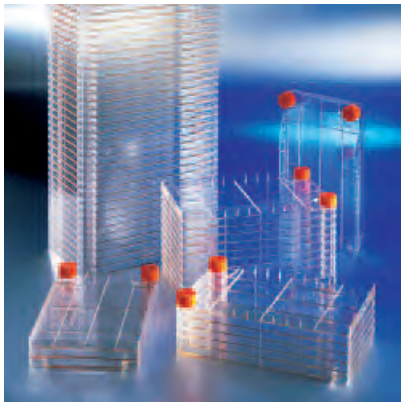
**Western Laboratory Consumables**
Safeguard House
Hazleton Interchange
Horndean
Waterlooville
Hampshire
UK
Phone: 44 0844 8936501
Fax: 44 0870 7746540
Email: sales@consumables-uk.com
Web site: www.consumables-uk.com
Products: Plastics

# Cell Culture



Low Profile Flasks, page 11

HYPER*Flask*™ Cell Culture Vessel, page 12, 27



CellSTACK Culture Chambers, page 28

# Overview

## DESIGNED FOR PERFORMANCE

Corning Life Sciences offers a full line of cell culture products that are manufactured under strict process controls guaranteeing consistent product performance. All Corning Life Sciences plastics manufacturing facilities are ISO 9001:9002 registered. ISO registration is recognized worldwide as a standard of excellence for quality systems.

In addition, customers can now obtain a Certificate of Compliance or product description for any Corning® or Costar® cell culture product from our website. This certificate details lot-specific information on component materials, sterility testing, pyrogen testing, cell attachment, and growth characteristics.

Also available are detailed drawings that highlight product dimensions. Drawings are available simply by calling your local Corning Life Sciences office.

## ADDITIONAL QUALITY ASSURANCES

### Nonpyrogenic Certification

Most Corning and Costar cell culture products are certified nonpyrogenic with a documented endotoxin level of equal to or less than 0.1 EU/mL. Endotoxins have been shown to cause variability in cell culture. Nonpyrogenic certification is just another way Corning helps ensure consistent cell culture results. Corning also offers a detailed technical bulletin on the effects of endotoxins in cell culture. This may be obtained by calling your local Corning Life Sciences office or by downloading the bulletin from the Corning web site **www.corning.com/lifesciences**.

### Lot Number Traceability

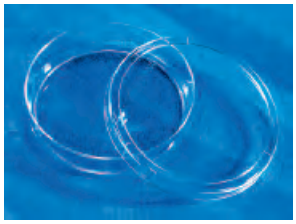
To ensure accurate lot number traceability in biotechnology research and production facilities, most Corning and Costar cell culture flasks and most roller bottles feature a lot number individually printed on each product. Lot number traceability helps simplify quality assurance procedures for tracking and monitoring production and research processes.

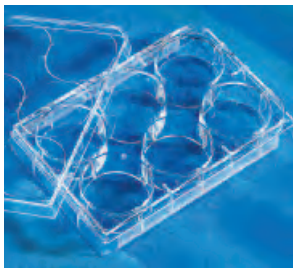
### Consistent Surface Chemistry

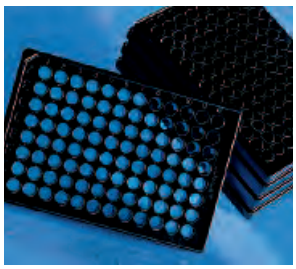
All Corning and Costar cell culture products are produced in ISO-certified facilities. Cell culture products are made from USP Class VI materials in accordance with documented manufacturing procedures. By carefully controlling both the materials we use and our manufacturing process, Corning is able to provide consistent surface chemistries across our entire line of cell culture products. This consistency increases the researcher's ability to produce reliable results.

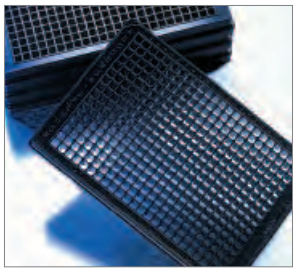
# Corning® CellBIND® Surface

## A Novel Surface for Improved Cell Attachment, Serum Reduction, or the Elimination of Coatings









**Corning CellBIND Surface** is now available on flasks, CellSTACK® Culture Chambers, multiple well plates, 96 and 384 well plates, dishes, and roller bottles.

### Increase Cell Growth and Yields with Corning CellBIND Surface

The Corning CellBIND surface enhances cell attachment under difficult conditions, such as reduced-serum or serum-free medium, resulting in higher cell yields. The first novel cell culture surface treatment in over 20 years.

Developed by Corning scientists, this patented technology (U.S. Patent No. 6,617,152) uses a microwave plasma process for treating the culture surface. This process improves cell attachment by incorporating significantly more oxygen into the cell culture surface, rendering it more hydrophilic (wettable) and increasing surface stability.

### Benefits

- May eliminate the need for tedious, time-consuming, expensive and low stability biological coatings
- More quickly adapts cells to reduced-serum or serum-free conditions
- Increase cell survival following cryo-preservation
- Reduces premature cell detachment from confluent cultures especially in roller bottles
- Better cell attachment leads to increased cell growth and yields
- More consistent and even cell attachment
- Requires no refrigeration or special handling and is stable at room temperature

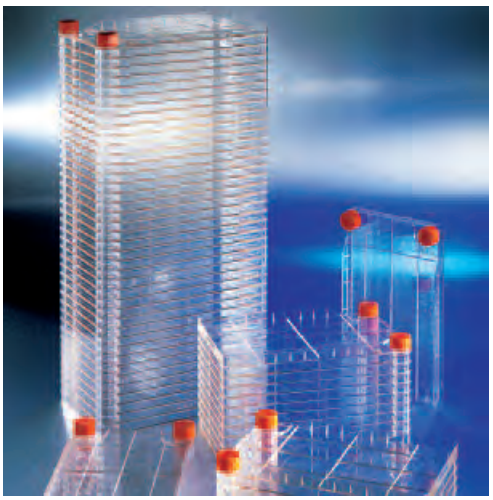
### Same High Quality Standards as Other Corning Vessels

- Manufactured from optically clear polystyrene
- Rigorous QC testing for consistency and reproducibility
- Certified nonpyrogenic and sterile
- Lot numbers for quality assurance and tracking
- Corning CellBIND surface logo differentiates from standard treatment cell culture products and avoids mix-ups

### Cell Dissociation Recommendations

Culture inoculating and harvesting should be performed in the same manner as methods currently being employed. Both enzymatic and nonenzymatic dissociating solutions have been successfully used to remove cells from Corning CellBIND surfaces. These include: Trypsin-EDTA, Accutase®, Versene®, Dispase®, and Citric Saline. Some dissociating agents, such as Dispase or Versene, should be removed by centrifugation prior to plating the cells.

HYPER*Flask*™ Cell Culture Vessel



CellSTACK Culture Chambers

## Enhanced Attachment of LNCaP Cells to the Corning® CellBIND® Surface*

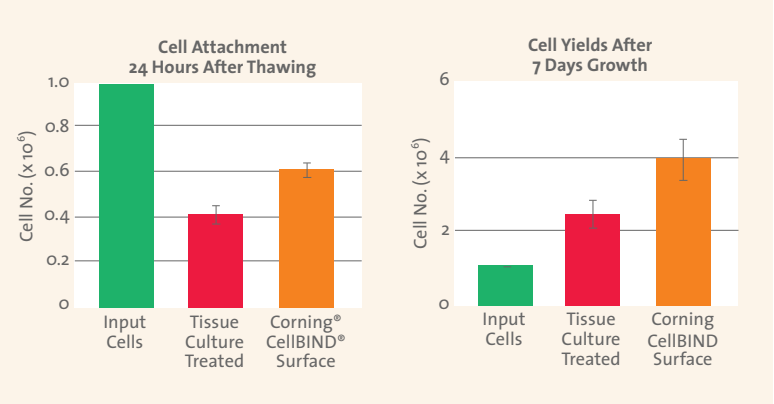



**Figure 1.** Left: Adherent cell recovery and growth of LNCaP cells 24 hours post-seeding. Data is average ± standard error from 3 independent experiments. Right: Average ± standard error from 3 independent experiments for 7 day growth after initial attachment.

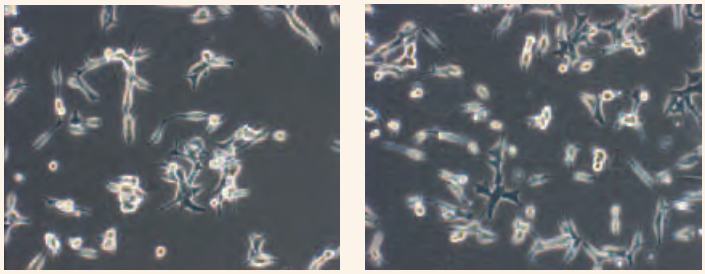
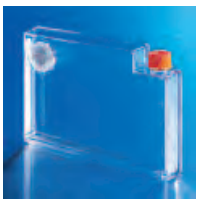


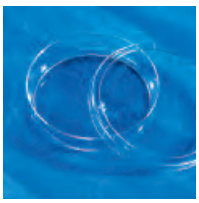
**Figure 2.** Attachment of LNCaP cells. Cells were thawed and plated onto the Corning CellBIND Surface (right) or tissue culture treated (left) T25 flasks. 24 hours post seeding a random field was viewed by light microscopy (100X magnification).

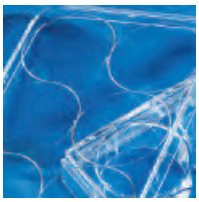
*From *Enhanced Attachment of LNCaP Cells to the Corning CellBIND Surface*, Corning Sn*APP*Shot publication CLS-AN-048.

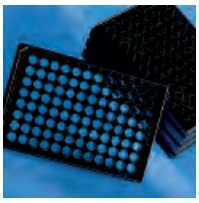
### Corning CellBIND Surface Product Ordering Information

| Cat. No. | Description | Qty/ Pk | Qty/ Cs |
|---|---|---|---|
| *Roller Bottles* | | | |
| 3907 | Roller Bottle, 850 $cm^2$, Corning CellBIND Surface, Easy Grip Cap, Sterile | 2 | 40 |
| 431134 | Expanded Surface Roller Bottle, 1700 $cm^2$, Corning CellBIND Surface, PS, Easy Grip Cap, Sterile | 20 | 20 |
| 431329 | Roller Bottle, 850 $cm^2$, Corning CellBIND Surface, Vent Cap, Sterile | 2 | 40 |
| 431344 | Roller Bottle, 850 $cm^2$, Corning CellBIND Surface, Easy Grip Cap, Sterile | 22 | 44 |
| *Flasks* | | | |
| 3289 | Flask, 25 $cm^2$, Corning CellBIND Surface with Vent Cap, Sterile | 20 | 200 |
| 3290 | Flask, 75 $cm^2$, Corning CellBIND Surface with Vent Cap, Sterile | 5 | 100 |
| New 3073 | Low Profile Flask, 100 $cm^2$, Corning CellBIND Surface with Vent Cap, Sterile | 6 | 60 |
| 3291 | Flask, 150 $cm^2$, Corning CellBIND Surface with Vent Cap, Sterile | 5 | 50 |
| 3292 | Flask, 175 $cm^2$, Corning CellBIND Surface with Vent Cap, Sterile | 5 | 50 |
| 3293 | Flask, 225 $cm^2$, Corning CellBIND Surface with Vent Cap, Sterile | 5 | 25 |
| 3298 | Flask, 175 $cm^2$, Corning CellBIND Surface with Phenolic Cap, Sterile | 5 | 50 |
| 431328 | Flask, 175 $cm^2$, Corning CellBIND Surface, Bar coded with Vent Cap, Sterile | 7 | 84 |







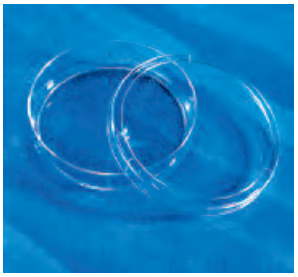


## Corning® CellBIND® Surface Product Ordering Information (Continued)

| Cat. No. | Description | Qty/ Pk | Qty/ Cs |
|---|---|---|---|
| New 10010 | HYPER*Flask*™ Vessel, 1720 $cm^2$, Corning CellBIND Surface, Bar Code, Sterile | 4 | 4 |
| New 10024 | HYPER*Flask* Vessel, 1720 $cm^2$, Corning CellBIND Surface, Bar Code, Sterile | 4 | 24 |
| 431346 | Expanded Surface Flask, 235 $cm^2$, Corning CellBIND Surface, with Bar Code, Vent Cap, Sterile | 7 | 42 |
| 3068 | RoboFlask® Tissue Culture Vessel for Automation, 92.6 $cm^2$ growth area, Corning CellBIND Surface, with Bar Code, Septum Cap, Sterile | 10 | 50 |
| 3067 | RoboFlask Tissue Culture Vessel for Automation, 92.6 $cm^2$ growth area, Corning CellBIND Surface, with Bar Code, Septum Cap, Sterile | 20 | 100 |
| *CellSTACK® Culture Chambers* | | | |
| 3330 | CellSTACK-1 Chamber, 636 $cm^2$ growth area, Corning CellBIND Surface, Sterile | 1 | 8 |
| 3310 | CellSTACK-2 Chamber, 1,272 $cm^2$ growth area, Corning CellBIND Surface, Sterile | 1 | 5 |
| 3311 | CellSTACK-5 Chamber, 3,180 $cm^2$ growth area, Corning CellBIND Surface, Sterile | 1 | 2 |
| 3312 | CellSTACK-10 Chamber, 6,360 $cm^2$ growth area, Corning CellBIND Surface, Sterile | 1 | 2 |
| 3320 | CellSTACK-10 Chamber, 6,360 $cm^2$ growth area, Corning CellBIND Surface, Sterile | 1 | 6 |
| 3321 | CellSTACK-40 Chamber, 25,440 $cm^2$ growth area, Corning CellBIND Surface, Sterile | 1 | 2 |
| *Dishes* | | | |
| 3294 | Dish, 35 x 10 mm style, Corning CellBIND Surface, Sterile | 10 | 210 |
| 3295 | Dish, 60 x 15 mm style, Corning CellBIND Surface, Sterile | 7 | 126 |
| 3296 | Dish, 100 x 20 mm style, Corning CellBIND Surface, Sterile | 5 | 40 |
| *Multiple Well Plates* | | | |
| 3335 | 6 Well Plate, Corning CellBIND Surface, Clear, Sterile, with Lid | 5 | 50 |
| 3336 | 12 Well Plate, Corning CellBIND Surface, Clear, Sterile, with Lid | 5 | 50 |
| 3337 | 24 Well Plate, Corning CellBIND Surface, Clear, Sterile, with Lid | 5 | 50 |
| 3338 | 48 Well Plate, Corning CellBIND Surface, Clear, Sterile, with Lid | 5 | 50 |
| *Microplates* | | | |
| 3300 | 96 Well Plate, Corning CellBIND Surface, Clear Bottom, Sterile, with Lid | 5 | 50 |
| 3340 | 96 Well Plate, Corning CellBIND Surface, Black/Clear Bottom, Sterile, with Lid | 5 | 50 |
| 3683 | 384 Well Plate, Corning CellBIND Surface, Black/Clear Bottom, Sterile, with Lid | 10 | 50 |

# Ultra-Low Attachment Dishes, Plates, Flasks, and CellSTACK® Culture Chambers

The Ultra-Low Attachment surface is a unique covalently bonded hydrogel surface that is hydrophilic and neutrally charged. It minimizes cell attachment, protein absorption and enzyme activation. The surface is noncytotoxic, biologically inert and nondegradable.



**3261 and 3262** Ultra-Low Attachment Dishes

## Ultra-Low Attachment Dishes Ordering Information

| Cat. No. | Dish Style (mm)* | Height (mm) | Growth Area (cm²) | Qty/Pk | Qty/Cs |
|---|---|---|---|---|---|
| 3261 | 60 | 15 | 21 | 5 | 20 |
| 3262 | 100 | 20 | 55 | 5 | 20 |

*60 mm dish = 52.1 mm; 100 mm dish = 83.8 mm

## Ultra-Low Attachment Plates Ordering Information

| Cat. No. | Plate Type | Bottom Type | Diameter (mm) | Growth Area (cm²) | Qty/Pk | Qty/Cs |
|---|---|---|---|---|---|---|
| 3471 | 6 well plate | Flat | 34.8 | 9.5 | 1 | 24 |
| 3473 | 24 well plate | Flat | 15.6 | 1.9 | 1 | 24 |
| 3474 | 96 well plate | Flat | 6.4 | 0.32 | 1 | 24 |
| New 7007 | 96 well plate | Round | 6.4 | 0.32 | 1 | 24 |

**3814** T-75 Flask

## Ultra-Low Attachment Flasks Ordering Information

| Cat. No. | Flask Type | Cap Style | Growth Area (cm²) | Qty/Pk | Qty/Cs |
|---|---|---|---|---|---|
| 3815 | Rectangular | Vent | 25 | 6 | 24 |
| 3814 | Rectangular | Vent | 75 | 4 | 24 |

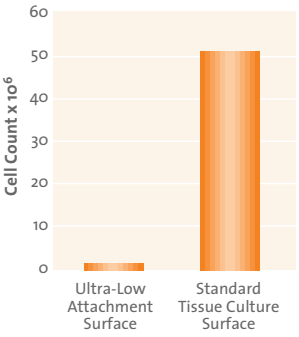
## Ultra-Low Attachment CellSTACK Ordering Information

| Cat. No. | Flask Type | Cap Style | Growth Area (cm²) | Qty/Pk | Qty/Cs |
|---|---|---|---|---|---|
| 3303 | CellSTACK Chamber, 1-Stack | Vent | 636 | 1 | 8 |

### *Ultra-Low Attachment Tip*

The Ultra-Low Attachment products may be useful for:

- Maintaining cells in a suspended, unattached state
- Preventing stem cells from attachment-mediated differentiation
- Preventing anchorage-dependent cells from dividing
- Reducing binding of attachment and serum proteins to the substrate




**Comparison of Cell Attachment in Ultra-Low vs. Standard Tissue Culture Treated Plates**

Vero cells plated at 2.6 x $10^6$ cells per well grown for 4 days at 37°C in a 5% $CO_2$ environment show a 99% reduction in cellular attachment vs. standard culture treated product.

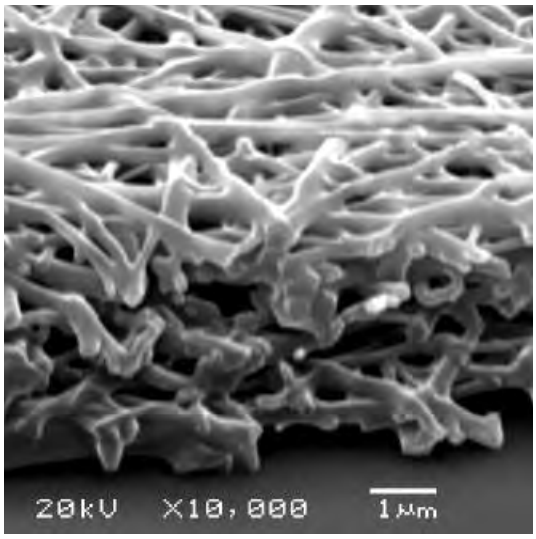
Suggested working volumes for Ultra-Low Attachment products:

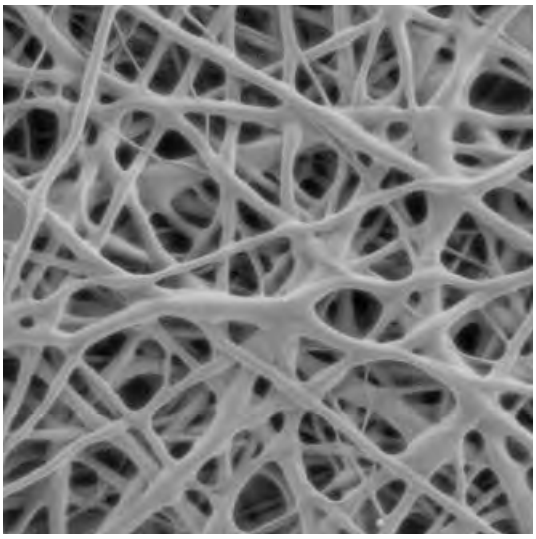
- 96 well plate: 0.1 to 0.2 mL/well
- 24 well plate: 0.4 to 0.8 mL/well
- 6 well plate: 1.9 to 3.8 mL/well
- 60 mm dish: 4.2 to 6.3 mL/dish
- 100 mm dish: 11.0 to 16.5 mL/dish
- 25 $cm^2$ flask: 5 to 7.5 mL/flask
- 75 $cm^2$ flask: 15 to 22.5 mL/flask
- CellSTACK Chamber, 1-STACK: 127 to 190 mL/stack

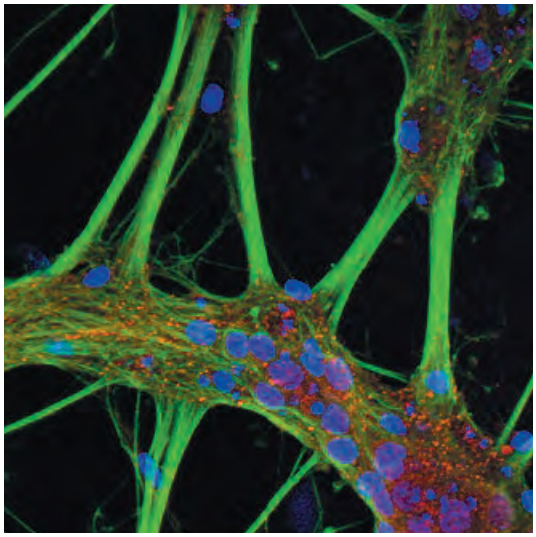
There are no special procedures that need to be followed in order to use this surface.

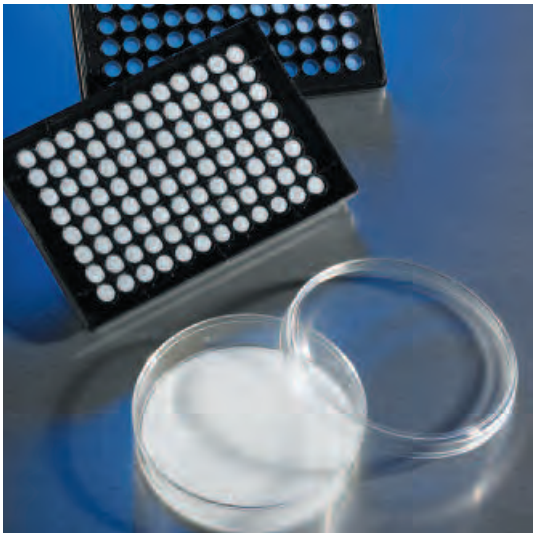
# Corning® Labware with Ultra-Web™ Surfaces

## Innovative synthetic surfaces which provide cells with 3-D *in vivo*-like nanofibrillar substrates for better performance and functionality







SEM cross sectional (top left) and top down (top right) images (10,000X) of the Ultra-Web Synthetic Surface. Pores between the nanofibers are so small that the cells grow on the surface rather than in it. Primary Rat Cortex Neurons Ultra-Web (bottom left): surfaces support neuronal attachment, neurite outgrowth, and promote earlier neuronal aggregation, and are compatible with fluorescent staining and visualization or photography of cells. Primary rat cortex neurons (20X) were stained with anti-Tuj-1 (Class III beta tubulin), Hoechst (nuclei) and anti-Synapsin I. Synapsin I binds synaptic vesicles containing neurotransmitters to components of the cytoskeleton and facilitate their release, and thus indicate preserved neuronal function. Synapsin staining is greatest in areas between bundle formation on Ultra-Web surface (red stain, indicated by arrows). Corning Labware with Ultra-Web synthetic surface (bottom right).

# Corning® Labware with Ultra-Web™ Surfaces

## Technical Information

Ultra-Web Synthetic Surfaces are composed of randomly orientated electrospun polyamide nanofibers with an average fiber diameter of ~180 nm. This creates a culturing substrate that mimics structural components within the basement membrane or extracellular matrix.

Ultra-Web synthetic surface is available with two surface chemistries:

- Untreated electrospun polyamide nanofibers with an uncharged slightly hydrophilic surface
- Polyamine treated electrospun polyamide nanofibers with a positively charged surface for enhanced cell attachment or binding and covalently linking biomolecules

## Ultra-Web Synthetic Surface Applications

- Ideal for culturing liver, neuronal, kidney and stem cell lines or primary cultures where current surfaces do not provide the necessary culture performance or function
- Replacement for poly-lysine or animal-derived biological coatings
- Ideal substrate for binding cell attachment and growth factors to create more *in vivo*-like culture environments
- Compatible with cell-based luminescence-reporter gene and FLIPR calcium flux assays
- Promotes more *in vivo*-like morphology (spheroid and dome formation)

## Ultra-Web Synthetic Surface Features

- Synthetic surfaces are more stable and consistent lot to lot than biological coatings
- Cells grow on the nanofiber surface, not in it, for easy harvesting
- Easy to view cells using phase contrast microscopy
- Ready to use and room temperature stable
- Animal component-free and irradiation sterilized (SAL $10^{-6}$) for extra security
- Compatible with most existing cell culture protocols and methods
- Easily coated with ECM molecules and growth factors

## Imaging

Ultra-Web nanofibers provide a very thin three-dimensional surface on which the cells grow; consequently, focusing on and recognizing cells can be a little more difficult than traditional flat surfaces. Light microscopy, including phase contrast and differential interference contrast (DIC) can be used to view cells seeded on Ultra-Web surfaces.

Ultra-Web nanofibers should not interfere with imaging cells via fluorescence microscopy and has been tested successfully with Texas Red, Cy3, Cy5, FITC, and GFP filters. DAPI and Hoechst dyes demonstrate limited nonspecific binding to the Ultra-Web surface resulting in a slight increase in background staining dependent upon intensity of cell staining. Diluting DAPI or Hoechst staining solutions between 1:10 and 1:20 the recommended dose is suggested for routine staining to reduce this background staining. Testing with a cell-free control is advised.

## Harvesting

Cells grown on Ultra-Web or Ultra-Web polyamine surfaces may be subcultured using standard cell dissociation techniques with trypsin, collagenase, or other enzymatic and nonenzymatic dissociation solutions or cell scraping (for recommended scrapers see Corning Cat. No. 3008 or 3010). Note: To aid cell detachment gentle pipetting or mechanical agitation by tapping the culture vessel may be used. Scraping can be used to detach any remaining cells. Gentle cell scraping results in minimal damage to the Ultra-Web surface. However, robust scraping will remove the Ultra-Web surface.


### Corning Labware with Ultra-Web Surfaces Product Ordering Information

| Cat. No. | Description | Qty/Pk | Qty/Cs |
|---|---|---|---|
| 3870XX1 | Corning 100 mm Dish with Ultra-Web Synthetic Surface, Sterile | 5 | 20 |
| 3871XX1 | Corning 100 mm Dish with Ultra-Web Synthetic Polyamine Surface, Sterile | 5 | 20 |
| 3872XX1 | Corning 96 Well Plate with Ultra-Web Synthetic Surface, Black/Clear Bottom, Sterile with Lid | 5 | 10 |
| 3873XX1 | Corning 96 Well Plate with Ultra-Web Synthetic Polyamine Surface, Black/Clear Bottom, Sterile with Lid | 5 | 10 |

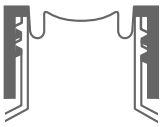
These products are covered by one or more of the following patents: U.S. Patent numbers 5002582, 5512329, 6121027, 6514734, 6924028, and 6955775. Additional U.S. and international patents pending.

# Cell Culture Flasks

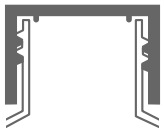
Corning® and Costar® flasks are available in a variety of sizes, designs and cap styles to meet your needs.

- Corning CellBIND® Surface is a novel cell culture treatment that increases surface wettability for more even and consistent cell attachment
- Ultra-Low Attachment flasks feature a covalently bound hydrogel layer that minimizes cell attachment, protein absorption and cellular activation
- Manufactured from optically clear virgin polystyrene
- Treated for optimal cell attachment
- Printed with lot numbers for ease in traceability
- 100% integrity tested
- Sterilized by gamma irradiation
- Certified nonpyrogenic

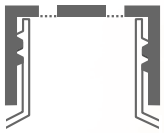
## Flask Cap Styles



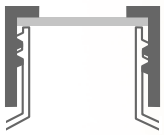
**Plug seal caps** feature one-piece linerless construction and are designed for use in closed systems, providing a liquid- and gas-tight seal. When loosened, this cap can also be used in open systems. This cap design was a Corning innovation that first appeared in 1974.



**Phenolic style caps** are designed (when loosened) for use in open systems requiring gas exchange. With the caps slightly loosened, gas is exchanged between the environments inside and outside of the flask.

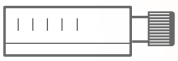


**Vent caps** contain a 0.2 µm pore nonwettable membrane sealed to the cap, providing consistent, sterile gas exchange while minimizing the risk of contamination. These caps are highly recommended for use in all $CO_2$ incubators, especially for long-term use. The vent cap was a Corning innovation that first appeared in 1988.



**Septum caps** maintain a closed sterile environment within the RoboFlask™ vessel. The septum allows for adding or removing cells and solutions with a blunt tip cannula while reducing the opportunity for contamination. The septum is presplit to prevent coring of the septum by the cannula. The cap may also be removed to allow pipet access (up to 5 mL) or assist in harvesting of cells. This cap septum is validated for multiple entries.

## Flask Neck Styles



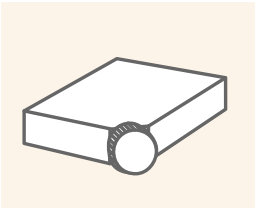
Straight neck flasks are ideal for larger medium volumes since this design reduces medium sloshing into the cap.

Canted neck flasks allow easier pouring and improved access to the flask for pipetting or scraping. The canted neck design was a Corning innovation that first appeared in 1974.

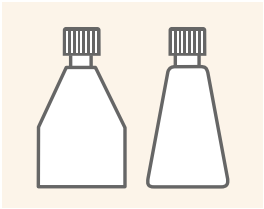
Angled neck improves pipet access and reduces medium sloshing into the neck. This patented design was a Corning innovation that first appeared in 1988.

## Flask Shapes

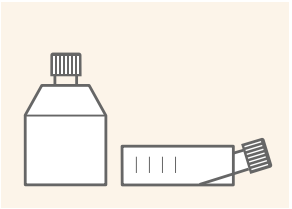
Choosing a flask shape is usually a matter of personal preference:



**Low Profile flasks** have reduced height for incubator space savings. The corner neck gives direct access to the flask corner.

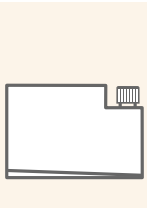


**Triangular and modified triangular flasks** offer good pipet and cell scraper access to the corners. The wider base provides added stability.



**Rectangular flasks** have a ramp from the bottom to the canted neck for easier pouring and pipet access. Most canted neck flasks also have an antitip skirt to enhance stability.

**Angled neck and traditional straight neck flasks** utilize the entire bottom area for cell growth. Their design saves on space and reduces medium sloshing into the neck.



**RoboFlask™ vessels** are robotics compatible cell culture flasks offering 92.6 cm² cell growth surface area. The flasks are designed for use in automated cell culture systems utilizing a microplate-size format.

**3056** 25 cm² Triangular Flask with Vent Cap

**430639** 25 cm² Canted Neck Flask with Vent Cap

### Corning® Cell Culture Flask Ordering Information

*25 cm² Growth Area Flasks*

| Cat. No. | Surface | Flask Style | Neck Style | Cap Style | Qty/Pk | Qty/Cs |
|---|---|---|---|---|---|---|
| 430168 | TC | Rectangular | Canted | Plug Seal | 20 | 500 |
| 430372 | TC | Rectangular | Canted | Phenolic-Style | 20 | 500 |
| 430639 | TC | Rectangular | Canted | Vent Cap | 20 | 200 |
| 3055 | TC | Triangular | Angled | Phenolic-Style | 20 | 500 |
| 3056 | TC | Triangular | Angled | Vent Cap | 10 | 200 |
| 3289 | Corning® CellBIND® Surface | Rectangular | Canted | Vent Cap | 20 | 200 |
| 3815 | Ultra-Low Attachment | Rectangular | Canted | Vent Cap | 6 | 24 |

*75 cm² Growth Area Flasks*

| Cat. No. | Surface | Flask Style | Neck Style | Cap Style | Qty/Pk | Qty/Cs |
|---|---|---|---|---|---|---|
| 430641 | TC | Rectangular | Canted | Vent Cap | 5 | 100 |
| 430720 | TC | Rectangular | Canted | Plug Seal | 5 | 100 |
| 430725 | TC | Rectangular | Canted | Phenolic-Style | 5 | 100 |
| 3275 | TC | Modified triangular | Straight | Phenolic-Style | 5 | 100 |
| 3276 | TC | Modified triangular | Straight | Vent Cap | 5 | 100 |
| 3290 | Corning CellBIND Surface | Rectangular | Canted | Vent Cap | 5 | 100 |
| 3814 | Ultra-Low Attachment | Rectangular | Canted | Vent Cap | 4 | 24 |

### *Cell Culture Tip*

Check the Corning web site (**www.corning.com/lifescience**) for technical cell culture application bulletins.

**430641** 75 cm² Canted Neck Flask with Vent Cap

**430725** 75 cm² Canted Neck Flask with Phenolic Style Cap

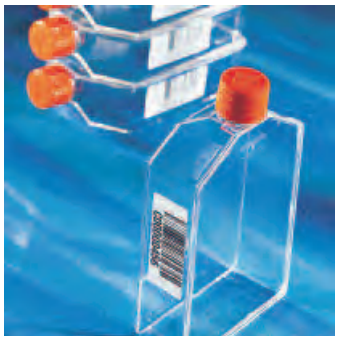
**3275** 75 cm² Triangular Flask with Phenolic Style Cap

### *Cell Culture Flask Selection Tip*

Corning's unique RoboFlask™ (U.S. Patent 7,078,228) Cell Culture Vessels are designed to an SBS standard microplate footprint for use in automated cell maintenance and assay systems.

**3070** RoboFlask® Cell Culture Vessel with Septum Cap

**430823** 150 cm² Canted Neck Flask with Plug Seal Cap



**431306** 175 cm² Flask with Vent Cap and Bar Code


**3073** Low Profile Flask

### *Cell Culture Flask Selection Tip*

The Low Profile 100 cm² flask:

- gives 33% more area in the footprint of a T75 flask
- has a 1/2 turn easy-opening cap
- saves 33% in incubator space
- uses 26% less plastic than a T75 flask

### *Cell Culture Flask Application Tip*

Corning recommends 0.2 to 0.3 mL of medium per cm² of growth area.

#### *92.6 cm² Growth Area RoboFlask™ Vessels*

| Cat. No. | Description | Qty/Pk | Qty/Cs |
|---|---|---|---|
| 3070 | RoboFlask Cell Culture Vessel for automation, tissue culture treated, with bar code, septum cap, sterile | 20 | 100 |
| 3071 | RoboFlask Cell Culture Vessel for manual use, tissue culture treated, with bar code, flat cap (without septum), sterile | 20 | 100 |
| 3069 | RoboFlask Cell Culture Vessel for automation, tissue culture treated, with bar code, septum cap, sterile | 10 | 50 |
| 3059 | RoboFlask Cell Culture Vessel for manual use, tissue culture treated, with bar code, flat cap (without septum), sterile | 10 | 50 |
| 3067 | RoboFlask Cell Culture Vessel for automation, Corning® CellBIND® surface treatment with bar code, septum cap, sterile | 20 | 100 |
| 3068 | RoboFlask Cell Culture Vessel for automation, Corning CellBIND surface treatment with bar code, septum cap, sterile | 10 | 50 |

#### *100 cm² Growth Area Low Profile Flask*

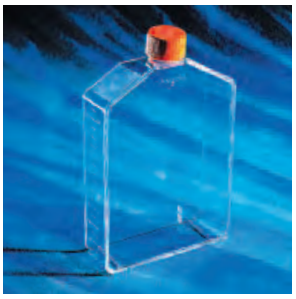
| Cat. No. | Description | Qty/Pk | Qty/Cs |
|---|---|---|---|
| 3073 | Low Profile Flask, 100 cm², Corning CellBIND Surface with Vent Cap, Sterile | 6 | 60 |
| 3816 | Low Profile Flask, 100 cm², tissue culture surface with Vent Cap, Sterile | 6 | 60 |

#### *150 cm² Growth Area Flasks*

| Cat. No. | Surface | Flask Style | Neck Style | Cap Style | Qty/Pk | Qty/Cs |
|---|---|---|---|---|---|---|
| 430823 | TC | Rectangular | Canted | Plug Seal | 5 | 50 |
| 430824 | TC | Rectangular | Canted | Phenolic Style | 5 | 50 |
| 430825 | TC | Rectangular | Canted | Vent Cap | 5 | 50 |
| 3291 | Corning CellBIND Surface | Rectangular | Canted | Vent Cap | 5 | 50 |

#### *162 cm² Growth Area Flasks*

| Cat. No. | Surface | Flask Style | Neck Style | Cap Style | Qty/Pk | Qty/Cs |
|---|---|---|---|---|---|---|
| 3150 | TC | Traditional | Straight | Phenolic Style | 5 | 25 |
| 3151 | TC | Traditional | Straight | Vent Cap | 5 | 25 |



**431082** 225 cm² Angled Neck Flask with Vent Cap


**10010** HYPER*Flask* Vessel

### *Cell Culture Flask Selection Tip*

The novel HYPER*Flask* Vessel offers high yield and high performance with 10 growth surfaces and 1720 cm² growth area in the same footprint as the 175 cm² flask.

**3001** 225 cm² Canted Neck Flask with Vent Cap

### *175 cm² Growth Area Flasks*

| Cat. No. | Surface | Flask Style | Neck Style | Cap Style | Qty/Pk | Qty/Cs |
|---|---|---|---|---|---|---|
| 431079 | TC | Rectangular | Angled | Plug Seal | 5 | 50 |
| 431080 | TC | Rectangular | Angled | Vent Cap | 5 | 50 |
| 431085 | TC | Rectangular | Angled | Phenolic Style | 5 | 50 |
| 431306* | TC | Rectangular | Angled | Vent Cap | 7 | 84 |
| 431328* | Corning® CellBIND® Surface | Rectangular | Angled | Vent Cap | 7 | 84 |
| 3292 | Corning CellBIND Surface | Rectangular | Angled | Vent Cap | 5 | 50 |
| 3298 | Corning CellBIND Surface | Rectangular | Angled | Phenolic Style | 5 | 50 |

*Flask prelabeled with bar code, validated for use with SelecT™ Robotic System.

### *225 cm² Growth Area Flasks*

| Cat. No. | Surface | Flask Style | Neck Style | Cap Style | Qty/Pk | Qty/Cs |
|---|---|---|---|---|---|---|
| 431081 | TC | Traditional | Angled | Plug Seal | 5 | 25 |
| 431082 | TC | Traditional | Angled | Vent Cap | 5 | 25 |
| 3000 | TC | Rectangular | Canted | Phenolic Style | 4 | 24 |
| 3001 | TC | Rectangular | Canted | Vent Cap | 4 | 24 |
| 3293 | Corning CellBIND Surface | Traditional | Angled | Vent Cap | 5 | 25 |

### *235 cm² Expanded Growth Area Flask*

| Cat. No. | Surface | Flask Style | Neck Style | Cap Style | Qty/Pk | Qty/Cs |
|---|---|---|---|---|---|---|
| 431346* | Corning CellBIND Surface | Rectangular | Angled | Vent Cap | 7 | 42 |

*Flask prelabeled with bar code for use with SelecT Automation System with same footprint as the 175 cm² flask.

### *1720 cm² Growth Area* HYPER*Flask*™ *Vessel*

| Cat. No. | Description | Qty/Pk | Qty/Cs |
|---|---|---|---|
| 10010* | HYPER*Flask* Vessel, 1720 cm², Corning CellBIND Surface, Bar Code, Sterile | 4 | 4 |
| 10024* | HYPER*Flask* Vessel, 1720 cm², Corning CellBIND Surface, Bar Code, Sterile | 4 | 24 |

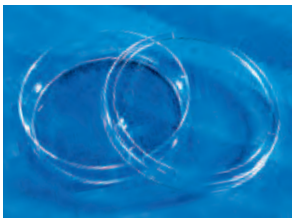
*Flask prelabeled with bar code for use with SelecT Robotic System.

### Cell Yields and Recommended Medium Volume

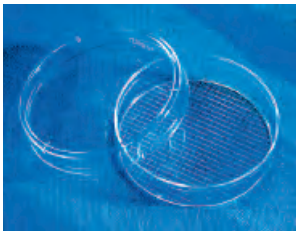
| Corning and Costar® Flasks | Approximate Growth Area (cm²) | Average Cell Yield* | Recommended Medium Volume (mL) | Maximum Working Volume (mL)† |
|---|---|---|---|---|
| 25 cm² | 25 | $2.5 \times 10^6$ | 5 - 7.5 | 10 |
| 75 cm² Canted neck | 75 | $7.5 \times 10^6$ | 15 - 22.5 | 60 |
| 75 cm² Straight neck | 75 | $7.5 \times 10^6$ | 15 - 22.5 | 90 |
| RoboFlask™ Vessel | 93 | $9.4 \times 10^6$ | 20 - 30 | 70 |
| 100 cm² | 100 | $1.0 \times 10^7$ | 20 - 30 | 40 |
| 150 cm² | 150 | $1.5 \times 10^7$ | 30 - 45 | 210 |
| 162 cm² | 162 | $1.6 \times 10^7$ | 32 - 48 | 175 |
| 175 cm² | 175 | $1.75 \times 10^7$ | 35 - 52.5 | 250 |
| 225 cm² | 225 | $2.25 \times 10^7$ | 45 - 67.5 | 370 |
| 235 cm² | 235 | $2.35 \times 10^7$ | 47 - 70.5 | 250 |
| 1720 cm² | 1720 | $2.5 \times 10^8$ | 565 | 565 |

*Assumes an average yield of $1 \times 10^5$ cells/cm² from a 100% confluent culture. Yields from many cell types can be lower than this.
†Maximum working volume is the amount a flask can hold in the horizontal position when filled to the neck.

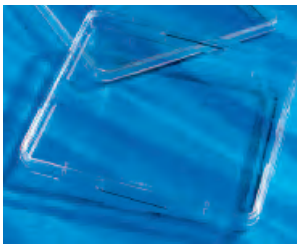
# Cell Culture Dishes



**3296** Corning CellBIND Surface 100 mm Dishes



**430196** Gridded 60 mm Dish



**431110** 500 cm² Cell Culture Dish

**3870XX1** 100 mm Tissue Culture Dish with Ultra-Web Synthetic Surface

***Cell Culture Tip***

Check the Corning web site (**www.corning.com/lifesciences**) for technical cell culture application bulletins.

## Corning Cell Culture Treated Dishes

- Corning® CellBIND® Surface is a novel cell culture treatment that increases surface wettability for more even and consistent cell attachment
- Ultra-Low Attachment dishes feature a covalently bound hydrogel layer that minimizes cell attachment, protein absorption and cellular activation
- Ultra-Web™ Synthetic Surface is composed of electrospun polyamide nanofibers, creating a culturing substrate that mimics structural components within the basement membrane or extracellular matrix.
- 6-pack carriers with only 10 dishes/bag are available for 100 mm dishes (Cat No. 430293)
- 245 mm square dishes offer 500cm² growth surface
- Manufactured from optically clear virgin polystyrene
- Sterilized by gamma radiation
- Certified nonpyrogenic
- Have stacking beads to aid in handling
- Supplied with vents to provide consistent gas exchange

### Corning® Cell Culture Dish Ordering Information

| Cat. No. | Surface | Dish Style* (mm) | Approx. Height (mm) | Growth Area (cm²) | Qty/Pk | Qty/Cs |
|---|---|---|---|---|---|---|
| 3294 | Corning CellBIND Surface | 35 | 10 | 8 | 10 | 210 |
| 430165 | TC | 35 | 10 | 8 | 20 | 500 |
| 430166 | TC | 60 | 15 | 21 | 20 | 500 |
| 3295 | Corning CellBIND Surface | 60 | 15 | 21 | 7 | 126 |
| 3261 | Ultra-Low Attachment | 60 | 15 | 21 | 5 | 20 |
| 3262 | Ultra-Low Attachment | 100 | 20 | 55 | 5 | 20 |
| 430196 | TC | 60 with 2 mm grid | 15 | 21 | 20 | 500 |
| 3296 | Corning CellBIND Surface | 100 | 20 | 55 | 5 | 40 |
| 3870XX1 | Ultra-Web Synthetic Surface | 100 | 20 | 55 | 5 | 20 |
| 3871XX1 | Ultra-Web Synthetic Polyamine Surface | 100 | 20 | 55 | 5 | 20 |
| 430167 | TC | 100 | 20 | 55 | 20 | 500 |
| 430293 | TC | 100 | 20 | 55 | 10 | 480 |
| 430599 | TC | 150 | 25 | 148 | 5 | 60 |
| 431110 | TC | 245 | 25 | 500 | 4 | 16 |

*Dish style (mm) = actual growth surface diameters: 35 mm dish = 34.4 mm; 60 mm dish = 52.1 mm; 100 mm dish = 83.8 mm; 150 mm dish = 139.1 mm. The square dishes have interior bottom dimensions of 224 mm x 224 mm.

## Corning Nontreated Cell Culture Dishes

- Manufactured from optically clear virgin polystyrene
- Not cell culture treated for applications where cell attachment is not desired
- Have stacking beads to aid in handling
- Supplied with vents to provide consistent gas exchange
- Sterilized by gamma radiation
- Certified nonpyrogenic

### Corning Nontreated Cell Culture Dish Ordering Information

| Cat. No. | Dish Style* (mm) | Height (mm) | Approx. Growth Area (cm²) | Qty/Pk | Qty/Cs |
|---|---|---|---|---|---|
| 430588 | 35 | 10 | 9 | 20 | 500 |
| 430589 | 60 | 15 | 21 | 20 | 500 |
| 430591 | 100 | 20 | 55 | 20 | 500 |
| 430597 | 150 | 25 | 152 | 5 | 60 |
| 431111† | 245 | 25 | 500 | 4 | 16 |

*Note: Dish style (mm) = actual growth surface diameters: 35 mm dish = 34.4 mm; 60 mm dish = 52.1 mm; 100 mm dish = 83.8 mm; 150 mm dish = 139.1 mm.
†Cat. No. 431111 is a square dish with interior bottom plate dimensions of 224 mm x 224 mm.

### Expected Cell Yields and Recommended Medium Volumes

| Corning Dishes | Approximate Growth Area (cm²) | Average Cell Yield* | Recommended Medium Volume (mL)† |
|---|---|---|---|
| 35 mm | 9 | $9.0 \times 10^5$ | 1.8 - 2.7 |
| 60 mm | 21 | $2.1 \times 10^6$ | 4.2 - 6.3 |
| 100 mm | 55 | $5.5 \times 10^6$ | 11 - 16.5 |
| 150 mm | 152 | $1.52 \times 10^7$ | 30.4 - 45.6 |
| 245 mm (square) | 500 | $5.0 \times 10^7$ | 100 - 150 |

*Assumes an average yield of $1 \times 10^5$ cells/cm² from a 100% confluent culture.
†Yields from many cell types can be lower than this.

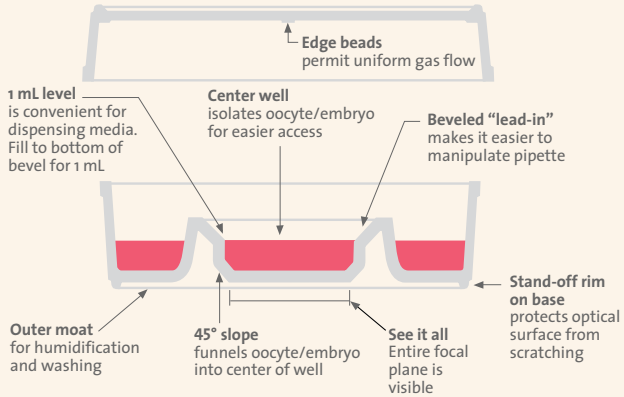
### *Cell Culture Dish Application Tips*

- The 150 and 245 mm culture dishes make excellent carriers and incubator trays for 35 and 60 mm dishes. This helps prevent spills and reduces opportunities for contamination.
- Corning recommends 0.2 to 0.3 mL of medium per cm² of growth area.

## Costar® IVF Culture Dish

**3260** IVF Culture Dish

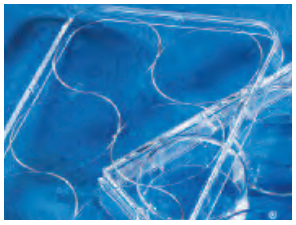
- 20 mm center well
- Inner well holds 3 mL of medium while the outer well holds 10 mL
- Treated for optimal cell attachment
- Sterilized by gamma radiation
- Certified nonpyrogenic
- For research use only



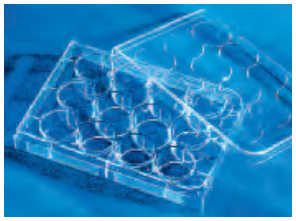

### Costar IVF Culture Dish Ordering Information

| Cat. No. | Size (mm) | Description (mm) | Center Well (mm) | Qty/Pk | Qty/Cs |
|---|---|---|---|---|---|
| 3260 | 60 | 60 x 15 | 20 | 20 | 500 |

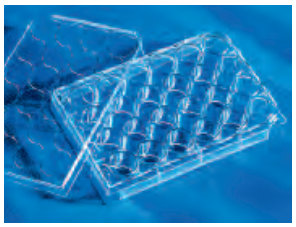
# Multiple Well Plates



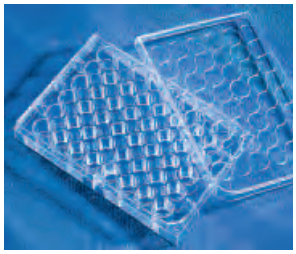
**3516** 6 Well Culture Plate



**3513** 12 Well Culture Plate



**3524** 24 Well Culture Plate



**3548** 48 Well Culture Plate

## Costar® 6, 12, 24, and 48 Well Cell Culture Plates

- Corning® CellBIND® Surface is a novel cell culture treatment that increases surface wettability for more even and consistent cell attachment
- Ultra-Low Attachment plates feature a covalently bound hydrogel layer that minimizes cell attachment, protein absorption and cellular activation
- Nonreversible lids with condensation rings to reduce contamination, uniform footprint for ease in stacking
- Individual alphanumerical codes for well identification, flat bottoms
- Treated for optimal cell attachment (except where noted)
- Sterilized by gamma irradiation, certified nonpyrogenic

### 6, 12, 24, and 48 Well Plates Ordering Information

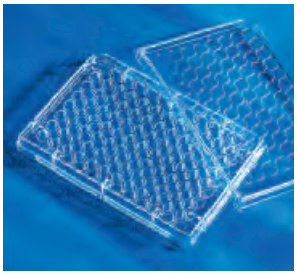
| Cat. No. | Surface | Plate Type | Qty/Pk | Qty/Cs |
|---|---|---|---|---|
| *6 Well Plates* | | | | |
| 3335 | Corning® CellBIND® Surface | Standard clear plate | 5 | 50 |
| 3506 | TC | Standard clear plate | 5 | 100 |
| 3516 | TC | Standard clear plate | 1 | 50 |
| 3471 | Ultra-Low Attachment | Standard clear plate with hydrogel* | 1 | 24 |
| *12 Well Plates* | | | | |
| 3336 | Corning CellBIND Surface | Standard clear plate | 5 | 50 |
| 3512 | TC | Standard clear plate | 5 | 100 |
| 3513 | TC | Standard clear plate | 1 | 50 |
| *24 Well Plates* | | | | |
| 3337 | Corning CellBIND Surface | Standard clear plate | 5 | 50 |
| 3524 | TC | Standard clear plate | 1 | 100 |
| 3526 | TC | Standard clear plate | 1 | 50 |
| 3527 | TC | Standard clear plate | 5 | 100 |
| 3473 | Ultra-Low Attachment | Standard plate with hydrogel* | 1 | 24 |
| *48 Well Plates* | | | | |
| 3338 | Corning CellBIND Surface | Standard clear plate | 5 | 50 |
| 3548 | TC | Standard clear plate | 1 | 100 |

*This covalently bonded hydrogel surface minimizes cell attachment, protein absorption, enzyme activation and cellular activation. The surface is noncytotoxic, biologically inert and nondegradable.

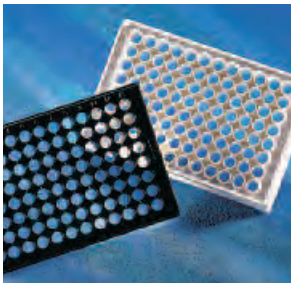
### Well Dimensions, Expected Cell Yields, and Recommended Medium Volumes

| | | Single Well Only | | | | Entire Plate | | |
|---|---|---|---|---|---|---|---|---|
| Cell Culture Plates | Well Diameter (Bottom, mm) | Approx. Growth Area ($cm^2$) | Average Cell Yield* | Total Well Volume (mL) | Working Volume (mL) | Approx. Growth Area ($cm^2$) | Average Cell Yield* | Working Volume (mL) |
| 6 well | 34.8 | 9.5 | $9.5 \times 10^5$ | 16.8 | 1.9 - 2.9 | 57 | $5.7 \times 10^6$ | 11.4 - 17.1 |
| 12 well | 22.1 | 3.8 | $3.8 \times 10^5$ | 6.9 | 0.760 - 1.14 | 45.6 | $4.56 \times 10^6$ | 9.1 - 13.7 |
| 24 well | 15.6 | 1.9 | $1.9 \times 10^5$ | 3.4 | 0.380 - 0.570 | 45.6 | $4.56 \times 10^6$ | 9.1 - 13.7 |
| 48 well | 11 | 0.95 | $9.5 \times 10^4$ | 1.6 | 0.19 - 0.285 | 45.6 | $38.4 \times 10^6$ | 9.1 - 13.7 |

*Assumes an average yield of $1 \times 10^5$ cells/$cm^2$ from a 100% confluent culture. Yields from many cell types can be lower than this.



**3596** 96 Well Culture Plate



**3610 and 3603**
96 Well Clear Bottom Plates

**3917 and 3916**
96 Well Solid Plates

**3872XX1**
96 Well Plate with Ultra-Web Synthetic Surface

## Corning® and Costar® 96 Well Cell Culture Plates

- Corning CellBIND® Surface is a novel cell culture treatment that increases surface wetability for more even and consistent cell attachment
- Ultra-Low Attachment plates feature a covalently bound hydrogel layer that minimizes cell attachment, protein absorption and cellular activation
- Ultra-Web™ Synthetic Surface is composed of electrospun polyamide nanofibers, creating a culturing substrate that mimics structural components within the basement membrane or extracellular matrix.
- Corning Poly-D-Lysine (PDL) microplates are coated with PDL (molecular weight range of 70 to 150 kDa) giving the surface a net positive charge for better cell attachment.
- Nonreversable lids with condensation rings to reduce contamination (except where noted)
- Treated for optimal cell attachment (except where noted)
- Sterilized by gamma radiation, certified nonpyrogenic
- Individual alphanumeric codes for well identification, flat bottoms (except where noted)

Black plates are designed to lower background in fluorescent assays and reduce crosstalk. White plates are designed for luminescent assays. Some plates have the Corning CellBIND surface or a poly-D-lysine coating to enhance cell attachment. Corning offers many other 96 well plate types for applications other than cell culture; for a complete listing, check the catalog at **www.corning.com/lifesciences.**

## Corning® Assay Surface Properties and Applications

| Corning Surface | Applications | Binding Interaction | Sample Properties |
|---|---|---|---|
| Standard Tissue Culture Surface | • Assays using standard attachment dependent cell lines | Hydrophilic and ionic interactions (negatively charged) | Allows cell attachment and binding |
| Corning CellBIND Surface | • Assays for difficult to attach cells<br>• Help cells stay attached during washing steps | Hydrophilic and ionic interactions (negatively charged) | Enhances cell attachment uniformity and binding to polystyrene |
| Poly-D-Lysine-Coated Surface | • Assays for difficult to attach cells<br>• Help cells stay attached during washing steps | Hydrophilic and ionic interactions (positively charged) | Enhances cell attachment and binding |
| Ultra-Low Attachment Surface | • Assays where preventing cell attachment is required<br>• Hybridoma production and clonal isolation by limiting dilution | Nonionic hydrogel layer reduces or eliminates ionic and hydrophobic binding | Prevents or reduces cell attachment and binding |
| Ultra-Web Surface | • Assays where cell attachment or performance is enhanced by using a 3D surface | Hydrophilic interactions on a 3D surface | Enhances cell attachment and performance |
| Ultra-Web Polyamine Surface | • Assays where cell attachment or performance is enhanced by using a 3D surface | Hydrophilic and ionic interactions (positively charged) on a 3D surface | Enhances cell attachment and performance |

## Well Geometry


### *Cell Culture Tip*

Check the Corning web site (**www.corning.com/lifesciences**) for technical cell culture application bulletins.

## 96 Well Plate Ordering Information

| Cat. No. | Surface | Description | Qty/ Pk | Qty/ Cs |
|---|---|---|---|---|
| ***Clear Plates*** | | | | |
| 3300 | Corning® CellBIND® Surface | Standard clear plate | 5 | 50 |
| 3596 | TC | Standard clear plate | 1 | 50 |
| 3997 | TC | Standard clear plate | 10 | 50 |
| 3598 | TC | Standard clear plate | 5 | 100 |
| 3599 | TC | Standard clear plate | 1 | 100 |
| 3585 | TC | Standard clear plate with special low evaporation lid | 5 | 50 |
| 3595 | TC | Standard clear plate with special low evaporation lid | 1 | 50 |
| 3696 | TC | 96 well half area, flat bottom clear plate | 1 | 50 |
| 3697 | TC | 96 well half area clear plate | 20 | 100 |
| 3790 | Not Treated | 96 well round bottom, polypropylene plate with polystyrene lid | 1 | 50 |
| 3799 | TC | 96 well round bottom clear plate | 1 | 50 |
| 3894 | TC | 96 well V-bottom clear plate | 1 | 50 |
| 3665 | Poly-D-lysine | Standard clear plate, coated | 20 | 100 |
| 9102 | TC | 8-well strip plate, assembled 12 strips per plate | 1 | 50 |
| 3474 | Ultra-Low Attachment | Standard clear plate with hydrogel* | 1 | 24 |
| 7007 | Ultra-Low Attachment | 96 well round bottom plate with hydrogel* | 1 | 24 |
| ***White Plates*** | | | | |
| 3917 | TC | Solid white plate | 20 | 100 |
| 3362 | TC | Solid white plate without lid | 25 | 100 |
| 3688 | TC | 96 well half area solid white plate | 20 | 100 |
| 3885 | TC | 96 well half area white plate with clear bottom | 20 | 100 |
| 3610 | TC | White plate with clear bottom | 1 | 48 |
| 3903 | TC | White plate with clear bottom | 20 | 100 |
| 3666 | Poly-D-lysine | White plate with clear bottom | 20 | 100 |
| ***Black Plates*** | | | | |
| 3340 | Corning CellBIND Surface | Black plate with clear bottom | 5 | 50 |
| 3872XX1 | Ultra-Web™ Synthetic Surface | Black plate with clear bottom, with lid | 5 | 10 |
| 3873XX1 | Ultra-Web Synthetic Polyamine Surface | Black plate with clear bottom, with lid | 5 | 10 |
| 3916 | TC | Solid black plate | 20 | 100 |
| 3875 | TC | 96 well half area solid black plate | 20 | 100 |
| 3882 | TC | 96 well half area black plate with clear bottom | 20 | 100 |
| 3603 | TC | Black plate with clear bottom | 1 | 48 |
| 3904 | TC | Black plate with clear bottom | 20 | 100 |
| 3667 | Poly-D-lysine | Black plate with clear bottom | 25 | 100 |
| 3614 | TC | Black plate with special optics, ultrathin, clear bottom, without lid | 20 | 100 |
| ***Lids and Tape*** | | | | |
| 3099 | – | Universal lid, sterile | 25 | 50 |
| 3345 | – | Breathable Sealing tape, sterile | 50 | 500 |
| 3930 | – | Rigid styrene lid with condensation rings, sterile | 1 | 100 |
| 3931 | – | Rigid styrene lid with condensation rings, sterile | 25 | 50 |

*This covalently bonded hydrogel surface minimizes cell attachment, protein absorption, enzyme activation and cellular activation. The surface is noncytotoxic, biologically inert and nondegradable.

## 96 Well Cell Culture Plates

### Well Dimensions, Expected Cell Yields, and Recommended Medium Volume

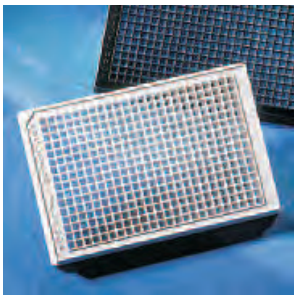
| Cell Culture Plates | Well Diameter (Bottom, mm) | Single Well Only: Approx. Growth Area ($cm^2$) | Single Well Only: Average Cell Yield* | Single Well Only: Total Well Volume (mL) | Single Well Only: Working Volume (mL) | Entire Plate: Approx. Growth Area ($cm^2$) | Entire Plate: Average Cell Yield* | Entire Plate: Working Volume (mL) |
|---|---|---|---|---|---|---|---|---|
| 96 well flat bottom | 6.4 | 0.32 | $3.2 \times 10^4$ | 0.36 | 0.100 - 0.200 | 30.7 | $3.07 \times 10^6$ | 9.6 - 19.2 |
| 96 well round bottom | 6.4 | NA† | NA† | 0.33 | 0.100 - 0.200 | NA† | NA† | 9.6 - 19.2 |
| 96 well V bottom | 6.4 | 0.38 | $3.8 \times 10^4$ | 0.29 | 0.100 - 0.200 | 36.5 | $3.65 \times 10^6$ | 9.6 - 19.2 |
| 96 half area | 4.5 | 0.16 | $1.6 \times 10^4$ | 0.19 | 0.050 - 0.100 | 15.4 | $1.54 \times 10^6$ | 4.8 - 9.6 |

*Assumes an average yield of $1 \times 10^5$ cells/$cm^2$ from a 100% confluent culture. Yields from many cell types can be lower than this.
†Because these wells are round, the surface area available for cell attachment is dependent on the medium volume used.

## 384 Well Cell Culture Plates

- Flat bottoms and lids
- New low volume plates have only a 50 µL total well volume, with recommended working volume of 5 to 40 µL
- Treated for optimal cell attachment
- Sterilized by gamma radiation
- Certified nonpyrogenic

Black plates are designed to lower background in fluorescent assays and reduce crosstalk. White plates are designed for luminescent assays. Some plates have the Corning® CellBIND® Surface or a poly-D-lysine coating to enhance cell attachment. Corning offers many other 384 well plate types for applications other than cell culture; for a complete listing, check the catalog at **www.corning.com/lifesciences**.



**3707 and 3712**
384 Well Clear Bottom Plates

### 384 Well Cell Culture Plate Ordering Information

| Cat. No. | Description | Surface | Qty/Pk | Qty/Cs |
|---|---|---|---|---|
| *Clear Plates* | | | | |
| 3701 | Standard clear plate, low flange | TC | 20 | 100 |
| 3662 | Standard clear plate | Poly-D-lysine | 25 | 100 |
| *White Plates* | | | | |
| 3570 | Solid white plate | TC | 10 | 50 |
| 3707 | White plate with clear bottom | TC | 20 | 100 |
| 3663 | White plate with clear bottom | Poly-D-lysine | 25 | 100 |
| 3826 | Solid white plate, low volume | TC | 10 | 50 |
| *Black Plates* | | | | |
| 3571 | Solid black plate, low flange | TC | 10 | 50 |
| 3712 | Black plate with clear bottom | TC | 20 | 100 |
| 3664 | Black plate with clear bottom | Poly-D-lysine | 25 | 100 |
| 3683 | Black plate with clear bottom | Corning CellBIND Surface | 10 | 50 |
| 3542 | Low volume, black plate with clear bottom | TC | 10 | 50 |
| 3822 | Low volume, solid black plate | TC | 10 | 50 |
| 3985 | Black optical imaging plate with clear bottom | TC | 20 | 100 |

### Well Dimensions, Expected Cell Yields, and Recommended Medium Volumes

| Cell Culture Plates | Well Diameter (Bottom, mm) | Single Well Only: Approx. Growth Area ($cm^2$) | Single Well Only: Average Cell Yield* | Single Well Only: Total Well Volume (mL) | Single Well Only: Working Volume (mL) | Entire Plate: Approx. Growth Area ($cm^2$) | Entire Plate: Average Cell Yield* | Entire Plate: Working Volume (mL) |
|---|---|---|---|---|---|---|---|---|
| Standard 384 Well | 2.7 x 2.7† | 0.056 | $5.6 \times 10^3$ | 0.125 | 0.025 - 0.050 | 21.5 | $2.15 \times 10^6$ | 9.6 - 19.2 |
| Low Volume 384 Well | 2.0 | 0.031 | $3.1 \times 10^3$ | 0.050 | 0.005 - 0.040 | 12.0 | $1.2 \times 10^6$ | 1.9 - 15.3 |

*Assumes an average yield of $1 \times 10^5$ cells/$cm^2$ from a 100% confluent culture. Yields from many cell types can be lower than this.
†These wells are square.

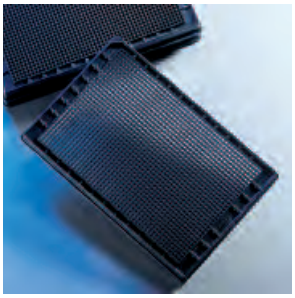
## 1536 Well Cell Culture Plates

- Superior performance compared to competitor plates: lower CVs, higher signal-to-noise ratios, and lower background fluorescence
- Compatible with bar coding, standard readers and automation
- Recommended working volume of up to 8 µL
- Treated for optimal cell attachment
- Flat bottoms and lids
- Sterilized by gamma radiation
- Certified nonpyrogenic

Black plates are designed to lower background in fluorescent assays and reduce crosstalk. White plates are designed for luminescent assays. Corning offers other 1536 well plate types for applications other than cell culture; for a complete listing, check the catalog at **www.corning.com/lifesciences**.

### 1536 Well Cell Culture Plate Ordering Information

| Cat. No. | Description | Surface | Qty/Pk | Qty/Cs |
|---|---|---|---|---|
| *Clear Plates* | | | | |
| 3853 | Standard clear plate | TC | 20 | 100 |
| *White Plates* | | | | |
| 3727 | Solid white plate | TC | 10 | 50 |
| 3855 | Solid white plate, low volume | TC | 20 | 100 |
| *Black Plates* | | | | |
| 3726 | Solid black plate | TC | 10 | 50 |
| 3893 | Black clear bottom plate | TC | 10 | 50 |
| 3854 | Solid black plate, low volume | TC | 20 | 100 |



**3893** 1536 Well Culture Plates

### Well dimensions, Expected Cell Yields, and Recommended Medium Volumes

| Cell Culture Plates | Well Diameter (Bottom, mm) | Single Well Only: Approx. Growth Area ($cm^2$) | Single Well Only: Average Cell Yield* | Single Well Only: Total Well Volume (µL) | Single Well Only: Working Volume (µL) | Entire Plate: Approx. Growth Area ($cm^2$) | Entire Plate: Average Cell Yield* | Entire Plate: Working Volume (mL) |
|---|---|---|---|---|---|---|---|---|
| 1536 Well Clear Flat Bottom | 1.63 x 1.63 | 0.025 | $2.5 \times 10^3$ | 12.5 | 5 - 8 | 38.3 | $3.8 \times 10^6$ | 7.7 - 15.4 |
| 1536 Well Solid Flat Bottom | 1.53 x 1.53 | 0.023 | $2.3 \times 10^3$ | 12.5 | 5 - 8 | 35.3 | $3.5 \times 10^6$ | 7.7 - 15.4 |

*Assumes an average yield of $1 \times 10^5$ cells/$cm^2$ from a 100% confluent culture. Yields from many cell types can be lower than this.

# Transwell® Permeable Supports

Transwell cell culture inserts are convenient, easy-to-use permeable support devices for the study of both anchorage-dependent and anchorage-independent cell lines

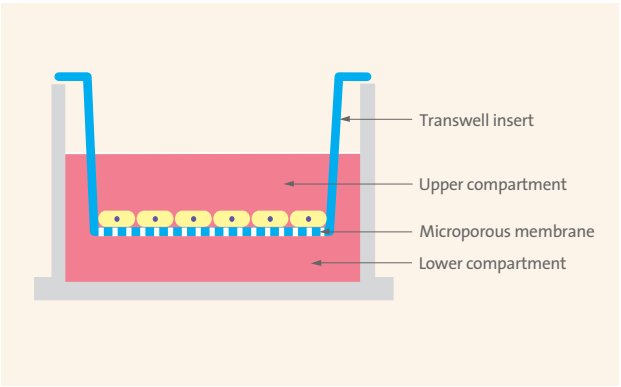
- Designed to produce a cell culture environment that closely resembles the *in vivo* state
- Allows polarized cells to feed basolaterally and thereby carry out metabolic activities in a more natural fashion
- Unique patented self-centered hanging design prevents medium wicking between the insert and outer well
- Permits access to the lower compartment through windows in the insert wall
- Suspended design allows for undamaged co-culturing of cells in the lower compartment
- Available in a range of pore sizes and different membranes to satisfy diverse experimental requirements

### Characteristics of Transwell Membranes

| Characteristics | Polyester (PET) | Polycarbonate | PTFE/Collagen |
|---|---|---|---|
| Optical properties | Clear | Translucent | Clear when wet |
| Cell visibility | Good | Poor | Cell outlines |
| Tissue culture treated | Yes | Yes | No |
| Membrane thickness | 10 µm | 10 µm | 50 µm |
| Matrix/ECM coatable | Yes | Yes | Yes |
| Collagen treated | No | No | Yes |
| Available Pore Sizes (µm) | 0.4, 1.0, 3.0, 8.0 | 0.4, 3.0, 5.0, 8.0 | 0.4, 3.0 |

### Chemical Compatibility

All of the Transwell membranes are compatible with histological fixatives including methanol and formaldehyde. The polyester Transwell membranes have the best overall chemical resistance. These membranes (but not the polystyrene housings) are compatible with many alcohols, amines, esters, ethers, ketones, oils and some solvents, including many halogenated hydrocarbons and DMSO but are not recommended for use with strong acids and bases.




### Pore Density

Of the three types of Transwell membranes, only the PTFE does not have a defined pore density because it is a tortuous path membrane. The two membranes with a nominally defined pore density are polycarbonate and polyester. The polyester Transwell membranes do not have as high a pore density as the polycarbonate Transwell but have better optical clarity as a result. The nominal pore densities for Corning® Polycarbonate and Polyester (PET) membranes are given in the following table.

***Transwell Permeable Supports Tip***

Check the Corning web site **(www.corning.com/lifesciences)** for an extensive list of references, listed by application, citing the use of Transwell permeable supports in cell culture research.

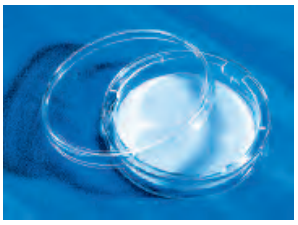
### *Packaging of Transwell Polycarbonate and Polyester Membrane Inserts*

The cell culture inserts come prepackaged in the appropriate multiple well plate as follows:

- 24 mm diameter inserts are packaged 6 inserts in a 6 well plate, four 6 well plates per case, for a total of 24 inserts.
- 12 mm diameter inserts are packaged 12 inserts in a 12 well plate, four 12 well plates per case, for a total of 48 inserts.
- 16.5 mm diameter inserts are packaged 12 inserts in a 24 well plate, four 24 well plates per case, for a total of 48 inserts.

All Transwell-COL collagen coated inserts are individually packaged and each case includes the appropriate multiple well plate.

**3401** 12 mm Polycarbonate Transwell Insert



**3419** 75mm Polycarbonate Transwell Insert

### Nominal Pore Densities for Transwell Polyester and Polycarbonate Membranes

| Pore Size | Nominal Pore Density: Polycarbonate Membrane Transwell (pores/cm²) | Nominal Pore Density: Transwell-Clear Polyester Membrane (pores/cm²) |
|---|---|---|
| 0.4 µm | $1 \times 10^8$ | $4 \times 10^6$ |
| 1.0 µm | n/a | $1.6 \times 10^6$ |
| 3.0 µm | $2 \times 10^6$ | $2 \times 10^6$ |
| 5.0 µm | $4 \times 10^5$ | n/a |
| 8.0 µm | $1 \times 10^5$ | $1 \times 10^5$ |

### Growth Areas and Recommended Medium Volumes for Transwell Permeable Supports

| Multiple Well Plate or Dish Type | Transwell Insert Diameter (mm) | Insert Membrane Growth Area (cm²) | Volume Added per Plate Well | Volume Added to Inside of Transwell Insert (mL) |
|---|---|---|---|---|
| HTS 96 | 4.26 | 0.143 | 0.235 | 0.075 |
| HTS 24 | 6.5 | 0.33 | 0.6 | 0.1 |
| 24 well | 6.5 | 0.33 | 0.6 | 0.1 |
| 12 well | 12 | 1.12 | 1.5 | 0.5 |
| 6 well | 24 | 4.67 | 2.6 | 1.5 |
| 100 mm dish | 75 | 44 | 13 | 9 |

## Transwell® Polycarbonate Membrane Insert

- 10 µm thick translucent membrane
- Pore sizes ranging from 0.4 µm to 8 µm diameters
- Treated for optimal cell attachment
- Supplied in multiple well plates
- Membrane must be stained for cell visibility
- Sterilized by gamma radiation

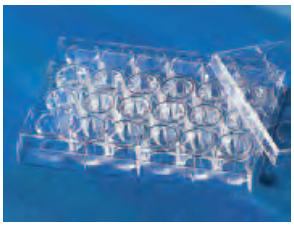
### Transwell Polycarbonate Membrane Permeable Support Ordering Information

| Cat. No. | Membrane Diameter (mm) | Growth Surface Area (cm²) | Membrane Pore Size (µm) | Tissue Culture Treated | Inner Packaging* | Inserts/ Cs |
|---|---|---|---|---|---|---|
| 3413 | 6.5 | 0.33 | 0.4 | Yes | 12/plate* | 48 |
| 3415 | 6.5 | 0.33 | 3.0 | Yes | 12/plate* | 48 |
| 3421 | 6.5 | 0.33 | 5.0 | Yes | 12/plate* | 48 |
| 3422 | 6.5 | 0.33 | 8.0 | Yes | 12/plate* | 48 |
| 3401 | 12 | 1.12 | 0.4 | Yes | 12/plate | 48 |
| 3402 | 12 | 1.12 | 3.0 | Yes | 12/plate | 48 |
| 3412 | 24 | 4.67 | 0.4 | Yes | 6/plate | 24 |
| 3414 | 24 | 4.67 | 3.0 | Yes | 6/plate | 24 |
| 3428 | 24 | 4.67 | 8.0 | Yes | 6/plate | 24 |
| 3419 | 75 | 44 | 0.4 | Yes | 1/dish | 12 |
| 3420 | 75 | 44 | 3.0 | Yes | 1/dish | 12 |

*6.5 mm membrane diameter are packaged 12 inserts in a 24 well plate, 4 plates per case.

## Corning® Transwell® Invasion Inserts

**Transwell Polycarbonate Membrane Insert Coated with Cultrex® Basement Membrane Extract**



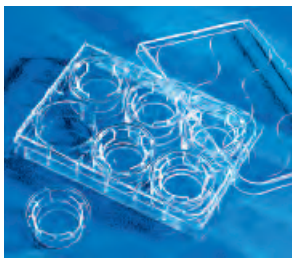
**3458** 6.5 mm Polycarbonate Transwell Cultrex Insert

- 8 µm pore size membrane, 10 µm thick
- Coated with Cultrex basement membrane extract
- For cell invasion assays
- Supplied in 2-24 well plates, 12 inserts per plate

### Transwell Cultrex Polycarbonate Membrane Permeable Support Ordering Information

| Cat. No. | Membrane Diameter (mm) | Growth Surface Area (cm²) | Membrane Pore Size (µm) | Tissue Culture Treated | Inner Packaging | Inserts/ Cs |
|---|---|---|---|---|---|---|
| 3458 | 6.5 | 0.33 | 0.8 | Yes | 12/plate | 24 |

## Transwell-Clear Polyester Membrane Insert



**3450** 24 mm Transwell-Clear Insert

- 10 µm transparent membrane
- Treated for optimal cell attachment
- Excellent visibility under phase contrast microscopy
- Supplied in multiple well plates
- Sterilized by gamma radiation

### Transwell-Clear Insert Ordering Information

| Cat. No. | Membrane Diameter (mm) | Growth Surface Area (cm²) | Membrane Pore Size (µm) | Inner Packaging* | Inserts/Cs |
|---|---|---|---|---|---|
| 3450 | 24 | 4.67 | 0.4 | 6/plate | 24 |
| 3452 | 24 | 4.67 | 3.0 | 6/plate | 24 |
| 3460 | 12 | 1.12 | 0.4 | 12/plate | 48 |
| 3462 | 12 | 1.12 | 3.0 | 12/plate | 48 |
| 3470 | 6.5 | 0.33 | 0.4 | 12/plate* | 48 |
| 3472 | 6.5 | 0.33 | 3.0 | 12/plate* | 48 |

*6.5 mm membrane diameter are packaged 12 inserts in a 24 well plate, 4 plates per case.

## Transwell-COL Collagen-Coated Membrane Insert

**3491** 24 mm Transwell-COL Collagen-Coated Insert

- Transparent collagen treated PTFE membrane
- Promotes cell attachment and spreading
- Equimolar mixture of types I and III collagen
- Individually packaged
- Multiple well plates included in each case
- Supplied sterile

### Transwell-COL Insert Ordering Information

| Cat. No. | Membrane Diameter (mm) | Growth Surface Area (cm²) | Membrane Pore Size (µm) | Inner Packaging | Multiple Well Plate | Inserts/Cs |
|---|---|---|---|---|---|---|
| 3491 | 24 | 4.67 | 0.4 | Individual | 6 well | 24 |
| 3492 | 24 | 4.67 | 3.0 | Individual | 6 well | 24 |
| 3493 | 12 | 1.12 | 0.4 | Individual | 12 well | 24 |
| 3494 | 12 | 1.12 | 3.0 | Individual | 12 well | 24 |
| 3495* | 6.5 | 0.33 | 0.4 | Individual | 24 well | 24 |
| 3496* | 6.5 | 0.33 | 3.0 | Individual | 24 well | 24 |

*Includes twenty-four 6.5 mm inserts packaged separately with two 24 well plates.

## Snapwell™ Inserts

**3407** 12 mm Snapwell Inserts

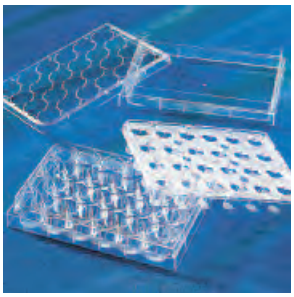
- A modified Transwell permeable support containing a 12 mm diameter membrane supported by a detachable ring
- Once cells are grown to confluence on the Snapwell insert, the ring can be placed in a vertical or horizontal diffusion chamber*
- Sterilized by gamma radiation
- Packaged in 6 well plates

### Snapwell Insert Ordering Information

| Cat. No. | Membrane Pore Size (µm) | Membrane | Inner Packaging | Inserts/Cs |
|---|---|---|---|---|
| 3407 | 0.4 | Polycarbonate | 6/plate | 24 |
| 3802 | 3.0 | Polycarbonate | 6/plate | 24 |
| 3801 | 0.4 | Clear Polyester | 6/plate | 24 |

*Diffusion Chambers are available through Harvard Apparatus (*www.harvardapparatus.com*)

## Corning® HTS Transwell®-24 Well Permeable Supports

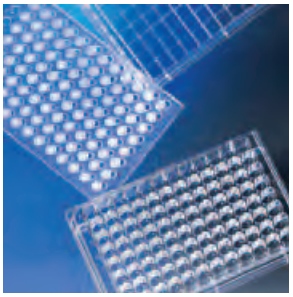


HTS Transwell-24 Well Permeable Support

- The HTS Transwell-24 Well Permeable Support has an array of 24 wells with membrane inserts connected by a rigid, robotics-friendly tray that enables all 24 Transwell supports to be handled as a single unit
- Cell growth area is 0.33 $cm^2$/well
- Choice of either polyester (PET) membrane (0.4 µm pore size) or polycarbonate (PC) membrane (0.4 µm, 3.0 µm pore sizes)
- Treated for optimal cell attachment
- Individual pack has 2 HTS Transwell-24 units loaded into two open reservoir trays and two individually wrapped 24 well plates
- Bulk pack has 12 HTS Transwell-24 units loaded into 24 well plates only. Reservoirs may be purchased separately
- Sterilized by gamma radiation

### HTS Transwell-24 Well Permeable Supports Ordering Information

| Cat. No. | Description | Membrane Pore Size (µm) | Membrane | Qty/Pk | Plates/Cs |
|---|---|---|---|---|---|
| 3396 | HTS Transwell-24, individual | 0.4 | PC | 1 | 2 |
| 3397 | HTS Transwell-24, bulk | 0.4 | PC | 12 | 12 |
| 3398 | HTS Transwell-24, individual | 3.0 | PC | 1 | 2 |
| 3399 | HTS Transwell-24, bulk | 3.0 | PC | 12 | 12 |
| 3395 | HTS Transwell nontreated reservoir | – | – | 12 | 48 |
| 3378 | HTS Transwell-24, bulk | 0.4 | PET | 12 | 12 |
| 3379 | HTS Transwell-24, individual | 0.4 | PET | 1 | 2 |



HTS Transwell-96 System

## Corning® HTS Transwell®-96 Well Permeable Support Systems and Plates

- The HTS Transwell-96 Well Permeable Support has an array of 96 wells with membrane inserts connected by a rigid, robotics-friendly tray that enables all 96 inserts to be handled as a single unit
- Choice of either polyester (PET) membrane (1.0 µm, 8.0 µm pore sizes) or polycarbonate (PC) membrane (0.4 µm, 3.0 µm, 5.0 µm pore sizes)
- 0.143 $cm^2$ membrane area per well, providing 20 to 50% more surface area for cell growth than other commercially available systems
- Large apical and basolateral access ports allow efficient media sampling and facilitate automated or manual access
- Optimized for automation, with multichannel feeder ports, improved gripping surface, and standard bar codes
- The reservoir plate allows for simultaneous feeding of 96 wells and comes with a removable media stabilizer to reduce the risk of spills during handling
- The receiver plate isolates each well to enable 96 individual assays
- Sterilized by gamma radiation
- The HTS Transwell-96 Systems (0.4 µm PC and 1.0 µm PET) are packaged with the 96 well insert plate in a reservoir plate and includes the 96 well receiver plate with lid.
- The HTS Transwell-96 Well Plates (3.0 and 5.0 µm PC, 8.0 µm PET) are packaged with the 96 well insert plate in the 96 well receiver plate with lid. Reservoir plates may be purchased separately.

### HTS Transwell®-96 Well Permeable Supports Ordering Information

| Cat. No. | Description | Membrane Pore Size (µm) | Membrane | Qty/ Pk | Qty/ Cs |
|---|---|---|---|---|---|
| 3381 | HTS Transwell-96 System, reservoir and receiver plates with 2 lids | 0.4 | PC | 1 | 1 |
| 3391 | HTS Transwell-96 System, reservoir and receiver plates with 2 lids | 0.4 | PC | 1 | 5 |
| 3380 | HTS Transwell-96 System, reservoir and receiver plates with 2 lids | 1.0 | PET | 1 | 1 |
| 3392 | HTS Transwell-96 System, reservoir and receiver plates with 2 lids | 1.0 | PET | 1 | 5 |
| 3385 | HTS-Transwell-96 Well Plate, receiver plate and lid, individual | 3.0 | PC | 1 | 2 |
| 3386 | HTS-Transwell-96 Well Plate, receiver plate and lid, bulk | 3.0 | PC | 4 | 8 |
| 3387 | HTS-Transwell-96 Well Plate, receiver plate and lid, bulk | 5.0 | PC | 4 | 8 |
| 3388 | HTS-Transwell-96 Well Plate, receiver plate and lid, individual | 5.0 | PC | 1 | 2 |
| 3374 | HTS-Transwell-96 Well Plate, receiver plate and lid, individual | 8.0 | PET | 1 | 2 |
| 3384 | HTS-Transwell-96 Well Plate, receiver plate and lid, bulk | 8.0 | PET | 4 | 8 |
| 3382 | HTS Transwell-96 receiver plate with lid, tissue culture treated | n/a | n/a | 10 | 10 |
| 3383 | HTS Transwell-96 reservoir plate with removable media stabilizer and lid, not treated | n/a | n/a | 10 | 10 |
| 3583 | HTS Transwell-96 black receiver plate with lid, tissue culture treated | n/a | n/a | 10 | 10 |

## Netwell™ Inserts

Netwell Inserts

- Costar® Netwell inserts have polyester mesh bottoms attached to polystyrene rings or housing
- They are used as tissue carriers, supports and strainers for culture of small organs, tissue slices or explants at the air-media interface
- Handy carrier for immunocytochemical staining of tissue slices (see accessories below)
- Provides coarse filtration of tissue homogenates, cell suspensions and microcarriers
- Available in two mesh sizes and diameters
- Supplied sterile and preloaded in 6- or 12-well plates
- 24 mm Netwell inserts fit in Corning® 50 mL plastic centrifuge tubes

### Netwell Inserts Ordering Information

| Cat. No. | Membrane Dia. (mm) | Polyester Membrane Mesh Size (µm) | Sterile | Inner Packaging | Inserts/ Cs |
|---|---|---|---|---|---|
| 3477 | 15 | 74 | Yes | 12/plate | 48 |
| 3478 | 15 | 500 | Yes | 12/plate | 48 |
| 3479 | 24 | 74 | Yes | 6/plate | 48 |
| 3480 | 24 | 500 | Yes | 6/plate | 48 |

## Netwell Accessories

Netwell Accessories

- Specially designed Netwell carriers and handles allow simultaneous processing of up to 12 samples per carrier
- Polystyrene reagent trays are available in white for colorimetric reaction contrast, or black for better visibility of tissue sections
- Each carrier kit contains eight carriers and eight handles

### Netwell Accessories Ordering Information

| Cat. No. | Description | Qty/Cs |
|---|---|---|
| 3517 | Netwell Reagent Tray, black | 200 |
| 3519 | Netwell Reagent Tray, white | 200 |
| 3520 | Netwell Carrier Kit, 15 mm | 8 |
| 3521 | Netwell Carrier Kit, 24 mm | 8 |

# Culture Tubes

## Culture Tubes

**430172** Culture Tube

- Manufactured from optically clear polystyrene
- Threaded plug seal caps prevent leakage
- Cell culture treated tubes supplied racked
- Untreated tubes provided bulk packed
- Sterilized by gamma radiation
- Certified nonpyrogenic

### Culture Tube Ordering Information

| Cat. No. | Treated | Size (mm) | Cap Style | Qty/Pk | Qty/Cs |
|---|---|---|---|---|---|
| 430157 | No | 16 x 125 | Screw Top | 25 | 500 |
| 430172 | Yes | 16 x 125 | Screw Top | 50 | 500 |

# Roller Bottles

**430849** 850 cm² Roller Bottle

### *Roller Bottle Application Tips*

- Corning recommends 0.2 to 0.3 mL of medium per cm² of growth area.
- Corning recommends setting roller rack speeds to provide 0.5 to 1.0 RPM.

**430852** Expanded Surface Roller Bottle

## Roller Bottles

- Manufactured from virgin polystyrene
- Treated for optimal cell attachment
- One piece seamless construction
- Most bottles have graduations.
- All bottles have printed lot numbers to aid in product traceability.
- Sterilized by gamma radiation
- Certified nonpyrogenic

### Roller Bottle Ordering Information

| Cat. No. | Surface | Surface Area (cm²) | Cap Style | Graduations | Qty/Pk | Qty/Cs |
|---|---|---|---|---|---|---|
| 430195 | TC | 490 | Plug Seal | No | 2 | 40 |
| 430699 | TC | 1,750 | Easy Grip | Yes | 10 | 20 |
| 430849 | TC | 850 | Easy Grip | Yes | 2 | 40 |
| 431133 | TC | 850 | Easy Grip | Yes | 20 | 20 |
| 431198 | TC | 850 | Easy Grip Vent | Yes | 2 | 40 |
| 430851 | TC | 850 | Easy Grip | Yes | 5 | 40 |
| 431318 | TC | 850 | Easy Grip | No | 20 | 80 |
| 431321 | TC | 850 | Easy Grip | Yes | 22 | 44 |
| 3907 | Corning® CellBIND® Surface | 850 | Easy Grip | Yes | 2 | 40 |
| 431329 | Corning CellBIND Surface | 850 | Easy Grip Vent | Yes | 2 | 40 |
| 431344 | Corning CellBIND Surface | 850 | Easy Grip | Yes | 22 | 44 |

## Expanded Surface Roller Bottles

- Same features as standard roller bottles
- Ribbed design provides twice the surface area with the same exterior dimensions

### Expanded Surface Roller Bottle Ordering Information

| Cat. No. | Surface | Surface Area (cm²) | Cap Style | Graduations | Qty/Pk | Qty/Cs |
|---|---|---|---|---|---|---|
| 430852 | TC | 1,700 | Easy Grip | Yes | 2 | 40 |
| 430853 | TC | 1,700 | Easy Grip | Yes | 5 | 40 |
| 431134 | Corning CellBIND Surface | 1,700 | Easy Grip | Yes | 20 | 20 |
| 431135 | TC | 1,700 | Easy Grip | Yes | 20 | 20 |
| 431191 | TC | 1,700 | Easy Grip Vent | Yes | 20 | 20 |

### Expected Cell Yields and Recommended Medium Volumes

| Corning Roller Bottles | Approximate Growth Area (cm²) | Average Cell Yield* | Recommended Medium Volume (mL) |
|---|---|---|---|
| 490 $cm^2$ roller bottle | 490 | $4.9 \times 10^7$ | 100 - 150 |
| 850 $cm^2$ roller bottle | 850 | $8.5 \times 10^7$ | 170 - 255 |
| 1700 $cm^2$ roller bottle | 1,700 | $1.7 \times 10^8$ | 340 - 510 |
| 1750 $cm^2$ roller bottle | 1,750 | $1.75 \times 10^8$ | 350 - 525 |

*Assumes an average yield of 1 x $10^5$ cells/$cm^2$ from a 100% confluent culture. Yields from many cell types can be lower than this.

**Easy Grip Cap** features large knurls designed for ergonomic handling.

**Easy Grip Vent Cap** is designed for applications requiring consistent gas exchange.

**Plug Seal Cap**, designed for use in closed systems, provides a liquid- and gas-tight seal. When loosened, this cap can be used in open systems.

## Polyethylene Roller Bottle Caps

Caps are sold separately and are available individually wrapped in either Easy Grip or Easy Grip Vent Cap designs.

| Cat. No. | Cap Style | Qty/Pk | Qty/Cs |
|---|---|---|---|
| 430698 | Easy Grip | 1 | 100 |
| 431132 | Easy Grip Vent | 1 | 300 |

**Corning is committed to partnering with you,** our customer, to provide solutions that increase your efficiency and productivity. We offer the ability to customize packaging and cap design to meet your specific requirements. Minimum order quantities apply. Please call us or contact your local Corning Office for more details. See back cover for contact information.


## HYPER*Flask*™ Cell Culture Vessel

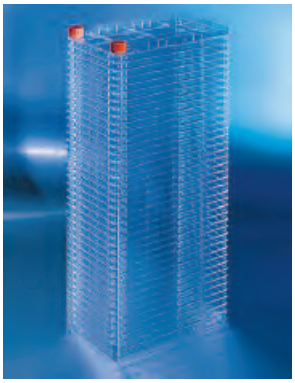
The new Corning HYPER*Flask* Vessel offers 1720 $cm^2$ growth area in the footprint of a traditional 175 $cm^2$ flask. This high yield, high performance flask utilizes a multilayered gas permeable growing surface for efficient gas exchange.

| Cat. No. | Description | Qty/ Pk | Qty/ Cs |
|---|---|---|---|
| 10010 | HYPER*Flask* Vessel, 1720 $cm^2$, Corning CellBIND Surface, Bar Code, Sterile | 4 | 4 |
| 10024 | HYPER*Flask* Vessel, 1720 $cm^2$, Corning CellBIND Surface, Bar Code, Sterile | 4 | 24 |

# Corning® CellSTACK® Culture Chambers

Corning CellSTACK Culture Chambers

- Available in Five Sizes
  - 1-Stack with 636 $cm^2$ cell growth area
  - 2-Stack with 1,272 $cm^2$ cell growth area
  - 5-Stack with 3,180 $cm^2$ cell growth area
  - 10-Stack with 6,360 $cm^2$ cell growth area
  - 40-Stack with 25,440 $cm^2$ cell growth area
- Choice of traditional surface treatment, new Corning CellBIND® Surface for enhanced cell attachment, or Ultra-Low Attachment Surface for reduced cell attachment
  - Great for reducing serum levels
  - Better attachment increases cell yields
  - May eliminate need for expensive coatings
- Greater Chamber Durability
  - Superior mechanical strength and structural integrity
  - Self venting caps prevent pressure build-up during transport
  - 100% leak tested prior to shipping
- Greater Cleanliness
  - Improved assembly procedures reduce particulates
  - Certified nonpyrogenic and sterilized by gamma irradiation
- Continuous Supply Reliability
  - Manufactured in USA under GMP conditions
- Easier to Use
  - Larger openings with threaded closures and vented caps
  - Footprint identical to competitor's product



CellSTACK Chamber, 40-Stack

### Corning CellSTACK Culture Chambers Ordering Information

| Cat. No. | Surface | Growth Area ($cm^2$) | Description | Qty/ Pk | Pk/ Cs |
|---|---|---|---|---|---|
| 3330 | Corning CellBIND Surface | 636 | CellSTACK-1 Chamber | 1 | 8 |
| 3268 | TC | 636 | CellSTACK-1 Chamber | 1 | 8 |
| 3310 | Corning CellBIND Surface | 1,272 | CellSTACK-2 Chamber | 1 | 5 |
| 3269 | TC | 1,272 | CellSTACK-2 Chamber | 1 | 5 |
| 3311 | Corning CellBIND Surface | 3,180 | CellSTACK-5 Chamber | 1 | 2 |
| 3319 | TC | 3,180 | CellSTACK-5 Chamber | 1 | 2 |
| 3313 | TC | 3,180 | CellSTACK-5 Chamber | 1 | 8 |
| 3320 | Corning CellBIND Surface | 6,360 | CellSTACK-10 Chamber | 1 | 6 |
| 3312 | Corning CellBIND Surface | 6,360 | CellSTACK-10 Chamber | 1 | 2 |
| 3270 | TC | 6,360 | CellSTACK-10 Chamber | 1 | 2 |
| 3271 | TC | 6,360 | CellSTACK-10 Chamber | 1 | 6 |
| 3321 | Corning CellBIND Surface | 25,440 | CellSTACK-40 Chamber | 1 | 2 |
| 3272 | TC | 25,440 | CellSTACK-40 Chamber | 1 | 2 |
| 3303 | Ultra-Low Attachment | 636 | CellSTACK-1 Chamber | 1 | 8 |

CellSTACK Accessories

**3328** Fill Cap, Female MPC Coupling

**3281** 0.2 µm Vent Cap

**3284** Bacterial Air Vent

## Corning® CellSTACK® Accessories are Simply Better!

Corning offers a variety of accessories to simplify handling and reduce contamination risks when processing CellSTACK Chambers.

### For Better Filling

A variety of optional filling caps are available to allow direct aseptic transfer of media and cells via pumping or gravity feed. Several coupling devices are available on these filling caps with or without integrally sealed USP Class VI certified C-Flex® tubing. Optional filling caps with attached filters with hydrophobic membranes provide for gas exchange and faster aseptic venting during liquid transfers. Extra sterile vented or unvented 33 mm replacement caps are also available.

### For Better Stacking

Reuable stacking devices fit between CellSTACK Chambers to keep them level and optimize incubator space while providing clearance for gas exchange.

### For Better Options

Sometimes, currently available accessories just don't fit a customer's needs. This is why Corning will work with you to design a CellSTACK Chamber accessory that will make your work flow process more efficient and reliable.

For large scale production using CellSTACK-40 Chambers there are automated systems that can save on labor while increasing reliability and efficiency.

Call us to discuss your specific requirements.

### Corning CellSTACK Accessories Ordering Information

| Cat. No. | Description | Qty/ Pk | Qty/ Cs |
|---|---|---|---|
| 3331 | Stacking device, ABS, nonsterile | 1 | 5 |
| 3332 | Universal cap*, with vented overcap, sterile | 1 | 4 |
| 3969 | Solid cap, sterile | 1 | 6 |
| 3968 | Vent cap, 0.2 mm membrane, sterile | 1 | 6 |
| 3281 | Vent cap, 3/8" (9.5 mm) ID tubing, 7 cm length, Pall® Acro 50, PVDF filter, sterile | 1 | 5 |
| 3282 | Fill cap, 1/8" (3.2 mm) ID tubing, female luer lock with male luer plug, sterile | 1 | 5 |
| 3283 | Fill cap, 3/8" (9.5 mm) ID tubing and 5/16" (7.94 mm) barbed fitting, sterile | 1 | 5 |
| 3284 | Vent cap, 3/8" (9.5 mm) ID tubing, 7 cm length, Pall Bacterial Air Vent, sterile | 1 | 4 |
| 3324 | Two vented over caps and one solid over cap for the Universal Cap, sterile | 5 | 100 |
| 3333 | Fill cap*, 1/4" (6.4 mm) ID tubing, 70 cm length, male MPC coupling with female end cap, sterile | 1 | 4 |
| 3328 | Fill cap, female MPC coupling, 1/4" (6.4 mm) ID barbed fitting with male end cap, sterile | 1 | 4 |
| 3329 | Fill cap, female MPC coupling, 3/8" (9.5 mm) ID barbed fitting with male end cap, sterile | 1 | 4 |
| 3334 | Fill cap, male MPC coupling, 1/4" (6.4 mm) ID barbed fitting with female end cap, sterile | 1 | 4 |
| 3339 | Fill cap, male MPC coupling with male end cap, 3/8" (9.5 mm) ID barbed fitting with female end cap, sterile | 1 | 4 |

*All caps are 33 mm thread caps.

**3333** Fill Cap, Male MPC Coupling

**3331** Stacking Device

**3332** Universal Cap

# CellCube® Systems

The CellCube System provides a fast, simple, and compact method for the mass culture of attachment-dependent cells. It uses a tissue culture treated growth surface for cell attachment, and continually perfuses the cells with fresh medium for increased cell productivity. The CellCube System is comprised of four pieces of capital equipment: the system controller, oxygenator, pump tower, and circulation pump, and is designed to use disposable CellCube Modules. Performance data from the CellCube System can be easily scaled to the production system. Please inquire about CellCube System pricing. Corning provides on-site technical support for the CellCube System.

The CellCube Modules provide a traditional tissue culture treated surface or new Corning® CellBIND® Surface for the growth of attachment dependent cells. The CellCube System provides an environment which more closely simulates *in vivo* conditions and reliably distributes nutrients and oxygen with low differential gradients across all cells within the modules.

### CellCube System Ordering Information

| Cat. No. | Description | Qty/Cs |
|---|---|---|
| 3040 | CellCube 6 Liter Oxygenator, Process Scale | 1 |
| 3041 | CellCube 6 Liter Oxygenator, Production Scale | 1 |
| 3020 | CellCube Set Up Kit, Bioprene® Tubing, Process Scale | 1 |
| 3021 | CellCube Set Up Kit, Bioprene Tubing, Production Scale | 1 |
| 3022 | CellCube Set Up Kit, Sta-Pure Tubing, Process Scale | 1 |
| 3023 | CellCube Set Up Kit, Sta-Pure Tubing, Production Scale | 1 |
| 3101 | CellCube Single Module System 6 Liter Oxygenator, Complete | 1 |
| 3139 | CellCube Single Module System Secondary Oxygen Probe (25 x 70 mm) | 1 |
| 3138 | CellCube Single Module System Secondary Oxygen Probe Holder | 1 |
| 3144 | CellCube Single Module System Oxygen Probe Cable | 1 |
| 3165 | CellCube Single Module System 12 mm Dissolved Oxygen Probe Membrane Kit | 1 |
| 3166 | CellCube System 25 mm Dissolved Oxygen Probe Membrane Kit | 1 |
| 3136 | CellCube Single Module System Stainless Steel Stand | 1 |
| 3135 | CellCube Single Module System Setup Kit | 1 |
| 3200 | CellCube 10-Stack Module (8,500 $cm^2$), Tissue Culture Treated | 2 |
| 3201 | CellCube 25-Stack Module (21,250 $cm^2$), Tissue Culture Treated | 1 |
| 3304 | CellCube 25-Stack Module (21,250 $cm^2$), Corning CellBIND Surface | 1 |
| 3264 | CellCube 100-Stack Module (85,000 $cm^2$), Tissue Culture Treated | 1 |
| 3302 | CellCube 100-Stack Module (85,000 $cm^2$) Corning CellBIND Surface | 1 |

# Corning E-Cube™ Culture System

Corning E-Cube Culture System

The E-Cube system provides a simple method to determine if your cells will grow in the CellCube module prior to investing in the resources and funding that would be necessary for the larger, automated CellCube system.

### Corning E-Cube Culture System Ordering Information

| Cat. No. | Description | Qty/Pk | Qty/Cs |
|---|---|---|---|
| 3286 | E-Cube System Kit (without CellCube module) | 1 | 1 |
| 3200 | CellCube Module 10-Stack | 1 | 2 |

### Corning E-Cube Culture System Accessories Ordering Information

| Cat. No. | Description | Qty/Pk | Qty/Cs |
|---|---|---|---|
| 430518 | 1 L Storage Bottle with cap | 2 | 24 |
| 401654 | 45 mm Cap with 2 stainless steel ports | 1 | 1 |
| 3287 | E-Cube Fittings | 1 | 1 |

# Spinner Flasks

**3152 and 3153**
Disposable Spinner Flasks

**3561 and 3563**
Disposable Spinner Flasks

## Corning® Disposable Spinner Flasks

- The Corning disposable spinner flask system comes ready-to-use with paddle and integrated magnet, eliminating the need for time-consuming assembly or cleaning and reassembly
- Molded from virgin polystyrene and gamma-irradiated, each spinner flask system assures a clean sterile unit. No more concerns with detergent residues or contamination
- Made of ISO 10993 compliant polystyrene, the vessel is comparable to conventional glass spinner flasks for growth of suspension cell lines and any attachment-dependent cultures using microcarrier beads. The 1L and 3L impellers are made of ISO 10993 compliant polypropylene.
- The paddle size and height is optimized for each vessel size. A unique integrated magnet provides smooth, even rotation at required speeds on slow-speed stirrers. Heat build-up in the vessel is reduced by means of a specially designed flange that raises the vessel off the stir-plate surface for the 125 mL and 500 mL flasks only.

### Corning Disposable Spinner Flasks Ordering Information

| Cat. No. | Description | Capacity (mL) | Center Neck (mm) | Sidearm Neck (mm) | Qty/Cs |
|---|---|---|---|---|---|
| 3152 | Disposable Spinner Flask | 125 | 70 | 25 | 12 |
| 3153 | Disposable Spinner Flask | 500 | 100 | 45 | 12 |
| 3561 | Disposable Spinner Flask | 1000 | - | 45 | 6 |
| 3563 | Disposable Spinner Flask | 3000 | - | 45 | 4 |
| 3569 | Disposable Spinner Flask with accessory attached | 1000 | - | 45 | 6 |

### *Replacement Caps & Aseptic Transfer Caps*

| Cat. No. | Description | Capacity (mL) | Sidearm Neck (mm) | Qty/Cs |
|---|---|---|---|---|
| 3567 | Vent Cap, 0.2 µm Vent | 500, 1000, 3000 | 45 | 4 |
| 3565 | Side Arm Aseptic Transfer Cap, DipTube w/ 0.2 µm Vent, MLL | 500 | 45 | 2 |
| 3562 | Side Arm Aseptic Transfer Cap, DipTube w/ 0.2 µm Vent, MLL | 1000 | 45 | 2 |
| 3564 | Side Arm Aseptic Transfer Cap, DipTube w/ 0.2 µm Vent, MLL | 3000 | 45 | 2 |

1L and 3L Disposable Spinner Flasks with Accessories

**3565, 3562 and 3564**
Aseptic Transfer Cap

**3567** Vent Cap

**4500-1L and 4500-250**
Spinner Flasks

ProCulture Spinner Flasks

## ProCulture® Glass Spinner Flask with Angled Sidearms

- Baffles enhance aeration and agitation of contents of the flask.
- Unique impeller design ensures optimal stirring.
- Sidearm designs permit easy access of 25 mL and 50 mL pipettes
- Visit **www.corning.com/lifesciences** to view additional Corning spinner flask accessories

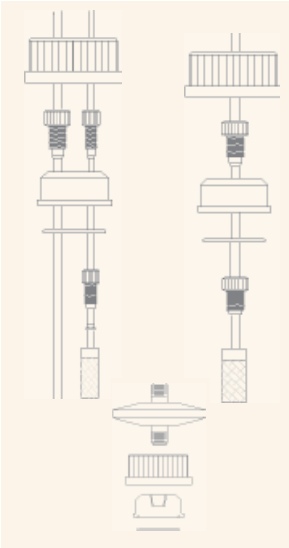
### ProCulture Spinner Flasks with Angled Sidearms Ordering Information

| Cat. No. | Description | Capacity | Center Neck (mm) | Sidearm Neck (mm) | Qty/Cs |
|---|---|---|---|---|---|
| 4500-125 | Spinner | 125 mL | 70 | 32 | 1 |
| 4500-250 | Spinner | 250 mL | 70 | 32 | 1 |
| 4500-500 | Spinner | 500 mL | 100 | 45 | 1 |
| 4500-1L | Spinner | 1L | 100 | 45 | 1 |
| 4500-3L | Spinner | 3L | 100 | 45 | 1 |
| 4500-6L | Spinner | 6L | 100 | 45 | 1 |
| 4500-8L | Spinner | 8L | 100 | 45 | 1 |
| 4500-15L | Spinner | 15L | 100 | 45 | 1 |
| 4500-36L | Spinner | 36L | 100 | 45 | 1 |
| 4502-3L | Spinner | 3L | 120 | 45 | 1 |
| 4502-6L | Spinner | 6L | 120 | 45 | 1 |
| 4502-8L | Spinner | 8L | 120 | 45 | 1 |
| 4502-15L | Spinner | 15L | 120 | 45 | 1 |
| 4502-36L | Spinner | 36L | 120 | 45 | 1 |
| 4504-3L | Spinner | 3L | 140 | 45 | 1 |
| 4504-6L | Spinner | 6L | 140 | 45 | 1 |
| 4504-8L | Spinner | 8L | 140 | 45 | 1 |
| 4504-15L | Spinner | 15L | 140 | 45 | 1 |
| 4504-36L | Spinner | 36L | 140 | 45 | 1 |

Retrofit Kits are available for converting older Corning® ProCulture Spinner Flasks to fit newer dual-bearing impellers.

### ProCulture Spinner Flasks with Vertical Sidearms Ordering Information

| Cat. No. | Capacity | Center Neck (mm) | Number of Vertical Sidearms | Sidearm Neck (mm) | Qty/Cs |
|---|---|---|---|---|---|
| 4510-8L | 8L | 100 | 4 | 45 | 1 |
| 4510-15L | 15L | 100 | 4 | 45 | 1 |
| 4510-36L | 36L | 100 | 6 | 45 | 1 |
| 4512-8L | 8L | 120 | 4 | 45 | 1 |
| 4512-15L | 15L | 120 | 4 | 45 | 1 |
| 4512-36L | 36L | 120 | 6 | 45 | 1 |
| 4514-15L | 15L | 140 | 4 | 45 | 1 |
| 4514-36L | 36L | 140 | 6 | 45 | 1 |

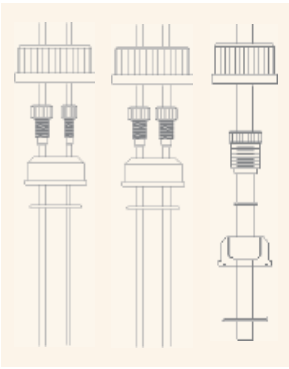


Vertical Sidearm Fittings, Gas Delivery and Venting

## Gas Handling Fittings, Vertical Sidearm Flasks

- Used to provide gases into larger spinner flasks with vertical sidearms
- Fittings are comprised of a PET insert with a Viton® O-Ring and a polypropylene sealing cap
- Gas filters are PTFE, 0.2 µm porosity
- The 316 stainless steel tubes are held in place by Noryl® nuts with integrated ferrules
- The fittings are completely autoclavable

| Cat. No. | Description | Dimension | Qty/Cs |
|---|---|---|---|
| 4519-100 | Sidearm fitting, gas delivery | 1/8" Inlet | 1 |
| 4519-102 | Sidearm fitting, gas delivery | 1/4" Inlet | 1 |
| 4519-104 | Sidearm fitting, delivery and vent | 1/8" and 1/4" | 1 |
| 4519-106 | Sidearm fitting, vent cap, 0.2 µm | 50 mm filter | 1 |
| 4519-177 | Sidearm fitting, vent cap, 0.2 µm, Sanitary | 50 mm filter | 1 |

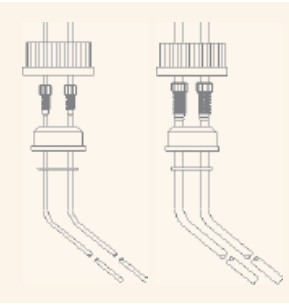


Vertical Sidearm Fittings, Media Handling

## Media Handling Fittings, Vertical Sidearm Flasks

- Used to introduce medium aseptically into large spinner flasks with vertical sidearms
- Fittings are comprised of a PET insert with a Viton O-Ring and a polypropylene sealing cap
- Gas filters are PTFE, 0.2 µm porosity
- The 316 stainless steel tubes are held in place by Noryl nuts with integrated ferrules
- The fittings are completely autoclavable

| Cat. No. | Description | Fits Flask Size | Tubing O.D. (inches) | Qty/ Case |
|---|---|---|---|---|
| 4519-112 | Sidearm fitting, dual, media handling | 8L, 15L | 1/8" | 1 |
| 4519-114 | Sidearm fitting, dual, media handling | 36L | 1/8" | 1 |
| 4519-116 | Sidearm fitting, dual, media handling | 8L, 15L | 1/4" | 1 |
| 4519-118 | Sidearm fitting, dual, media handling | 36L | 1/4" | 1 |
| 4519-120 | Sidearm fitting, combo, media handling | 8L, 15L | 1/8", 1/4" | 1 |
| 4519-122 | Sidearm fitting, combo, media handling | 36L | 1/8", 1/4" | 1 |
| 4519-124 | Sidearm fitting, single, media handling | 8L,15L | 1/2" | 1 |
| 4519-126 | Sidearm fitting, single, media handling | 36L | 1/2" | 1 |
| 4519-176 | Sidearm fitting, dual, media handling, EPDM | 8L, 15L | 1/4" | 1 |

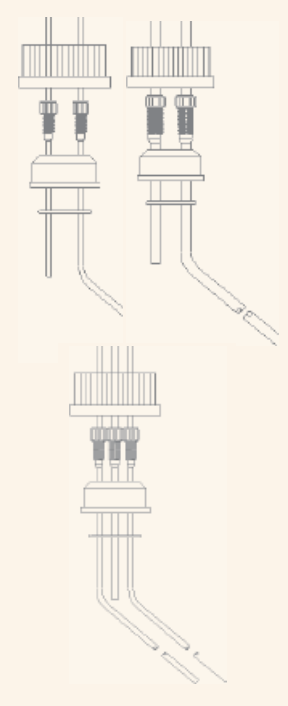


Dual Angled Sidearm Fittings

## Gas or Media Handling Fittings, Angled Sidearm Flasks, Dual Style

- Dual angled sidearm fittings can be used for aseptically transferring medium into or out of angled sidearm spinner flasks or for sparging the medium with gases
- Fittings are comprised of a PET insert with a Viton O-ring and a polypropylene sealing cap
- Two 316 stainless steel tubes which extend to the bottom of the flask, are held in place by Noryl nuts with integrated ferrules
- The fittings are completely autoclavable

| Cat. No. | Description | Flask Size | Tubing O.D. (inches) | Qty/ Case |
|---|---|---|---|---|
| 4519-150 | SA fitting, Dual | 1L | 1/8" | 1 |
| 4519-151 | SA fitting, Dual | 3L | 1/8" | 1 |
| 4519-152 | SA fitting, Dual | 6L | 1/8" | 1 |
| 4519-153 | SA fitting, Dual | 8L | 1/8" | 1 |
| 4519-173 | SA fitting, Dual | 1L | 1/8", 1/4" | 1 |
| 4519-121 | SA fitting, Dual | 8L | 1/8", 1/4" | 1 |
| 4519-174 | Sidearm fitting, Dual | 500 mL | 1/8" angled to 125 mL level, 1/4" | 1 |
| 4519-154 | Sidearm fitting, Dual | 1L | 1/4" | 1 |
| 4519-155 | Sidearm fitting, Dual | 3L | 1/4" | 1 |
| 4519-156 | Sidearm fitting, Dual | 6L | 1/4" | 1 |
| 4519-157 | Sidearm fitting, Dual | 8L | 1/4" | 1 |
| 4519-170 | Sidearm fitting, Dual | 15L | 1/4" | 1 |

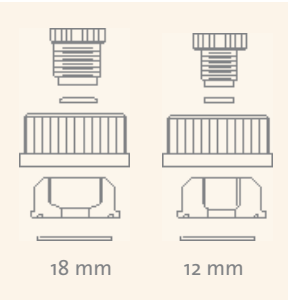


Combination and Triple Angled Sidearm Fittings

## Gas or Media Handling Fittings, Angled Sidearm Flasks, Combination Style

- Used to aseptically transfer medium, sparge the cell culture medium directly or add gases to the head space above the cell culture medium
- Fittings are comprised of a PET insert with a Viton® O-ring and a polypropylene sealing cap
- One or two 316 stainless steel tubes extend to the bottom of the flask; the other is a shorter 6" length
- Both tubes are held in place by Noryl® nuts with integrated ferrules
- The fittings are completely autoclavable

| Cat. No. | Description | Flask Size | Tubing O.D. (inches) | Qty/Case |
|---|---|---|---|---|
| 4519-158 | Sidearm fitting, combination | 1L | 1/8" | 1 |
| 4519-159 | Sidearm fitting, combination | 3L | 1/8" | 1 |
| 4519-160 | Sidearm fitting, combination | 6L | 1/8" | 1 |
| 4519-161 | Sidearm fitting, combination | 8L | 1/8" | 1 |
| 4519-162 | Sidearm fitting, combination | 1L | 1/4" | 1 |
| 4519-163 | Sidearm fitting, combination | 3L | 1/4" | 1 |
| 4519-164 | Sidearm fitting, combination | 6L | 1/4" | 1 |
| 4519-165 | Sidearm fitting, combination | 8L | 1/4" | 1 |
| 4519-171 | Sidearm fitting, combination | 15L | 1/4" | 1 |
| 4519-166 | Sidearm fitting, combination, triple | 1L | 1/8" | 1 |
| 4519-167 | Sidearm fitting, combination, triple | 3L | 1/8" | 1 |
| 4519-168 | Sidearm fitting, combination, triple | 6L | 1/8" | 1 |
| 4519-169 | Sidearm fitting, combination, triple | 8L | 1/8" | 1 |




Sidearm Fittings for Sensors

## Fittings for Insertion Probes, Vertical Sidearm Flasks

- Used to secure pH, $O_2$, or temperature sensors in large spinner flasks with vertical sidearms
- Fittings are comprised of a PET insert with a Viton O-ring and a polypropylene sealing cap
- The 316 sensors are held in place by Noryl nuts with integrated ferrules
- The fittings are completely autoclavable

| Cat. No. | Description | Sensor O.D. (mm) | Qty/Cs |
|---|---|---|---|
| 4519-108 | Sidearm fitting, sensor, $O_2$ probes | 12 | 1 |
| 4519-128 | Sidearm fitting, sensor, temperature probes | 12 | 1 |
| 4519-110 | Sidearm fitting, sensor, pH probes | 12 | 1 |
| 4519-172 | Sidearm fitting, sensor, pH or $O_2$ | 18 | 1 |

Impeller Assembly

## Impeller Assembly for Magnetically-Driven Bioreactor

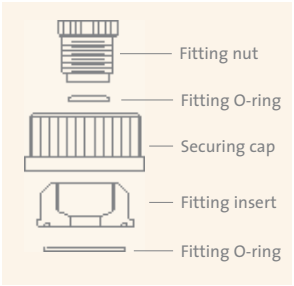
Stainless steel impeller shaft with modified impeller blade for use with probes to create a small bioreactor.

| Cat. No. | Description | Qty/Cs |
|---|---|---|
| 402648 | Impeller assembly, stainless steel, dual bearing, modified for probes, 3L | 1 |
| 402649 | Impeller assembly, stainless steel, dual bearing, modified for probes, 6L | 1 |
| 401392 | Impeller assembly, stainless steel, dual bearing, modified for probes, 8L | 1 |
| 401661 | Impeller assembly, stainless steel, dual bearing, modified for probes, 15L | 1 |
| 402650 | Impeller assembly, stainless steel, dual bearing, modified for probes, 36L | 1 |

## Cap Assembly for Magnetically-Driven Bioreactor

Cap assembly for small biorecator with various fitting arrangements.

| Cat. No. | Description | Qty/Cs |
|---|---|---|
| 402579 | Cap Assembly, 120 mm, Glass Filled PBT, 3 (3/8"), 1 (1/4") fittings | 1 |
| 402576 | Cap Assembly, 120 mm, Glass Filled PBT, 2 (12 mm), 2 (1/4") fittings | 1 |
| 402577 | Cap Assembly, 120 mm, Glass Filled PBT, 2 (12 mm), 2 (1/4"), 1 (3/8") fittings | 1 |




## Spare Parts for Sidearm Fittings

*Securing Caps*

| Corning Cat. No. | Description | Qty/Cs |
|---|---|---|
| 1395-32LTC | Cap, solid, 32 mm, orange | 1 |
| 1395-45LTC | Cap, solid, 45 mm, orange | 1 |
| 1395-45LTR | Drip ring, 45 mm, clear | 1 |
| 1395-45LTMC | Cap, vented, securing, 45 mm, .22 PTFE, grey | 10 |

Direct Drive Motor

## Direct Drive Motors

- High torque, low rpm stirrer designed to maintain constant low speed
- Gearhead stirrer delivers 14.5 in-lbs of torque
- Maximum speed is 350 rpm
- Weight of motor is 9 lbs (4.1kg)
- Available with 120VAC 60Hz or 230VAC 50Hz

| Cat. No. | Description | Qty/Cs |
|---|---|---|
| 400640 | 120VAC, 60 Hz Motor | 1 |
| 402645 | 230VAC, 50 Hz Motor | 1 |

Direct Drive Shaft/Cap Assembly

## Direct Drive Shaft/Cap Assemblies

- For 8L, 15L, or 36L paddle assemblies
- Used on all series 4510 and 4512 Spinner flasks

| Cat. No. | Description | Qty/Cs |
|---|---|---|
| 402614 | For 100 mm Neck Flasks | 1 |
| 400649 | For 120 mm Neck Flasks | 1 |

Direct Drive Paddle Assembly

## Direct Drive Paddle Assemblies

- For series 4510, 4512, and 4514 Spinner flasks when coupled to a direct drive motor
- Paddle assemblies will couple to 100 mm and 120 mm cap assemblies

| Cat. No. | Description | Qty/Cs |
|---|---|---|
| 4515-8L | Paddle assembly only for 8L flask | 1 |
| 4515-15L | Paddle assembly only for 15L flask | 1 |
| 4515-36L | Paddle assembly only for 36L flask | 1 |

# Erlenmeyer Flasks

Sizes range from 125 mL to 3L for plain and baffled Erlenmeyer flasks


Unique baffled design with a molded-in "1/3 Fill" line for convenience on all baffled Erlenmeyer flasks.

### *Shaker Flask Application Tip*

Corning recommends starting with a shaking rate of 75-125 RPM (orbital shaker) and a medium volume of 30-40% of the nominal flask capacity.

## Corning® Erlenmeyer Flasks

Corning baffled and plain Erlenmeyer and Fernbach culture flasks are ideal for shaker culture applications and storage. Like all Corning flasks, the Erlenmeyer flasks are certified nonpyrogenic and sterile.

- Polycarbonate construction: USP Class VI material provides excellent optical clarity and mechanical strength
- Sizes range from 125 mL to 3L
- Baffled or plain bottom options in every size
- Molded-in graduations for accuracy
- Vent cap option for continuous gas exchange while ensuring sterility and preventing leakage
- Individually packaged and radiation sterilized for ease of use
- All flasks have the highest Sterility Assurance Level (SAL) of $10^{-6}$
- Certified nonpyrogenic

### Corning Polycarbonate Erlenmeyer Flasks and Caps Ordering Information

*Baffled Bottom Erlenmeyer Flasks*

| Cat. No. | Description | Sterile | Qty/Cs |
|---|---|---|---|
| 431405 | Erlenmeyer Flask, Baffled, 125 mL, Vent Cap | Yes | 50 |
| 431404 | Erlenmeyer Flask, Baffled, 125 mL, Plug Seal Cap | Yes | 50 |
| 431407 | Erlenmeyer Flask, Baffled, 250 mL, Vent Cap | Yes | 50 |
| 431406 | Erlenmeyer Flask, Baffled, 250 mL, Plug Seal Cap | Yes | 50 |
| 431401 | Erlenmeyer Flask, Baffled, 500 mL, Vent Cap | Yes | 25 |
| 431408 | Erlenmeyer Flask, Baffled, 500 mL, Plug Seal Cap | Yes | 25 |
| 431403 | Erlenmeyer Flask, Baffled, 1L, Vent Cap | Yes | 25 |
| 431402 | Erlenmeyer Flask, Baffled, 1L, Plug Seal Cap | Yes | 25 |
| 431256 | Erlenmeyer Flask, Baffled, 2L, Vent Cap | Yes | 6 |
| 431253 | Fernbach Culture Flask, Baffled, 3L, Vent Cap | Yes | 4 |

*Plain Bottom Erlenmeyer Flasks*

| Cat. No. | Description | Sterile | Qty/Cs |
|---|---|---|---|
| 431143 | Erlenmeyer Flask, 125 mL, Vent Cap | Yes | 50 |
| 430421 | Erlenmeyer Flask, 125 mL, Plug Seal Cap | Yes | 50 |
| 431144 | Erlenmeyer Flask, 250 mL, Vent Cap | Yes | 50 |
| 430183 | Erlenmeyer Flask, 250 mL, Plug Seal Cap | Yes | 50 |
| 431145 | Erlenmeyer Flask, 500 mL, Vent Cap | Yes | 25 |
| 430422 | Erlenmeyer Flask, 500 mL, Plug Seal Cap | Yes | 25 |
| 431147 | Erlenmeyer Flask, 1L, Vent Cap | Yes | 25 |
| 431146 | Erlenmeyer Flask, 1L, Plug Seal Cap | Yes | 25 |
| 431255 | Erlenmeyer Flask, 2L,Vent Cap | Yes | 6 |
| 431252 | Fernbach Culture Flask, 3L, Vent Cap | Yes | 4 |

**431363** Flat Cap

**431340** Vent Cap

### *Replacement Erlenmeyer Flask Caps*

Corning® Polypropylene Erlenmeyer Flask Caps are also available separately. They are sterile, individually packaged and available for the 500 mL and 1L*, 2L and 3L flask sizes.

| Cat. No. | Description | Sterile | Qty/Cs |
|---|---|---|---|
| 431372* | 43 mm Vent Cap, 500 mL and 1L Erlenmeyer Flask* | Yes | 50 |
| 431339 | 48 mm Vent Cap, 2L Erlenmeyer Flask | Yes | 24 |
| 431364 | 48 mm Flat Cap, 2L Erlenmeyer Flask | Yes | 24 |
| 431340 | 70 mm Vent Cap, 3L Erlenmeyer Flask | Yes | 24 |
| 431363 | 70 mm Flat Cap, 3L Erlenmeyer Flask | Yes | 24 |

*The 43 mm cap for the 500 mL and 1L sizes are available Made to Order only with a 5 case minimum.

### *Aseptic Transfer Caps*

Corning Erlenmeyer Flask Aseptic Transfer Caps are available separately. They are sterile and arrive individually doubled bagged. They are available for the 1L, 2L and 3L flask sizes. The transfer caps have two ports. One port ends in a 0.2 µm Acro 50 mm disk and the other port is C-Flex Tubing ending in either a male luer lock or a male polycarbonate quick connect. The Diptube reaches all the way to the bottom of the flask for easy aseptic transfer of your liquid handling processes.

| Cat. No. | Description | Sterile | Qty/Cs |
|---|---|---|---|
| 431444 | 43 mm Cap, 1L, Diptube with 0.2 µm Vent, MLL | Yes | 5 |
| 431445 | 43 mm Cap, 1L, Diptube with 0.2 µm Vent, MPC | Yes | 5 |
| 431446 | 48 mm Cap, 2L, Diptube with 0.2 µm Vent, MLL | Yes | 6 |
| 431447 | 48 mm Cap, 2L, Diptube with 0.2 µm Vent, MPC | Yes | 6 |
| 431448 | 70 mm Cap, 3L, Diptube with 0.2 µm Vent, MLL | Yes | 4 |
| 431449 | 70 mm Cap, 3L, Diptube with 0.2 µm Vent, MPC | Yes | 4 |

Aseptic Transfer Caps, MLL

Aseptic Transfer Caps, MPC

# Cell Scrapers and Lifters

**3008** Cell Lifter

**3010** Small Cell Scraper

## Cell Scrapers and Cell Lifters

- Useful for the manual harvesting of cells
- Blade design minimizes cell damage and ensures even contact with the growth surface
- Cell lifter is useful for harvesting cells (especially stem cells) in dishes
- Scrapers designed for use in flasks
- Individually wrapped
- Sterilized by gamma radiation
- Certified nonpyrogenic

### Cell Scraper and Lifter Ordering Information

| Cat. No. | Description | Blade Length (cm) | Handle Length (cm) | Qty/Pk | Qty/Cs |
|---|---|---|---|---|---|
| 3008 | Cell lifter | 1.9 | 18 | 1 | 100 |
| 3010 | Small scraper | 1.8 | 25 | 1 | 100 |
| 3011 | Large scraper | 3.0 | 39 | 1 | 100 |

# Technical Appendix

## CORNING® CELL CULTURE SURFACES

### Introduction

For over eighty years Corning has been developing products and surfaces for cell culture. Corning currently offers six polystyrene-based surfaces (Table 1) for growing cells including the most recent technology revolution, the patented Corning CellBIND® surface (U.S. Patent 6,617,152):

Most of these early plastic vessels were made from polystyrene, a long carbon chain polymer with benzene rings attached to every other carbon. Polystyrene was chosen because it has excellent optical clarity, is easy to mold and is relatively inexpensive. However, it also has one significant drawback: it is a very hydrophobic (nonwettable) polymer to which cells have difficulty attaching. Fortunately, the surface of polystyrene can be easily modified by a variety of chemical (sulfuric acid) and physical (corona discharge, gas-plasma or irradiation) methods. Using these methods, hydroxyl, ketone, aldehyde, carboxyl and amine groups can readily be grafted onto the polymer (Figure 1). These groups modify the surface characteristics changing the uncharged hydrophobic surface into a more ionic hydrophilic surface. Polystyrene can also be modified through chemical reactions to allow the covalent attachment of a variety of reactive groups that can be used for the subsequent covalent immobilization of biomolecules. For additional information, please check the References.

### Corning CellBIND® Surface

The Corning CellBIND culture surface, the first novel cell culture surface treatment in over 20 years, is designed to improve cell attachment under difficult conditions, such as reduced-serum or serum-free medium, resulting in higher cell yields. It is also useful for growing "difficult" cells such as primary cultures or transfected cells over expressing proteins. Developed by Corning scientists, this patented technology (U.S. Patent 6,617,152) uses a novel microwave plasma process for treating the culture surface. This process improves cell attachment by incorporating significantly more oxygen into the cell culture surface than traditional plasma or corona discharge treatments, rendering it more hydrophilic (wettable) and increasing the stability of the surface.

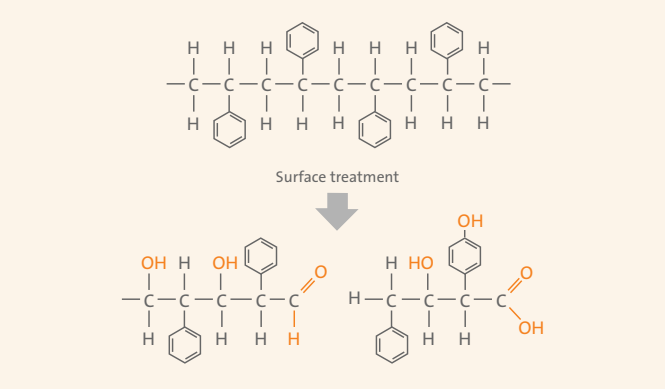



**Figure 1.** Polystyrene can be surface modified by the addition of a variety of different chemical groups, by breaking the carbon chain backbone, or by opening the benzene ring (not shown).

Unlike biological coatings, the Corning CellBIND surface is a nonbiological surface that requires no special handling or storage. Because the polymer is treated, rather than coated, the surface is more consistent and stable. This enhanced cell performance has already led to a major biotechnology company choosing Corning roller bottles with the Corning CellBIND surface for producing a new FDA approved protein therapeutic.

Corning CellBIND surface benefits:

- Quickly adapts cells to reduced serum or serum-free conditions
- May eliminate the need for tedious, time-consuming, expensive and low stability biological coatings
- Stable at room temperature, requires no refrigeration or special handling
- Gives more consistent and even cell attachment for difficult to attach cell lines, especially transfected cells
- Reduces premature cell detachment from confluent cultures especially in roller bottles and during cell-based assays

The Corning CellBIND® surface is available on flasks, multiple well plates, CellSTACK® Culture Chambers, roller bottles, 96 well plates, 384 well plates, and dishes.

**Table 1. Corning Cell Culture Surfaces**

| Corning Surface | Binding Interaction | Sample Properties |
|---|---|---|
| Corning CellBIND Surface modified polystyrene surface | Hydrophilic and ionic (negatively charged) | Improves cell attachment and binding to polystyrene |
| Standard Tissue culture treated polystyrene | Hydrophilic and ionic (negatively charged) | Allows cell attachment and binding to polystyrene |
| Untreated polystyrene | Hydrophobic | Significantly reduces the attachment of most cells |
| Ultra Low Attachment coated polystyrene | Hydrophilic and nonionic | Hydrogel layer prevents the attachment of almost all cells |
| Poly-D-lysine coated polystyrene | Hydrophilic and ionic (positively charged) | Improves cell attachment and binding to polystyrene |
| Ultra-Web™ Synthetic Surface | Hydrophilic and ionic interactions (positively charged) on a 3D surface | Promotes more *in vivo*-like morphology |

### Ultra-Web™ Synthetic Surfaces

Ultra-Web Synthetic Surfaces are composed of randomly orientated electrospun polyamide nanofibers with an average fiber diameter of ~180 nm. This creates a culturing substrate that mimics structural components within the basement membrane or extracellular matrix.

Ultra-Web synthetic surface is available with two surface chemistries:

- Untreated electrospun polyamide nanofibers with an uncharged slightly hydrophilic surface
- Polyamine treated electrospun polyamide nanofibers with a positively charged surface for enhanced cell attachment or binding and covalently linking biomolecules

Ultra-Web Synthetic Surface Applications:

- Ideal for culturing liver, neuronal, kidney and stem cell lines or primary cultures where current surfaces do not provide the necessary culture performance or function
- Replacement for poly-lysine or animal-derived biological coatings
- Ideal substrate for binding cell attachment and growth factors to create more *in vivo*-like culture environments
- Compatible with cell-based luminescence-reporter gene and FLIPR calcium flux assays
- Promotes more *in vivo*-like morphology (spheroid and dome formation)

Ultra-Web Synthetic Surface Benefits:

- Synthetic surfaces are more stable and consistent lot to lot than biological coatings
- Cells grow on the nanofiber surface, not in it, for easy harvesting
- Easy to view cells using phase contrast microscopy
- Ready to use and room temperature stable

### Ultra-Low Attachment Coated Polystyrene Surface

The Corning Ultra-Low Attachment surface is a covalently bound hydrogel layer that is hydrophilic and neutrally charged. Since proteins and other biomolecules passively adsorb to polystyrene surfaces through either hydrophobic or ionic interactions, this hydrogel surface naturally inhibits nonspecific immobilization via these forces, thus inhibiting subsequent cell attachment. This surface is very stable, non-cytotoxic, biologically inert and nondegradable. Corning offers the Ultra-Low Attachment surfaces on dishes, plates, flasks, and CellSTACK® Culture Chamber 1-Stack.

This Ultra-Low Attachment surface has been shown to successfully inhibit attachment of anchorage dependent MDCK, VERO, and C6 cells grown for a period of time equal to that necessary to obtain confluent cell growth on the control surface (standard tissue culture treated polystyrene; Figure 2). This surface has also been shown to inhibit the attachment and activation of macrophages and neutrophils.

Ultra-Low Attachment culture vessels are useful for:

- Studying tissue-specific functions of certain cancer cells (i.e., MCF-7 breast cancer cells)

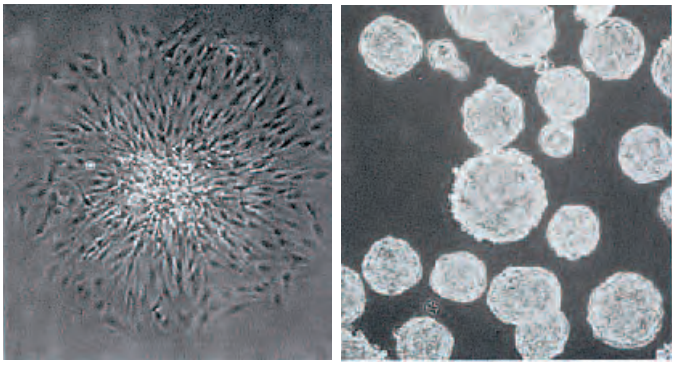


**Figure 2.** Single cell derived colonies of C6 glioma cells grow as flattened attached colonies in standard tissue culture treated surface (left panel) but form unattached spherical colonies on the ultra low attachment surface (right panel).

- Preventing stem cells from attachment-mediated differentiation
- Selectively culturing tumor or virally transformed cells as unattached colonies (substitute for soft agar assays)

### Poly-D-lysine Coated Surface

Some assays and procedures require enhanced binding of cells to polystyrene. Corning poly-D-lysine (PDL) microplates are coated with PDL (molecular weight range of 70 to 150 kDa) by a proprietary method. This synthetic polymeric coating creates a uniform net positive charge on the plastic surface which, for some cell types, can enhance cell attachment, growth and differentiation, especially in serum-free and low serum conditions. PDL surfaces often improve attachment and growth of primary neurons, glial cells, neuroblastomas, and a variety of transfected cell lines, including HEK-293. Corning offers poly-D-lysine coated 96 and 384 well microplates.

### Standard Tissue Culture Treated Polystyrene Surface

Standard Corning® polystyrene cell culture vessels are surface modified using either corona discharge (flasks, dishes and microplates) or gas-plasma (roller bottles and culture tubes). These processes generate highly energetic oxygen ions which graft onto the surface polystyrene chains (Figure 1) so that the surface becomes hydrophilic and negatively charged when placed in medium. Corning offers the standard tissue culture treated surface on flasks, dishes, multiple well plates, CellSTACK® Culture Chambers, roller bottles and culture tubes.

### Untreated Polystyrene Surface

Natural, unmodified polystyrene surfaces are hydrophobic and only bind cells and biomolecules through passive hydrophobic interactions. Corning offers untreated polystyrene culture dishes and microplates for growing cells in stationary suspension or other applications where reduced cell attachment is desired. However, these untreated vessels are sterilized by low dose gamma irradiation, which slightly increases the wettability of the surface. Since some transformed cell lines (CHO-k1, for example) and macrophages will attach and grow on these hydrophobic surfaces, Corning also offers an Ultra-Low Attachment Surface (see below) for use in situations where cell attachment must be kept to an absolute minimum.

## CHARACTERISTICS OF CORNING® PLASTICWARE

| | Polystyrene | Polyethylene (High Density) | Polypropylene | Polycarbonate | Nylon | P.T.F.E. (Teflon®) | Polyethylene Terephthlate (PET) |
|---|---|---|---|---|---|---|---|
| PHYSICAL CHARACTERISTICS | | | | | | | |
| Basic Properties | Biologically inert, hard, excellent optical qualities | Biologically inert, high chemical resistance toughness | Biologically inert, high chemical resistance, exceptional resistance | Clear, very tough, inert, high temperature transmission | Tough, heat resistant, machinable, high moisture vapor slippery surface | Biologically and chemically inert, high resistant | Biologically inert, hard, tough, excellent optical qualities |
| Clarity | Clear | Opaque | Translucent | Clear | Opaque | Opaque | Clear |
| Autoclave Results | Melts | May | Withstands distort | Withstands several cycles | OK one cycle | OK | Melts |
| Heat Distortion Point | 147-175°F 64-80°C | 250°F 121°C | 275°F 135°C | 280-290°F 138-143°C | 300-356°F 150-180°C | 250°F 121°C | 250°F 70°F |
| Burning Rate | Slow | Slow | Slow | Self-extinguishing | Self-extinguishing | None | – |
| EFFECTS OF LABORATORY REAGENTS | | | | | | | |
| Weak Acids | None | None | None | None | None | None | None |
| Strong Acids | Oxidizing acids attack | Oxidizing acids attack | Oxidizing acids attack | May be attacked | Attacked | None | Oxidizing acids attack |
| Weak Alkalies | None | None | None | None | None | None | None |
| Strong Alkalies | None | None | None | Slowly attacked | None | None | Attacked |
| Organic Solvents | Soluble in aromatic chlorinated hydrocarbons | Resistant below 80°C | Resistant below 80°C | Soluble in chlorinated hydrocarbons; partly soluble in aromatics | Resistant | Resistant | Soluble in aromatic or chlorinated hydrocarbons |
| GAS PERMEABILITY OF THIN WALL PRODUCTS* | | | | | | | |
| $O_2$ | Low | High | High | Very low | Very low | – | Very low |
| $N_2$ | Very low | Low | Low | Very low | Very low | – | Very low |
| $CO_2$ | High | Very high | Very high | Low | – | – | Low |

Portions of this table courtesy of Modern Plastics Encyclopedia. Most data are from tests by A.S.T.M. methods. Tables show averages or ranges. Many properties vary with manufacturer, formulation, testing laboratory, and the specific operating conditions.

*Obtained from a table which lists gas permeability in CC/100 sq. inches per 24 hrs./mil.

## CHEMICAL COMPATIBILITY OF CORNING® PLASTICWARE

| | PS | PP | PVC | CA | PC | CN | NY | MCE | PTFE | PET |
|---|---|---|---|---|---|---|---|---|---|---|
| *Acids* | | | | | | | | | | |
| Hydrochloric acid (25%) | G | G | G | N | R | R | N | O | R | R |
| Hydrochloric acid (concentrated) | F | G | F | N | R | N | N | N | R | O |
| Nitric acid (concentrated) | P | P | P | N | R | N | N | N | O | N |
| Nitric acid (25%) | P | G | F | N | R | L | N | O | R | R |
| *Alcohols* | | | | | | | | | | |
| Butanol | G | G | G | R | R | R | R | R | R | R |
| Ethanol | G | G | G | R | R | N | R | O | R | R |
| Methanol | G | G | G | R | R | N | R | O | R | R |
| *Amines* | | | | | | | | | | |
| Aniline | G | G | P | N | N | R | R | N | R | O |
| Dimethylformamide | P | G | F | N | N | N | R | N | R | N |
| *Bases* | | | | | | | | | | |
| Ammonium hydroxide (25%) | F | G | G | R | N | R | R | O | N | O |
| Ammonium hydroxide (1N) | F | G | G | N | N | R | R | O | N | N |
| Sodium hydroxide | G | G | G | N | N | N | R | N | R | N |
| *Hydrocarbons* | | | | | | | | | | |
| Hexane | P | G | F | R | R | R | R | R | R | R |
| Toluene | P | G | P | R | O | R | R | R | R | N |
| Xylene | P | F | P | R | R | R | R | R | R | N |
| Dioxane | P | G | P | N | N | N | R | N | R | R |
| Dimethylsulfoxide (DMSO) | P | G | P | N | N | N | R | N | R | O* |
| *Halogenated Hydrocarbons* | | | | | | | | | | |
| Chloroform | P | N | P | N | N | R | R | N | R | R |
| Methylene chloride | P | F | P | N | N | R | R | N | R | N |
| *Ketones* | | | | | | | | | | |
| Acetone | P | G | P | N | O | N | R | N | R | R |
| Methyl ethyl diketone | P | G | P | N | O | N | R | O | R | R |

*Can be used with aqueous solutions containing up to 20% DMSO.
R = Recommended, L = Limited Resistance, N = Not Recommended, O = Testing Advised, F = Fair, G = Good, P = Poor, PP = Polypropylene, PVC = Polyvinyl Chloride, CA = Cellulose Acetate, PC = Polycarbonate, PTFE = Polytetrafluoroethylene PS = Polystyrene, CN = Cellulose Nitrate, NY = Nylon, MCE = Mixed Cellulose Esters, PET = Polyethylene Terephthalate.

## CHARACTERISTICS OF CORNING CENTRIFUGE TUBES

The following information is provided to serve as a general guideline for determining suitability of Corning centrifuge tubes for your applications. In addition, Corning recommends following the procedures outlined by the centrifuge manufacturer, as well as conducting a trial run to determine proper conditions before beginning any critical applications.

Corning centrifuge tubes are tested for leakage. They should not break or leak if used in a properly balanced rotor with suitable carriers, holders, and adapters that fully support the tubes when run in accordance with the guidelines in this section. These tubes are intended for one-time use only; reuse is not recommended as breakage or leakage may occur.

The recommended working temperature range for Corning centrifuge tubes is 0 to 40°C. The suitability of these tubes for storage below 0°C depends on both the solution and the storage conditions. In general, the polypropylene and PET tubes are more resistant to stress at low temperatures than polystyrene. It is strongly recommended that a trial run be performed under actual conditions to test the suitability of the tubes for frozen storage.

### Suggestions for Safe Centrifugation

- ***Caution***: When centrifuging pathogenic organisms, clinical specimens known or suspected of being infectious, or any other potentially biohazardous materials, approved safety containment systems should be used. Contact your centrifuge manufacturer for appropriate accessories or recommendations.
- Read protocols and instruction manuals carefully. Do not confuse speed or revolutions per minute (RPM) with relative centrifugal force (RCF). Instructions for centrifuging a sample at a given RPM and time are incomplete unless the rotor or radius is specified. Protocols should always state the time and RCF value for centrifuging a sample.

- Proper balancing and distribution of the load in a centrifuge is critical for optimum performance and to prevent damage to the tubes or centrifuge. Opposing buckets or loads should always be balanced within the range specified by the manufacturer. Tubes should always be distributed in the buckets with respect to the center of rotation as well as the pivotal axis of the bucket. Failure to do this may prevent the bucket from achieving a horizontal position during the centrifugation run. Uneven separations or tube failure may result.

These centrifuge tubes are intended for use by persons knowledgeable in safe laboratory practices. Failure can result from surface damage, exceeding the specified RCF values, using unsuitable support systems, improper temperatures, or incompatible chemicals.

The RCF ratings for Corning® disposable centrifuge tubes have been established at room temperature using tubes fille to nominal capacity with water and spun in a horizontal rotor centrifuge for 5 minutes. The centrifuge must be equipped with the recommended carriers, adapters, and cushions that fully support the tubes. If an angle head rotor is used or proper support is not provided, RCF values will be lower. Use of liquid other than water may also lower RCF values. Please consult your centrifuge specifications and the nomogram table (page 44) to determine speeds at which maximum RCF is achieved.

### Chemical Compatibility of Disposable Plastic Centrifuge Tubes

The mechanical strength, flexibility, color, weight and dimensional stability of all plastic centrifuge tubes are affected to varying degrees by the chemicals with which they come in contact. Specific operating conditions, especially temperature, RCF, rotor type, carrier design, and run length will also affect tube performance.

### Physical Properties of Disposable Plastic Centrifuge Tubes

| | Clear Polypropylene | New Polyethylene Terephthalate |
|---|---|---|
| Recommended Working Temp* | 0-40° | 0-40° |
| Heat Distortion Point | 121° | 70° |
| Flexibility | Moderate | Rigid |
| Transparency | Clear | Clear |
| Maximum RCF: | | |
| 15 mL Tube | 12,000 x g | 3,600 x g |
| 50 mL Tube | 15,500 x g | 3,600 x g |
| 250 mL Tube | – | – |
| 500 mL Tube | – | – |

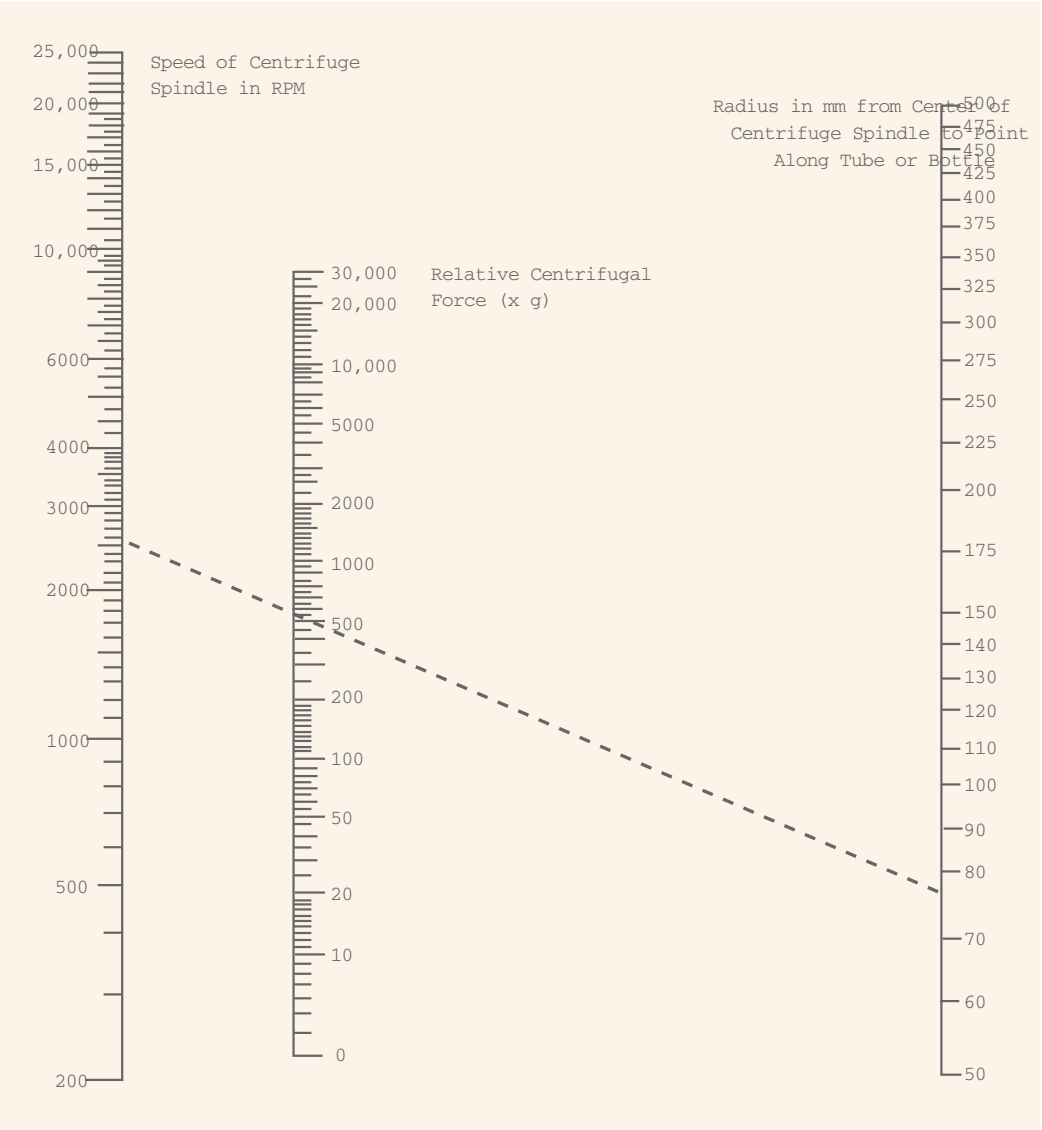
*At room temperature for 24 hours.

### Chemical Resistance of Disposable Plastic Centrifuge Tubes*

| Chemical Class | Polyethylene Terephthalate | Polypropylene | Polyethylene Caps |
|---|---|---|---|
| Acids (weak) | 1 | 1 | 1 |
| Acids | 3 | 1 | 1 |
| Alcohols | 1 | 1 | 1 |
| Aldehydes | 3[a] | 2[a] | 1 |
| Bases | 3 | 1 | 1 |
| Esters | 2 | 2 | 2 |
| Hydrocarbons: | | | |
| Aliphatic | 1 | 2 | 3 |
| Aromatic | 3 | 3[b] | 3 |
| Halogenated | 3 | 3 | 3 |
| Ketones | 2 | 2[c] | 2 |

*At room temperature for 24 hours.
1 = Recommended; 2 = Suitable for most applications. However, a trial run under specific operating conditions is recommended; 3 = Not recommended.
Note: a = Formaldehyde, rated 1; b = Phenol, rated 1; c = Acetone, rated 1.

## Nomogram for Computing Relative Centrifugal Force




To calculate the RCF value at any point along the tube or bottle, measure the radius, in mm, from the center of the centrifuge spindle to the particular point. Draw a line from the radius value on the right hand column to the appropriate centrifuge speed on the left-hand column. The RCF value is the point where the line crosses the center column. The nomogram is based on the formula:

$RCF = (11.17 \times 10^{-7}) RN^2$

*where:*

R = Radius in mm from centrifuge spindle to point in tube bottom

N = Speed of spindle in RPM

*Fold out for*

Innovative Cell Culture Surfaces for the 21st Century

# Innovative Cell Culture Surfaces for the 21st Century

## Corning® Surfaces

For over 30 years, Corning culture vessels have been modified using corona discharge and vacuum plasma to generate better surfaces for growing attached cells.

Today's new culture technologies, such as stem cells and tissue engineering, require new surfaces with new capabilities. Corning's investments in developing surface technologies are paving the way for these new cell culture applications. See for yourself why Corning is the first and only name to trust for surfaces that are backed with a performance guarantee.

Corning's research center at Sullivan Park, Corning, New York

## Surfaces for Enhancing Cell Attachment

### Corning CellBIND® Surface

The unique Corning CellBIND surface uses a patented microwave process for incorporating significantly more oxygen into the cell culture surface, rendering it better for cell attachment especially under difficult conditions.

- Quickly adapts cells to reduced serum or serum-free conditions
- Improves attachment and yield
- No special handling or storage required

### Corning Labware with Ultra-Web™ Synthetic Surfaces

Innovative Ultra-Web synthetic nanofiber surfaces offer cells
a more *in vivo*-like 3-D fibrillar topography for cells where current surfaces do not allow the desired cell culture performance or function.

- Growing cells, such as stem cells, liver, neuronal and primary cultures
- Helps promote a more *in vivo*-like cell morphology not obtainable with plastic 2-D surface
- Easy to view and harvest cells using standards methods
- Compatible with cell-based luminescence-reporter gene and FLIPR calcium flux assays

### Corning Microplates with Poly-D-Lysine Coated Surface

Corning Poly-D-Lysine (PDL) microplates are coated with PDL (molecular weight range of 70 to 150 kDa) giving the surface a net positive charge for better cell attachment.

- Improves differentiation of primary neurons, glial cells, neuroblastomas
- Enhances attachment of transfected cell lines, including HEK-293
- Helps cells stay attached during assay processing

## Surfaces for Reducing or Preventing Cell Attachment

### Corning Ultra-Low Attachment Coated Polystyrene Surface

The Corning Ultra-Low Attachment surface uses a covalently bound hydrogel layer to inhibit cell attachment.

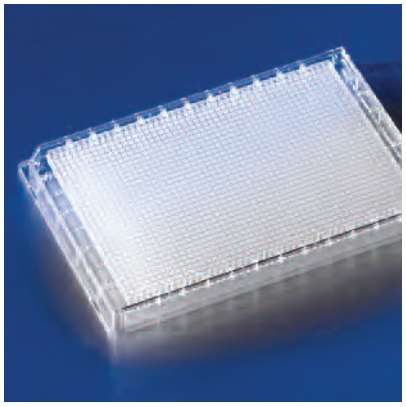
- Growing primary cultures of tumor or adult stem cells as unattached spheroids
- Preventing anchorage-dependent cells, such as fibroblasts, from attaching and dividing
- Promoting embryoid body formation from ES cells

| | Cell Culture Formats | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **Corning Cell Culture Surfaces** | **Flasks** | **Dishes** | **Multiple Well Plates** | **Microplates** | **Roller Bottles** | **CellSTACK® Chambers** | **CellCube® Chambers** | **Culture Tubes** |
| *For enhancing cell attachment:* | | | | | | | | |
| Original Tissue Culture Surface | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ |
| **Corning CellBIND Surface** | ■ | ■ | ■ | ■ | ■ | ■ | ■ | |
| **Ultra-Web Surfaces** | | ■ | | ■ | | | | |
| Poly-D-Lysine Coated Surface | | | | ■ | | | | |
| *For reducing or preventing cell attachment:* | | | | | | | | |
| **Ultra-Low Attachment Surface** | ■ | ■ | ■ | ■ | | ■ | | |
| Untreated Surface | | ■ | | ■ | | | | ■ |

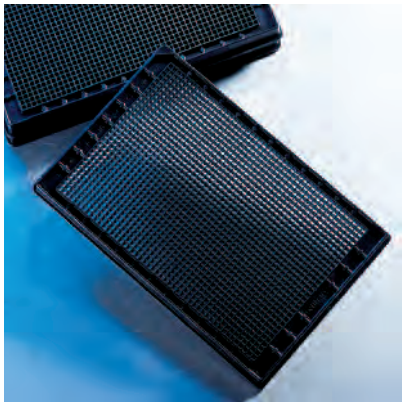
For more information or product numbers, reference the format categories within the Cell Culture section of this catalog.

# Microplates

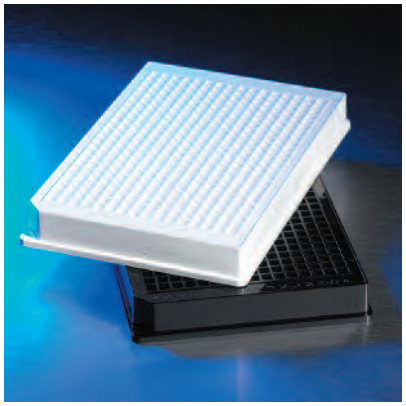




1536 Well Echo™ Qualified Microplates, page 62



1536 Well Black Clear Bottom Microplates, page 61



384 Well Low Flange Microplate, page 58

# Overview



## DESIGNED FOR PERFORMANCE

Corning has been setting the standard for excellence in life science labware for over 85 years. With our comprehensive line of plasticware, including assay products, we continue to be an industry leader. Corning strives for the highest standards in product design and plastics molding.

Corning Life Sciences microplates and accessories are manufactured under strict process controls guaranteeing consistent product performance. Our manufacturing facility is located in Kennebunk, Maine, registered to the ISO 9001 2000 standards. ISO registration is recognized worldwide as a standard of excellence for quality systems.

Customers can request a Certificate of Compliance for any Corning® microplate. Also available are detailed product descriptions and drawings that highlight product dimensions and testing procedures. All are available by contacting your local Corning Life Sciences office. See the back cover of this guide for a listing.

## CORNING MICROPLATE EQUIPMENT COMPATIBILITY PROGRAM

The increasing use of automated laboratory equipment demands consumables that have been qualified for fit and function. Corning microplates are designed with automation compatibility in mind and meet industry standards. In addition, Corning has a comprehensive equipment compatibility program in which leading equipment manufacturers certify the compatibility of our microplates with their instruments.

For the most up-to-date information on equipment compatibility, Corning maintains a *Microplate Equipment Compatibility Guide* on our web site at **www.corning.com/lifesciences**. This on-line guide is searchable by instrument type, plate type, and by manufacturer name.

## LIFE SCIENCES EARLY ACCESS TO DEVELOPMENT – CORNING'S L.E.A.D. PROGRAM

Corning is committed to meeting the rapidly evolving needs of the life sciences laboratory. We are continually developing new and innovative products that are compatible with the latest advances in technology and instrumentation. Our L.E.A.D. program gives researchers access to these products and special pricing prior to their full market release. Contact your local Corning Life Sciences office or representative for more information about the products currently available through this program.

## SELECTING THE BEST CORNING® MICROPLATE FOR YOUR APPLICATION

Corning offers a range of microplates in a variety of well designs and sizes, polymer materials and colors, and surface treatments. This guide includes 96, 384, and 1536 well microplates. Information on Corning plates in lower density formats (e.g., 24 and 48 well plates) can be found in our on-line product catalog at **www.corning.com/lifesciences**.

There are three simple steps for selecting the best Corning microplate for your application:

1. Choose the Corning microplate format and well design
2. Choose the Corning microplate material and color
3. Choose the Corning surface treatment

### 1 Choose the Corning Microplate Format and Well Design

Corning microplate dimensions meet industry standards, ensuring compatibility with all microplate equipment and automation. Our microplates feature an A-1 corner notch design. The A-1 corner notch allows for quick visual orientation of plates when setting up automation runs, thereby reducing chances for robotics problems and lost productivity.

Corning microplates are available in several well shapes, optimized to meet different application requirements.

- **Flat bottom** – for bottom reading plate readers and cell culture applications
- **Round bottom** – for improved mixing and washing
- **V-bottom** – for easier removal of total well contents
- **Easy Wash™ bottom** (round to narrowed flat well bottom) – for improved washing in immunoassays

In addition, Corning offers Half Area microplates for the 96 well format and Low Volume microplates for the 384 well format. These microplates are ideal for assays using reduced working volumes and can provide savings in reagent and compound use.

#### Well Shape Selection Chart

| | Microplate Format | | | | | | |
|---|---|---|---|---|---|---|---|
| Well Shape | 96 Well | 96 Well Stripwell™ | Half Area 96 Well | 384 Well | Low Volume 384 Well | 1536 Well | 2 µL 1536 Well |
| Flat bottom | ■ | ■ | ■ | ■ | ■ | ■ | |
| Round bottom | ■ | | | | ■ | ■ | ■ |
| V-bottom | ■ | | | | | | |
| Easy Wash bottom | ■ | | | | | | |

Detailed information about well volume, working volumes, and plate dimensions for Corning 96, 384, and 1536 well microplates are provided throughout this guide.

### 2 Choose the Corning Microplate Material and Color

Corning uses different polymers for microplates to support various application requirements. Selection of the appropriate polymer material and color can improve assay performance. Additional technical information on key polymers can be found in the appendix at the end of this guide.

#### Material Selection Chart

| | Microplate Format | | | | | | |
|---|---|---|---|---|---|---|---|
| Plate Material | 96 Well | 96 Well Stripwell | Half Area 96 Well | 384 Well | Low Volume 384 Well | 1536 Well | 2 µL 1536 Well |
| Clear polystyrene | ■ | ■ | ■ | ■ | | | ■ |
| Solid black or white polystyrene | ■ | ■ | ■ | ■ | ■ | ■ | ■ |
| Clear bottom black or white polystyrene | ■ | | ■ | ■ | ■ | ■ | |
| Polypropylene | ■ | | | ■ | | | |
| Solid black or white polypropylene | ■ | | | ■* | | | |
| Flexible vinyl (PVC) | ■ | | | | | | |
| UV | ■ | | ■ | ■ | | | |

*Only available in black polypropylene

Corning® microplates are available in different materials:

- **Clear polystyrene microplates** are used for cell culture and colorimetric (absorbance) assays.
- **Black and white polystyrene microplates** can be used for fluorescent and luminescent assays. Solid black polystyrene plates are designed to reduce well-to-well crosstalk and background for fluorescent assays. Solid white polystyrene plates are designed to reduce well-to-well crosstalk, enhance luminescent signals and reduce background for luminescent assays. Both black and white plates are available with clear bottoms for use in cell-based assays and microscopy applications, and allow top or bottom reading capabilities.
- **Polypropylene microplates** are ideal for compound storage or assays that require high resistance to solvents including DMSO and ethanol. The Corning ClearPro™ 96 well microplate is also available and has greater clarity than standard polypropylene for easier visual inspection of samples.
- **Black and white polypropylene microplates** can be used for fluorescent and luminescent assays and reduce nonspecific binding problems observed with polystyrene plates. The polypropylene material is also highly resistant to many commonly used solvents.
- **Flexible vinyl (PVC) microplates** are economical, nonsterile general assay 96 well plates. Due to their flexible nature, these microplates are not compatible with automation.
- **UV microplates** allow UV absorbance readings with low background especially at 260 to 280 nm, and are ideal for determining protein or nucleic acid concentration.

## 3 Choose the Corning Surface Treatment

Corning offers polystyrene microplates with a variety of modified surfaces. These surfaces can support binding or covalent immobilization of cells, proteins, nucleic acids, and other biomolecules. Additional information on these surfaces can be found in the Technical Appendix at the end of this guide.

### Surface Treatment Selection Chart

| | Microplate Format | | | | | | |
|---|---|---|---|---|---|---|---|
| Surface Treatment | 96 Well | 96 Well Stripwell™ | Half Area 96 Well | 384 Well | Low Volume 384 Well | 1536 Well | 2 µL 1536 Well |
| *For General Assay* | | | | | | | |
| Not Treated (medium binding) | ■ | ■ | ■ | ■ | ■ | ■ | ■ |
| High Binding | ■ | ■ | ■ | ■ | ■ | | ■ |
| Nonbinding (NBS™) | ■ | | ■ | ■ | ■ | ■ | |
| Sulfhydryl (Sulfhydryl-BIND™) Binding | ■ | ■ | | | | | |
| Carbohydrate (Carbo-BIND™) Binding | ■ | ■ | | | | | |
| Photo-reactive (Universal-BIND™) Binding | ■ | ■ | | | | | |
| Amine Binding | | ■ | | | | | |
| *For Cell Culture* | | | | | | | |
| Tissue Culture (TC) Treated | ■ | ■ | ■ | ■ | ■ | ■ | ■ |
| Ultra-Low Attachment | ■ | | | | | | |
| Corning® CellBIND® Surface | ■ | | | ■ | | | |
| Poly-D-Lysine | ■ | | | ■ | ■ | | |

Corning offers various surface treatments for microplates:

- **Not treated (or medium binding) polystyrene surface** is hydrophobic in nature and binds biomolecules through passive interactions. It is suitable primarily for the immobilization of large molecules, such as antibodies, that have large hydrophobic regions that can interact with the surface.
- **High binding surface** is capable of binding medium (>10 kD) and large biomolecules that possess ionic groups and/or hydrophobic regions.
- **Nonbinding surface (NBS)** is a Corning proprietary treatment technology used on polystyrene microplates to create a nonionic hydrophilic surface (polyethylene oxide-like) that minimizes molecular interactions. Ideal for reducing protein and nucleic acid binding at low concentrations, and increasing assay signal to noise.

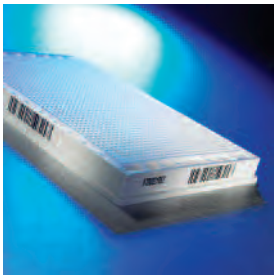
- **Corning® CellBIND® Surface** is a Corning proprietary treatment which provides improved consistency and even cell attachment.
- **Tissue culture treated (TC-Treated) surface** is used for the attachment and growth of anchorage-dependent cells.
- **Ultra-Low Attachment surface** has a covalently bonded hydrogel designed to minimize cell attachment, protein absorption, enzyme activation and cellular activation. This surface is noncytotoxic, biologically inert and nondegradable.
- **Poly-D-lysine coated surface** can improve attachment of difficult-to-attach cells.
- **Sulfhydryl (Sulfhydryl-BIND™) binding surface** has covalently-linked maleimide groups that covalently couple to sulfhydryl groups via SH moieties. Ideal for assays requiring site-directed orientation of a biomolecule, especially antibodies.
- **Carbohydrate (Carbo-BIND™) binding surface** has hydrazide groups covalently coupled to carbohydrate groups. Ideal for assays requiring site-directed orientation of a biomolecule (oxidized antibodies, carbohydrates, and glycosylated proteins) while maintaining enzymatic or immunological activity.
- **Photo-reactive (Universal-BIND™) surface** covalently immobilizes biomolecules via abstractable hydrogens using UV illumination, resulting in a carbon-carbon bond. Although linkage is nonspecific and does not allow for site-directed orientation of a biomolecule, this surface may be useful for immobilization of double stranded DNA, antigens of unknown structure, and mixtures of biomolecules (e.g., cell lysates).
- **Amine surface** has positively charged amine groups (2 x $10^{13}$ reactive sites/$cm^2$) that can be used for covalent immobilization via bifunctional crosslinkers.

## BAR CODE CUSTOMIZATION

New

### Generic Bar Codes

Corning now offers a line of generic bar coded plates to better meet the demands of your screening needs (see list of available plates on back).



Generic Bar Code Microplate

- No lead time: Plates are in stock and ready to ship
- Surface identification: The surface treatment of the microplate is identified in the human readable portion of the bar code:
  - NT = Non Treated
  - TC = Tissue Culture Treated
  - NB = Non Binding Surface
- Labels applied to all 4 sides of the microplate to ensure usability regardless of scanner location
- Each microplate is specially treated to reduce the impact of static build-up
- Code 128 bar code format ensures compatibility with most bar code scanning and software systems

### Custom Designed Bar Codes

Corning will assist in designing and implementing a bar code label to meet your exact specifications. We can provide bar code label test samples at the front end of a project, to confirm decodability and ensure flawless performance in your end-use process. Our other customization features include:

- Superior print quality and resolution
- Flexible bar code label positioning
- Resistant to most commonly used organic solvents

### Dependable Durability

Bar codes have been quality tested for optimal readability, chemical resistance, and temperature variation.

### Expert Advice

Most Corning® microplates are suitable for bar code customization. Contact Corning Life Sciences or your local representative for more information.

# 96 Well Microplates

Corning offers a complete line of 96 well microplates for laboratory miniaturization and automation. These microplates are available for different applications:

- 96 well assay microplates
  - General assays – Not treated, NBS™, covalent binding, high binding, flexible vinyl (PVC), and UV microplates
  - Cell-based assays – Tissue culture treated, Corning® CellBIND® Surface, poly-D-lysine, and Ultra-Low Attachment polystyrene microplates
  - Immunoassays – EIA/RIA polystyrene plates (medium and high binding)
- 96 well polystyrene Stripwell™ microplates
- 96 well polypropylene storage microplates and cluster tubes

This selection guide does not include 96 well microplates for PCR and genomics. Please refer to the Corning Genomics Selection Guide for information on these products (page 73).

For additional microplate information, refer to *Selecting the Best Corning Microplate for Your Application* in the Overview section of this guide (page 47).

## 96 WELL ASSAY MICROPLATES

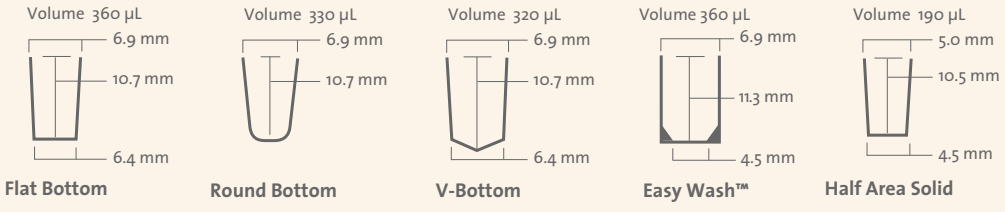
Corning offers a wide variety of assay microplates. They are organized into five groups:

- 96 Well Clear Polystyrene Microplates
- 96 Well Solid Black and White Polystyrene Microplates
- 96 Well Clear Bottom Black and White Polystyrene Microplates
- 96 Well UV Microplates
- 96 Well Clear Flexible Vinyl (PVC) Microplates

Corning 96 well polystyrene plates are offered in standard volume formats and in lower volume format (called Corning half area plates). Corning 96 well polystyrene microplates have plate dimensions (length x width x height) of 127.76 x 85.48 x 14.22 mm that meet proposed industry standards.

| 96 Well Plate Types | Well Bottom Shape | Total Well Volume (µL) | Recommended Working Volume (µL) |
|---|---|---|---|
| Standard 96 Well | Flat | 360 | 75 to 200 |
| Standard 96 Well | Round | 330 | 75 to 200 |
| Standard 96 Well | V | 320 | 75 to 200 |
| Standard 96 Well | Easy Wash™ | 360 | 75 to 200 |
| Half area 96 Well, Solid | Flat | 190 | 25 to 125 |
| Half area 96 Well, Clear Bottom | Flat | 205 | 25 to 125 |

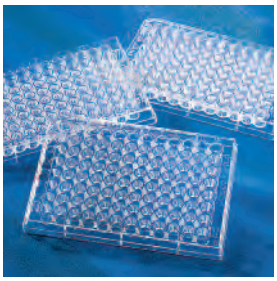
### 96 Well Geometry and Dimensions




Corning® tissue culture treated microplates have the same surface treatment used on other Corning culture vessels. In addition to this traditional surface, Corning offers three additional surfaces: Corning® CellBIND® surface treatment for improving consistency and even cell attachment, a poly-D-lysine coating for enhancing attachment of difficult-to-attach cell lines, and an Ultra-Low Attachment surface for minimizing cell attachment.

## 96 Well Clear Polystyrene Microplates

- Cell culture plates are sterilized by gamma radiation and certified nonpyrogenic
- Lids available where indicated (Information on lids and other microplate accessories can be found beginning on page 65.)



96 Well Clear Microplates

96 Well EIA/RIA Microplates

### 96 Well Clear Polystyrene Microplate Ordering Information

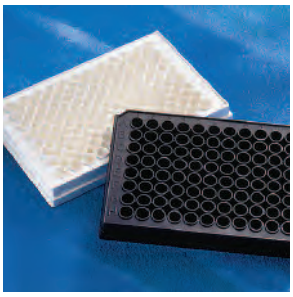
| Cat. No. | Plate Format | Well Bottom | Surface Treatment | Sterile | Qty/Pk | Qty/Cs |
|---|---|---|---|---|---|---|
| 3360 | Standard Plate, no Lid | Round | TC-Treated | Yes | 25 | 100 |
| 3366 | Standard Plate | Round | High Bind | No | 25 | 100 |
| 3367 | Standard Plate | Round | Not Treated | Yes | 1 | 50 |
| 3788 | Standard Plate, with Lid | Round | Not Treated | Yes | 20 | 100 |
| 3795 | Standard Plate | Round | Not Treated | Yes | 25 | 100 |
| 3798 | Standard Plate | Round | Not Treated* | No | 25 | 100 |
| 3797 | Standard Plate | Round | Not Treated | No | 25 | 100 |
| 3799 | Standard Plate, with Lid | Round | TC-Treated | Yes | 1 | 50 |
| 3894 | Standard Plate, with Lid | V | TC-Treated | Yes | 1 | 50 |
| 3896 | Standard Plate | V | Not Treated | Yes | 1 | 48 |
| 3897 | Standard Plate | V | Not Treated | No | 25 | 100 |
| 3898 | Standard Plate | V | Not Treated* | No | 25 | 100 |
| 2503 | Standard Plate | Flat | Universal-BIND™ | No | 1 | 50 |
| 2507 | Standard Plate | Flat | Carbo-BIND™ | No | 1 | 50 |
| 2509 | Standard Plate | Flat | Sulfhydryl-BIND™ | No | 1 | 50 |
| New 3300 | Standard Plate, with Lid | Flat | Corning® CellBIND® Surface | Yes | 5 | 50 |
| 3361 | Standard Plate, with Lid | Flat | High Bind | Yes | 20 | 100 |
| 3370 | Standard Plate, with Lid | Flat | Not Treated | Yes | 20 | 100 |
| 3474 | Standard Plate, with Lid | Flat | Ultra-Low Attachment | Yes | 1 | 24 |
| 3585 | Standard Plate, with Lid** | Flat | TC-Treated | Yes | 5 | 50 |
| 3590 | Standard Plate | Flat | High Bind | No | 1 | 100 |
| 3591 | Standard Plate | Flat | Not Treated | No | 1 | 50 |
| 3595 | Standard Plate, with Lid** | Flat | TC-Treated | Yes | 1 | 50 |
| 3596 | Standard Plate, with Lid | Flat | TC-Treated | Yes | 1 | 50 |
| 3598 | Standard Plate, with Lid | Flat | TC-Treated | Yes | 5 | 100 |
| 3599 | Standard Plate, with Lid | Flat | TC-Treated | Yes | 1 | 100 |
| 3628 | Standard Plate, with Lid | Flat | TC-Treated | Yes | 20 | 100 |
| 3641 | Standard Plate | Flat | NBS™ | No | 25 | 100 |
| 3665 | Standard Plate, with Lid | Flat | Poly-D-Lysine | Yes*** | 20 | 100 |
| 3997 | Standard Plate, with Lid | Flat | TC-Treated | Yes | 10 | 50 |
| 9017 | Standard Plate | Flat | Not Treated | No | 25 | 100 |
| 9018 | Standard Plate | Flat | High Bind | No | 25 | 100 |
| 3690 | Half Area Plate | Flat | High Bind | No | 25 | 100 |
| 3695 | Half Area Plate | Flat | Not Treated | No | 25 | 100 |
| 3696 | Half Area Plate, with Lid | Flat | TC-Treated | Yes | 1 | 50 |
| 3697 | Half Area Plate, with Lid | Flat | TC-Treated | Yes | 20 | 100 |
| 3368 | Standard Plate | Easy Wash™ | Not Treated | No | 25 | 100 |
| 3369 | Standard Plate | Easy Wash | High Bind | No | 25 | 100 |

*Processed to improve hydrophilicity for hemagglutination and similar assays.
**Special low evaporation lid
***Aseptically manufactured

### *Corning® CellBIND® Surface for Optimizing Cell-Based Assay Performance*

- Available in 96 and 384 well black clear bottom microplates and 96 well clear solid microplates
- Surface treatment improves consistency and more even cell attachment, and may improve attachment of difficult-to-attach cell lines
- Not a coating, requires no special handling, and is stable at room temperature
- Sterilized by gamma radiation and certified nonpyrogenic

## 96 Well Solid Black and White Polystyrene Microplates



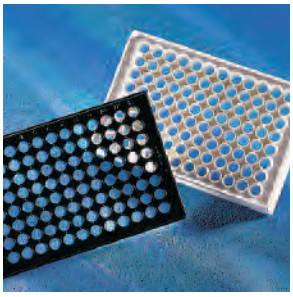
96 Well Black and White Polystyrene Microplates

- Designed to reduce well-to-well crosstalk
- White plates enhance luminescent signals and have low background luminescence and fluorescence
- Black plates have low background fluorescence and minimize light scattering

### 96 Well Solid Black and White Polystyrene Microplate Ordering Information

| Cat. No. | Plate Format | Plate Color | Well Bottom | Surface Treatment | Sterile | Qty/Pk | Qty/Cs |
|---|---|---|---|---|---|---|---|
| 3605 | Standard Plate | White | Round | NBS | No | 25 | 100 |
| 3789 | Standard Plate | White | Round | Not Treated | No | 25 | 100 |
| 3792 | Standard Plate | Black | Round | Not Treated | No | 25 | 100 |
| 3362 | Standard Plate, no Lid | White | Flat | TC-Treated | Yes | 25 | 100 |
| 3600 | Standard Plate | White | Flat | NBS™ | No | 25 | 100 |
| 3650 | Standard Plate | Black | Flat | NBS | No | 25 | 100 |
| 3912 | Standard Plate | White | Flat | Not Treated | No | 25 | 100 |
| 3915 | Standard Plate | Black | Flat | Not Treated | No | 25 | 100 |
| 3916 | Standard Plate, with Lid | Black | Flat | TC-Treated | Yes | 20 | 100 |
| 3917 | Standard Plate, with Lid | White | Flat | TC-Treated | Yes | 20 | 100 |
| 3922 | Standard Plate | White | Flat | High Bind | No | 25 | 100 |
| 3925 | Standard Plate | Black | Flat | High Bind | No | 25 | 100 |
| 3990 | Standard Plate | White | Flat | NBS | No | 5 | 25 |
| 3991 | Standard Plate | Black | Flat | NBS | No | 5 | 25 |
| 3642 | Half Area Plate | White | Flat | NBS | No | 25 | 100 |
| 3686 | Half Area Plate | Black | Flat | NBS | No | 25 | 100 |
| 3688 | Half Area Plate, with Lid | White | Flat | TC-Treated | Yes | 20 | 100 |
| 3693 | Half Area Plate | White | Flat | Not Treated | No | 25 | 100 |
| 3694 | Half Area Plate | Black | Flat | Not Treated | No | 25 | 100 |
| 3875 | Half Area Plate, with Lid | Black | Flat | TC-Treated | Yes | 20 | 100 |
| 3992 | Half Area Plate | White | Flat | NBS | No | 5 | 25 |
| 3993 | Half Area Plate | Black | Flat | NBS | No | 5 | 25 |

## 96 Well Clear Bottom Black and White Polystyrene Microplates



96 Well Clear Bottom Black and White Microplates

- Bottoms are 60% thinner than conventional polystyrene plates, resulting in lower background fluorescence and enabling readings down to 340 nm
- Opaque walls prevent well-to-well crosstalk
- Optically clear flat bottom permits direct microscopic viewing

### 96 Well Clear Bottom Black and White Polystyrene Microplate Ordering Information

| Cat. No. | Plate Format | Plate Color | Well Bottom | Surface Treatment | Sterile | Qty/ Pk | Qty/ Cs |
|---|---|---|---|---|---|---|---|
| New 3340 | Standard Plate, with Lid | Black | Flat | Corning® CellBIND® Surface | Yes | 5 | 50 |
| 3372 | Standard Plate, with Lid | Black | Flat | Poly-D-Lysine | Yes | 10 | 50 |
| 3601 | Standard Plate | Black | Flat | High Bind | No | 25 | 100 |
| 3603 | Standard Plate, with Lid | Black | Flat | TC-Treated | Yes | 1 | 48 |
| 3604 | Standard Plate | White | Flat | NBS | No | 25 | 100 |
| 3610 | Standard Plate, with Lid | White | Flat | TC-Treated | Yes | 1 | 48 |
| 3614 | Special Optics Plate, no Lid | Black | Flat | TC-Treated | Yes | 25 | 100 |
| 3615 | Special Optics Plate, with Lid | Black | Flat | Not Treated | No | 25 | 100 |
| 3631 | Standard Plate | Black | Flat | Not Treated | No | 25 | 100 |
| 3632 | Standard Plate | White | Flat | Not Treated | No | 25 | 100 |
| 3651 | Standard Plate | Black | Flat | NBS™ | No | 25 | 100 |
| 3666 | Standard Plate, with Lid | White | Flat | Poly-D-Lysine | Yes* | 20 | 100 |
| 3667 | Standard Plate, with Lid | Black | Flat | Poly-D-Lysine | Yes* | 20 | 100 |

### 96 Well Clear Bottom Black and White Polystyrene Microplate Ordering Information (Continued)

| Cat. No. | Plate Format | Plate Color | Well Bottom | Surface Treatment | Sterile | Qty/ Pk | Qty/ Cs |
|---|---|---|---|---|---|---|---|
| 3903 | Standard Plate, with Lid | White | Flat | TC-Treated | Yes | 20 | 100 |
| 3904 | Standard Plate, with Lid | Black | Flat | TC-Treated | Yes | 20 | 100 |
| 3995 | Standard Plate | White | Flat | NBS™ | No | 5 | 25 |
| 3998 | Standard Plate, with Lid | Black | Flat | Poly-D-Lysine | Yes | 5 | 25 |
| 3682 | Half Area Plate, with Lid | Black | Flat | Poly-D-Lysine | Yes | 10 | 50 |
| 3721 | Half Area Plate | Black | Flat | TC-Treated | Yes | 5 | 25 |
| 3880 | Half Area Plate | Black | Flat | Not Treated | No | 25 | 100 |
| 3881 | Half Area Plate | Black | Flat | NBS | No | 25 | 100 |
| 3882 | Half Area Plate, with Lid | Black | Flat | TC-Treated | Yes | 20 | 100 |
| 3883 | Half Area Plate | White | Flat | Not Treated | No | 25 | 100 |
| 3884 | Half Area Plate | White | Flat | NBS | No | 25 | 100 |
| 3885 | Half Area Plate, with Lid | White | Flat | TC-Treated | Yes | 20 | 100 |
| 3886 | Half Area Plate, no Lid | White | Flat | TC-Treated | Yes | 25 | 100 |
| 3887 | Half Area Plate, no Lid | Black | Flat | TC-Treated | Yes | 25 | 100 |
| 3994 | Half Area Plate | White | Flat | NBS | No | 5 | 25 |

*Aseptically manufactured

***Tip for Improving Optical Performance in Fluorescent Assays***

Corning® Special Optics 96 Well Microplates have black walls with ultra thin, clear bottoms for sharp, clear images and minimal background in fluorescent assays.

96 Well UV Microplate – Certified DNase- and RNase-free

## 96 Well UV Microplates

The Corning® 96 well UV microplate has a UV-transparent well bottom and is ideal for determining protein and/or nucleic acid concentrations.

- Certified DNase- and RNase-free
- UV-transparent bottom is molded directly to an acrylic base for greater strength and maximum leak resistance
- Total well volume: flat bottom – 360 µL; recommended working volume of 75 to 200 µL
- UV half area microplate has well volume of 205 µL; working volume of 25 to 125 µL
- Allows UV absorbance readings with low background, especially at 260 to 280 nm
- Lids are available separately. (Information on lids and other microplate accessories can be found beginning on page 65.)

### 96 Well UV Microplate Ordering Information

| Cat. No. | Plate Format | Well Bottom | Sterile | Qty/Pk | Qty/Cs |
|---|---|---|---|---|---|
| 3635 | Standard Plate | Flat | No | 25 | 50 |
| 3679 | Half Area Plate | Flat | No | 25 | 50 |

***Tip for Reducing Reagent Use***

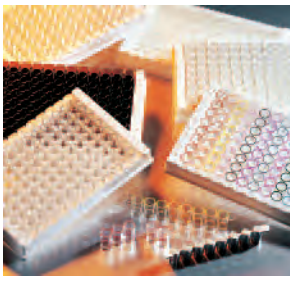
Corning 96 Well Half Area Microplates can save on valuable reagents by reducing the amount of reagent needed per well, while still retaining the ability to be read in standard plate readers. These microplates have a recommended working volume of 25 µL to 125 µL and are available untreated or with tissue culture, high bind, or NBS treatment.

## 96 Well Clear Flexible Vinyl (PVC) Microplates

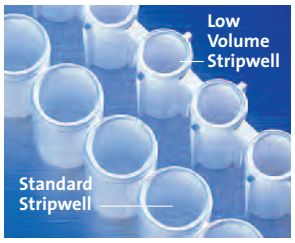
- Untreated PVC microplates are economical plates for solution-based assays, serial dilutions, and general storage applications.
- Well volume of 250 µL (260 µL for V-bottom); working well volume of 50 to 150 µL
- Lids are not available.

### 96 Well Clear Flexible PVC Microplate Ordering Information

| Cat. No. | Plate Format | Well Bottom | Sterile | Qty/Pk | Qty/Cs |
|---|---|---|---|---|---|
| 2797 | Standard Plate | Round | No | 25 | 100 |
| 2897 | Standard Plate | V | No | 25 | 100 |
| 2595 | Standard Plate | Flat | No | 25 | 100 |



Stripwell Microplates




Standard vs. Low Volume

### *Stripwell Low Volume Microplates*

**Big Cost Savings!**

- Save 70% or more on antibody costs
- Save 50% or more on reagent costs

**Features**

- Total well volume: 190 µL
- Recommended working volume: 75 to 125 µL
- Same height/path length as a standard strip
- Standard 96 well center-to-center spacing

**Custom Stripwell Microplate Colors**

white, dark blue, light green, light blue, teal, dark green, yellow, purple, red, orange, pink, black, brown, grey

## 96 WELL POLYSTYRENE STRIPWELL® MICROPLATES

Corning® Stripwell plates are designed for *in vitro* diagnostic assays. The flat bottom strips are designed to easily break apart and are pre-assembled in an "egg-crate" style strip holder that allows each individual well to be positioned back into the plate once broken.

- Stripwell plates have 96 well flat bottom polystyrene format
- Low volume and standard Stripwell microplates have well volumes of 190 µL and 360 µL, respectively
- 1 x 8 strips are designed to fit only one way into the strip holder, eliminating the chance of misorientation
- Accessories can be found beginning on page 65.

### Stripwell Microplates Ordering Information

*Stripwell Low Volume Microplates*

| Cat. No. | Color | Binding Property | Qty/Pk | Qty/Cs |
|---|---|---|---|---|
| 2480 | Clear | Medium | 25 | 100 |
| 2481 | Clear | High | 25 | 100 |
| 2482 | Black | Medium | 25 | 100 |
| 2483 | Black | High | 25 | 100 |
| 2484 | White | Medium | 25 | 100 |
| 2485 | White | High | 25 | 100 |

*Standard Stripwell Microplates*

| Cat. No. | Color | Binding Property | Qty/Pk | Qty/Cs |
|---|---|---|---|---|
| 2592* | Clear | High | 25 | 100 |
| 2593* | Clear | Medium | 25 | 100 |
| 2580** | Clear | High | 200 | 800 |
| 9102*** | Clear | TC-Treated, Sterile | 1 | 50 |
| 3913 | White | Medium | 25 | 100 |
| 3923 | White | High | 25 | 100 |
| 3914 | Black | Medium | 25 | 100 |
| 3924 | Black | High | 25 | 100 |

*Product has a certified surface chemistry
**Individual 1 x 8 Strips without frame, bulk packed
***Microplates individually packaged with lid

*Surface Modified Stripwell Microplates, Clear*

| Cat. No. | Description | Surface Chemistry | Well Volume | Qty/Pk | Qty/Cs |
|---|---|---|---|---|---|
| 2388 | Amine | Amine | 360 µL | 1 | 50 |
| 2504 | Universal-BIND™ Surface | Universal | 360 µL | 1 | 50 |
| 2506 | DNA-BIND™ Surface | N-oxysuccinimide | 360 µL | 1 | 50 |
| 2508 | Carbo-BIND™ Surface | Hydrazide | 360 µL | 1 | 50 |
| 2510 | Sulfhydryl-BIND™ Surface | Maleimide | 360 µL | 1 | 50 |

*Strip Accessories*

| Cat. No. | Description | Sterile | Qty/Pk | Qty/Cs |
|---|---|---|---|---|
| 2572 | Strip Holder "egg crate" | No | 5 | 20 |
| 2578 | 96 Well Strip Ejector | No | 5 | 5 |

### Color Coding

Corning offers customers the ability to color code their Stripwell microplates. Currently there are 14 colors available from which to choose on both our certified high and medium binding Stripwell plates. In addition to the clear strip, two other colors can be applied to the same plate. Color-coded Stripwell microplates are made to order and minimum order requirements do apply. If interested, please contact your local Corning representative.

# 96 WELL POLYPROPYLENE STORAGE MICROPLATES AND CLUSTER TUBES

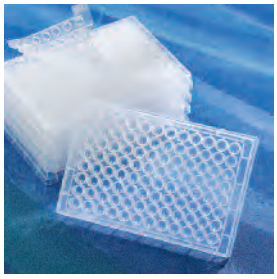
## 96 Well Polypropylene Microplates and Storage Blocks

Corning polypropylene microplates offer both small volume and large volume (blocks) well formats to meet assay and storage requirements.

- Flat, round or V-shaped well bottom
- Feature uniform skirt heights for greater robotic gripping surface
- Solvent resistant polypropylene provides compatibility with many common organic solvents (e.g., DMSO, ethanol, methanol)
- Certified DNase- and RNase-free
- Available sterile or nonsterile
- Refer to the Microplate Accessories section for information about microplate accessory products including sealing tapes and mats.

### 96 Well Polypropylene Microplate Dimensions and Well Volumes

| Well Shape | Total Well Volume (µL) | Well Depth (mm) | Well Diameter (mm) | Plate Dimensions (L x W x H) (mm) |
|---|---|---|---|---|
| 96 Well Flat Bottom | 360 | 10.67 | 6.86 | 127.76 x 85.48 x 14.22 |
| 96 Well Round Bottom | 360 | 11.3 | 6.86 | 127.76 x 85.48 x 14.22 |
| 96 Well V-bottom | 320 | 11.13 | 6.86 | 127.76 x 85.48 x 14.22 |
| 96 Well V-bottom, Expanded Volume | 450 | 12.43 | 8.50 | 127.76 x 85.48 x 14.35 |
| 96 Well 0.5 mL Block | 500 | 25.3 | 6.86 | 127.76 x 85.48 x 27.18 |
| 96 Well 1 mL Block | 1000 | 39.9 | 6.86 | 127.76 x 85.09 x 41.66 |
| 96 Well 2 mL Block | 2000 | 42.04 | 8.13 (width) | 128.27 x 85.85 x 43.94 |



Corning ClearPro Microplate (Cat. No. 3371) has higher clarity than standard polypropylene plates and allows users to visually inspect their samples in each well.

### 96 Well Polypropylene Microplate Ordering Information

| Cat. No. | Plate Format | Color | Well Bottom | Sterile | Qty/Pk | Qty/Cs |
|---|---|---|---|---|---|---|
| 3355 | Standard Plate | White | Round | No | 25 | 100 |
| 3356 | Standard Plate | Black | Round | No | 25 | 100 |
| 3359 | Standard Plate* | Clear | Round | Yes | 25 | 100 |
| 3365 | Standard Plate* | Clear | Round | No | 25 | 100 |
| 3371 | Corning® ClearPro™ Plate | Clear | Round | No | 25 | 100 |
| 3364 | Standard Plate | Clear | Flat | No | 25 | 100 |
| 3343 | Expanded Volume Plate | Clear | V | No | 10 | 50 |
| 3344 | Expanded Volume Plate | Clear | V | Yes | 10 | 50 |
| 3357 | Standard Plate | Clear | V | Yes | 25 | 100 |
| 3363 | Standard Plate | Clear | V | No | 25 | 100 |

*Upgraded features include: superior clear polypropylene, lowered perimeter ridge for improved sealing, and added rigidity and dimensional stability for improved automated handling.

96 Well Polypropylene Storage Blocks with Storage Mat

### 96 Well Polypropylene Storage Block Ordering Information

| Cat. No. | Plate Format | Well Volume | Well Bottom | Sterile | Qty/Pk | Qty/Cs |
|---|---|---|---|---|---|---|
| 3958 | 1 mL Round Well Block | 1 mL | Round | Yes | 5 | 25 |
| 3959 | 1 mL Round Well Block | 1 mL | Round | No | 5 | 100 |
| 3956 | 0.5 mL Round Well Block | 0.5 mL | V | Yes | 10 | 50 |
| 3957 | 0.5 mL Round Well Block | 0.5 mL | V | No | 100 | 100 |
| 3960 | 2 mL Square Well Block | 2 mL | V | Yes | 5 | 25 |
| 3961 | 2 mL Square Well Block | 2 mL | V | No | 5 | 100 |

Cluster Tube Systems

## 96 Well Cluster Tubes

- Composed of 96 polypropylene tubes in a standard microplate format
- Feature 1.2 mL tubes that are available individually or in strips of eight tubes
- Polyethylene tube caps are available in 8-cap strips

### 96 Well Cluster Tube Ordering Information

| Cat. No. | Format | Sterile | Rack | Qty/Pk | Qty/Cs |
|---|---|---|---|---|---|
| 4401 | Individual | No | No | 960/Bag | 960 |
| 4408 | 8-Tube Strip | No | No | 120/Bag | 120 |
| 4410 | Individual | No | Yes | 96/Rack | 960 |
| 4411 | Individual | Yes | Yes | 96/Rack | 960 |
| 4412 | 8-Tube Strip | No | Yes | 12/Rack | 120 |
| 4413 | 8-Tube Strip | Yes | Yes | 12/Rack | 120 |
| 4418 | 8-Cap Strip | Yes | No | 12/Bag | 120 |

# 384 Well Microplates

Corning offers a variety of 384 well microplates for high throughput assays and storage. Microplates are grouped by application:

- 384 well assay microplates
  - General assays – Not treated, NBS™, high binding, and UV microplates
  - Cell-based assays – Tissue culture treated, Corning® CellBIND® Surface, and poly-D-lysine coated polystyrene microplates
- 384 well polypropylene storage microplates

This selection guide does not include 384 well microplates for PCR and genomics. Please refer to the Corning Genomics Selection Guide (page 73) or web site (**www.corning.com/lifesciences**) for further information on these products.

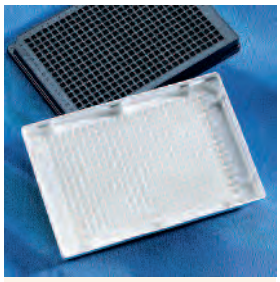
For additional microplate information, refer to *Selecting the Best Corning Microplate for Your Application* in the Overview section of this guide (page 47).

## 384 WELL ASSAY MICROPLATES

Corning offers a wide variety of assay microplates. They are organized into five groups:

- 384 Well Clear Polystyrene Microplates
- 384 Well Solid Black and White Polystyrene Microplates
- 384 Well Clear Bottom Black and White Polystyrene Microplates
- 384 Well UV Microplates

For assays performed in reduced volumes, Corning 384 well low volume polystyrene plates are available in solid round bottom and in black clear bottom formats.



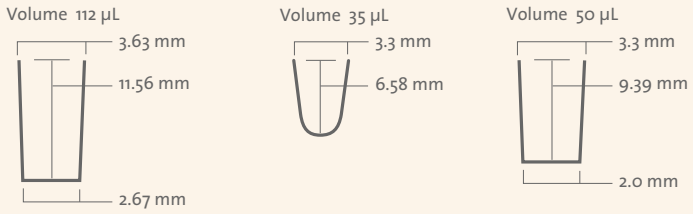
***Low Volume 384 Well Solid Round Bottom Microplates***

Unique well design for optimal assay performance

- Raised well bottom for higher sensitivity
- Raised rim for decreased wicking and contamination
- Round bottom for better Z factor and minimized trapped air
- Conical well molded in the shape of a light cone for efficiency

| 384 well plate types | Well Bottom Shape | Total Well Volume (µL) | Recommended Working Volume (µL) |
|---|---|---|---|
| Standard 384 well | Flat | 112 | 20 to 80 |
| Low volume 384 well, solid | Round | 35 | 5 to 20 |
| Low volume 384 well, clear bottom | Flat | 50 | 5 to 40 |

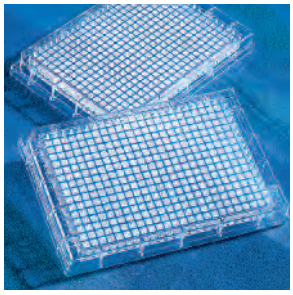
- Corning 384 well polystyrene microplates have plate dimensions (length x width x height) of 127.76 x 85.48 x 14.22 mm that meet proposed industry standards




**384 Well Geometry and Dimensions**

Corning 384 well microplates for cell culture include tissue culture treated, Corning CellBIND Surface, and poly-D-lysine coated microplates. The tissue culture treated microplates have the same surface treatment used on other Corning cell culture vessels while the poly-D-lysine treatment improves attachment of anchorage-dependent cells. The new Corning CellBIND Surface treatment can provide improved consistency and even cell attachment.

## 384 Well Clear Polystyrene Microplates



384 Well Clear Microplates

- Total well volume of 112 µL; working well volume of 20 to 80 µL
- Cell culture plates are sterilized by gamma radiation and certified nonpyrogenic
- The 384 well universal optics NBS™ plate is manufactured using an advanced polymer with high clarity and improved chemical resistant properties.
- Lids available as indicated. (Information on lids and other microplate accessories can be found beginning on page 65.)

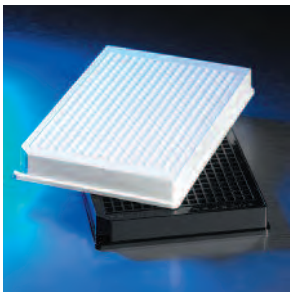
### 384 Well Clear Polystyrene Microplate Ordering Information

| Cat. No. | Plate Format | Well Bottom | Surface Treatment | Sterile | Qty/ Pk | Qty/ Qty/Cs |
|---|---|---|---|---|---|---|
| 3640 | Standard Plate | Flat | NBS | No | 25 | 100 |
| New 3640BC | Standard Plate with Bar Code Labels | Flat | NBS | No | 25 | 100 |
| 3662 | Clear Plate, with Lid | Flat | Poly-D-Lysine | Yes* | 20 | 100 |
| 3680 | Standard Plate, with Lid | Flat | Not Treated | Yes | 20 | 100 |
| 3700 | Standard Plate | Flat | High Bind | No | 25 | 100 |
| 3701 | Clear Plate, with Lid | Flat | TC-Treated | Yes | 20 | 100 |
| 3702 | Standard Plate | Flat | Not Treated | No | 25 | 100 |
| New 3702BC | Standard Plate with Bar Code Labels | Flat | Not Treated | No | 25 | 100 |
| 3723 | Universal Optics Plate (Standard) | Flat | NBS | No | 25 | 100 |

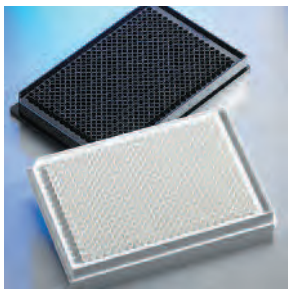
*Aseptically manufactured.

## 384 Well Solid Black and White Polystyrene Microplates

- Designed to reduce well-to-well crosstalk during fluorescent and luminescent assays



384 Well Solid Low Flange Microplates

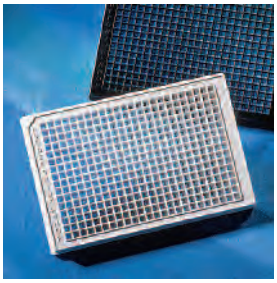


384 Well Low Volume Solid Microplates

### 384 Well Solid Black and White Polystyrene Microplate Ordering Information

| Cat. No. | Plate Format | Plate Color | Well Bottom | Surface Treatment | Sterile | Qty/ Pk | Qty/ Cs |
|---|---|---|---|---|---|---|---|
| 3673 | Low Volume Plate | White | Round | NBS | No | 25 | 100 |
| 3674 | Low Volume Plate | White | Round | Not Treated | No | 25 | 100 |
| 3676 | Low Volume Plate | Black | Round | NBS | No | 25 | 100 |
| 3677 | Low Volume Plate | Black | Round | Not Treated | No | 25 | 100 |
| 3678 | Low Volume Plate | Black | Round | High Bind | No | 25 | 100 |
| New 3570 | Solid White Plate, with Lid | White | Flat | TC-Treated | Yes | 10 | 50 |
| New 3571 | Solid Black Plate, with Lid | Black | Flat | TC-Treated | Yes | 10 | 50 |
| New 3572 | Standard Plate, Low Flange | White | Flat | Not Treated | No | 10 | 50 |
| New 3573 | Standard Plate, Low Flange | Black | Flat | Not Treated | No | 10 | 50 |
| New 3574 | Standard Plate, Low Flange | White | Flat | NBS | No | 10 | 50 |
| New 3574BC | Standard Plate, Low Flange with Bar Code Labels | White | Flat | NBS | No | 10 | 50 |
| New 3575 | Standard Plate, Low Flange | Black | Flat | NBS | No | 10 | 50 |
| New 3575BC | Standard Plate, Low Flange with Bar Code Labels | Black | Flat | NBS | No | 10 | 50 |
| New 3820 | Low Volume Plate | Black | Flat | NBS | No | 10 | 50 |
| New 3821 | Low Volume Plate | Black | Flat | Not Treated | No | 10 | 50 |
| New 3821BC | Low Volume Plate with Bar Code Labels | Black | Flat | Not Treated | No | 10 | 50 |
| New 3822 | Low Volume Plate, with Lid | Black | Flat | TC-Treated | Yes | 10 | 50 |
| New 3824 | Low Volume Plate | White | Flat | NBS | No | 10 | 50 |
| New 3824BC | Low Volume Plate with Bar Code Labels | White | Flat | NBS | No | 10 | 50 |
| New 3826 | Low Volume Plate with Lid | White | Flat | TC-Treated | Yes | 10 | 50 |
| New 3826BC | Low Volume Plate with Lid and Bar Code Labels | White | Flat | TC-Treated | Yes | 10 | 50 |

## 384 Well Clear Bottom Black and White Polystyrene Microplates



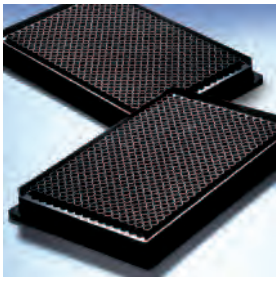
384 Well Clear Bottom Black and White Microplates

- Suited for fluorescent and luminescent assays using either top or bottom detection plate readers

### 384 Well Clear Bottom Black and White Microplate Ordering Information

| Cat. No. | Plate Format | Plate Color | Well Bottom | Surface Treatment | Sterile | Qty/ Pk | Qty/ Cs |
|---|---|---|---|---|---|---|---|
| 3540 | Low Volume | Black | Flat | Not Treated | No | 10 | 50 |
| 3542 | Low Volume, Clear Bottom Plate with Lid | Black | Flat | TC-Treated | Yes | 10 | 50 |
| 3544 | Low Volume | Black | Flat | NBS | No | 10 | 50 |
| New 3643 | Low Volume | Black | Flat | Poly-D-Lysine | Yes | 10 | 50 |
| 3653 | Standard Plate | White | Flat | NBS | No | 25 | 100 |
| 3663 | Clear Bottom Plate with Lid | White | Flat | Poly-D-Lysine | Yes* | 20 | 100 |
| 3664 | Clear Bottom Plate with Lid | Black, | Flat | Poly-D-Lysine | Yes* | 20 | 100 |
| 3655 | Standard Plate | Black | Flat | NBS | No | 25 | 100 |
| New 3683 | Clear Bottom Plate with Lid | Black | Flat | CellBIND® Corning® Surface | Yes | 10 | 50 |
| 3706 | Standard Plate | White | Flat | Not Treated | No | 25 | 100 |
| 3707 | Clear Bottom Plate with Lid | White | Flat | TC-Treated | Yes | 20 | 100 |
| 3711 | Standard Plate | Black | Flat | Not Treated | No | 25 | 100 |
| 3712 | Clear Bottom Plate with Lid | Black | Flat | TC-Treated | Yes | 20 | 100 |
| 3985 | Optical Imaging Plate with Clear Bottom and Lid | Black | Flat | TC-Treated | Yes | 20 | 100 |
| New 3895BC | Optical Imaging Plate with Clear Bottom, Lid and Bar Code Labels | Black | Flat | TC-Treated | Yes | 20 | 100 |

*Aseptically manufactured



384 Well Low Volume Black Clear Bottom Microplates

## 384 Well UV Microplate

- Offers certified performance at 260 to 280 nm
- Provides consistently low background and well to well uniformity
- Performance approaches that of quartz cuvettes. Certified DNase- and RNase-free

### 384 Well UV Microplate Ordering Information

| Cat. No. | Plate Format | Well Bottom | Sterile | Qty/Pk | Qty/Cs |
|---|---|---|---|---|---|
| 3675 | Standard Plate | Flat | No | 5 | 25 |

# 384 WELL POLYPROPYLENE STORAGE MICROPLATES

## 384 Well Polypropylene Storage Microplates

384 Well Polypropylene Storage Microplates

Corning polypropylene microplates offer both small volume and large volume (blocks) well formats to meet assay and storage requirements.

### 384 Well Polypropylene Microplate Dimensions and Well Volumes

| Well Shape | Total Well Volume (µL) | Well Depth (mm) | Well Diameter (mm) | Plate Dimensions (L x W x H) (mm) |
|---|---|---|---|---|
| 384 Well Low Volume Low Profile Plate | 20 | 6.30 | 3.30 | 127.76 x 85.48 x 10.00 |
| 384 Well Round Bottom Plate | 95 | 11.56 | 3.63 | 127.76 x 85.48 x 14.22 |
| 384 Well Round Bottom Block | 180 | 25.11 | 3.63 | 127.76 x 85.48 x 27.81 |
| 384 Well V-Bottom Block | 240 | 22.31 | 3.30* | 127.76 x 85.48 x 24.73 |

*Width of square well.

- Resistant to many common organic solvents (e.g., DMSO, ethanol, methanol)
- Black polypropylene microplate (Cat. No. 3658) is ideal for fluorescent assays requiring solvent resistance
- Certified DNase- and RNase-free
- Refer to the Microplate Accessories section for information about microplate accessory products including sealing tapes and mats.

### 384 Well Polypropylene Microplate Ordering Information

| Cat. No. | Plate Format | Well Bottom | Well Volume (µL) | Sterile | Qty/ Pk | Qty/ Cs |
|---|---|---|---|---|---|---|
| 3656 | Standard Plate, Clear | Round | 95 | Yes | 25 | 100 |
| 3657 | Standard Plate, Clear | Round | 95 | No | 25 | 100 |
| 3658 | Standard Plate, Black | Round | 95 | No | 25 | 100 |
| 3672 | Low Volume, Low Profile, Clear | Conical | 20 | No | 10 | 50 |

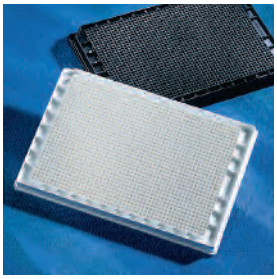
### 384 Well Polypropylene Storage Block Ordering Information

| Cat. No. | Plate Format | Well Bottom | Well Volume (µL) | Sterile | Qty/ Pk | Qty/ Cs |
|---|---|---|---|---|---|---|
| 3964 | 384 Well Block, Clear | Round | 180 | Yes | 5 | 25 |
| 3965 | 384 Well Block, Clear | Round | 180 | No | 5 | 100 |
| 3342 | 384 Well Block, Clear | V | 240 | Yes | 5 | 50 |
| 3347 | 384 Well Block, Clear | V | 240 | No | 5 | 50 |

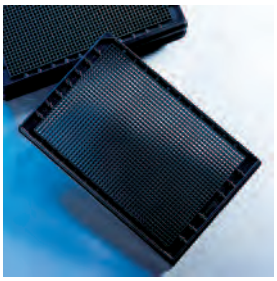
# 1536 Well Microplates

Corning® 1536 well microplates are our highest density microplates available for high throughput screening. The microplates conform to standard microplate footprint and dimensions. These microplates are offered in solid black and white polystyrene plates, with round or flat bottoms, and in black clear bottom formats.

Corning also offers a ultra-thin 1536 well microplate with a total well volume of 2 µL. This uniquely designed plate represents leading edge technology in assay miniaturization, with the length and width dimensions and microplate footprint meeting industry standards.



1536 Well Solid Round Bottom Microplates



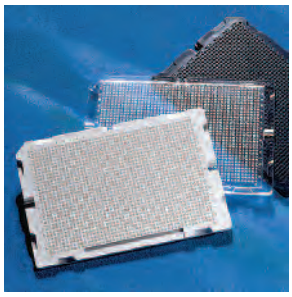
1536 Well Black Clear Bottom Microplates

## 1536 Well Standard Polystyrene Microplates

- Total well volume of 10 µL for round well plates and 12.8 µL for flat bottom plates
- Recommended working volume of up to 8 µL
- Round well bottoms for reduced air entrapment and improved CVs and Z factor
- Raised well bottoms for higher sensitivity
- Flood reservoir on four sides to reduce instrument contamination
- Lids are available separately. Corning lid Cat. No. 3098 is compatible with these plates. (Information on lids and other microplate accessories can be found beginning on page 65.)

### 1536 Well Polystyrene Microplate Ordering Information

| Cat. No. | Plate Format | Plate Color | Well Bottom | Surface Treatment | Sterile | Qty/ Pk | Qty/ /Cs |
|---|---|---|---|---|---|---|---|
| 3936 | Standard Plate | Black | Round | Not Treated | No | 10 | 50 |
| 3937 | Standard Plate | White | Round | Not Treated | No | 10 | 50 |
| 3724 | Standard Plate | Black | Flat | Not Treated | No | 10 | 50 |
| New 3724BC | Standard Plate with Bar Code Labels | Black | Flat | Not Treated | No | 10 | 50 |
| 3725 | Standard Plate | White | Flat | Not Treated | No | 10 | 50 |
| New 3725BC | Standard Plate with Bar Code Labels | White | Flat | Not Treated | No | 10 | 50 |
| 3726 | Standard Plate with Lid | Black | Flat | TC-Treated | Yes | 10 | 50 |
| 3727 | Standard Plate with Lid | White | Flat | TC-Treated | Yes | 10 | 50 |
| New 3727BC | Standard Plate, with Lid and Bar Code Labels | White | Flat | TC-Treated | Yes | 10 | 50 |
| 3728 | Standard Plate | Black | Flat | NBS™ Surface | No | 10 | 50 |
| New 3728BC | Standard Plate with Lid and Bar Code Labels | Black | Flat | NBS Surface | No | 10 | 50 |
| 3729 | Standard Plate | White | Flat | NBS Surface | No | 10 | 50 |
| New 3729BC | Standard Plate with Bar Code Labels | White | Flat | NBS Surface | No | 10 | 50 |
| 3891 | Clear Bottom | Black | Flat | Not Treated | No | 10 | 50 |
| New 3891BC | Clear Bottom with Bar Code Labels | Black | Flat | Not Treated | No | 10 | 50 |
| 3893 | Clear Bottom with Lid | Black | Flat | TC-Treated | Yes | 10 | 50 |
| New 3893BC | Clear Bottom with Lid and Bar Code Labels | Black | Flat | TC-Treated | Yes | 10 | 50 |
| 3895 | Clear Bottom | Black | Flat | NBS Surface | No | 10 | 50 |



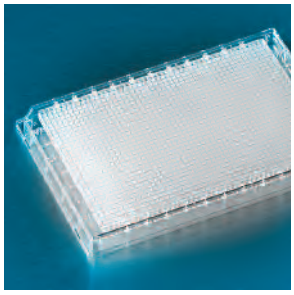
1536 Well 2 µL Polystyrene Microplates

## 1536 Well 2 µL Polystyrene Microplates

- A variety of assays, including enzyme assays, receptor-ligand assays, and cell-based assays have been effectively performed in these plates.
- Recommended working volume of up to 1.5 µL
- The plates are demarcated in a 8 x 12 array with each square containing 16 wells
- Eight extra wells on both the left and right sides of the plate that can be used to run controls
- Series of notches that allow stacked plates to be easily separated from one another
- Lids are available separately, Cat. No. 3849. (Information on lids and other microplate accessories can be found beginning on page 65.)

### 1536 Well 2 µL Polystyrene Microplate Ordering Information

| Cat. No. | Plate Format | Color | Well Bottom | Surface Treatment | Sterile | Qty/Pk | Qty/Cs |
|---|---|---|---|---|---|---|---|
| 3850 | Low Volume Plate | Clear | Flat | Not Treated | No | 20 | 100 |
| 3851 | Low Volume Plate | Black | Flat | Not Treated | No | 20 | 100 |
| 3852 | Low Volume Plate | White | Flat | Not Treated | No | 20 | 100 |
| 3853 | Low Volume Plate | Clear | Flat | TC-Treated | Yes | 20 | 100 |
| 3854 | Low Volume Plate | Black | Flat | TC-Treated | Yes | 20 | 100 |
| 3855 | Low Volume Plate | White | Flat | TC-Treated | Yes | 20 | 100 |
| 3857 | Low Volume Plate | White | Flat | High Bind | No | 20 | 100 |
| 3858 | Low Volume Plate | Clear | Flat | High Bind | No | 20 | 100 |



1536 Well Echo Microplate

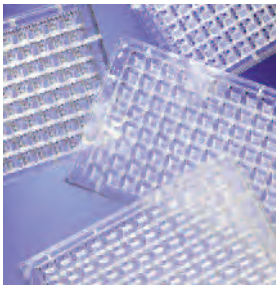
## 1536 Well Echo™ Qualified Microplate

- Corning-Labcyte joint development delivers optimal acoustic performance on the Labcyte Echo 550 Compound Reformatter
- Plates lot tested and certified to meet performance specifications
- Enhanced flatness provides low intra- and inter-plate CVs
- Low flange base is designed for bar code customization and robotic handling

### Corning® 1536 Well Echo Qualified COC Microplate Ordering Information

| Cat No. | Description | Well Bottom | Surface | Sterile | Qty/Pk | Qty/Cs |
|---|---|---|---|---|---|---|
| New 3730 | 1536 Well Clear COC Plate | Flat | Not Treated | No | 10 | 50 |

# Protein Crystallization Microplates



96 Well Crystal*EX* Microplates

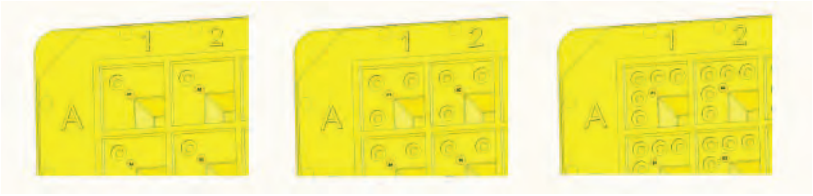
- Corning® 96 and 384 well crystallization microplates are optimized for high throughput protein crystal growth and screening
- Designed for sitting drop applications
- Meet 96 and 384 well microplate standards for automation

## Next Generation Crystal*EX*™ Microplates for 96 Well High Throughput Sitting Drop Protein Crystallization

- Conforms to SBS specifications for full compatibility in automated crystal screening
- Multiple formats and versatility for custom options to maximize crystal formation, identification and analysis, and harvesting
  - Choose from five unique protein well shapes
  - Available in two materials, including a special zero polarization polymer (PZero)
  - Options include 1, 3, or 5 protein wells per reservoir well
- PZero polymer is superior for zero background polarization and nonbirefringence
- COC polymer offers strong chemical compatibility and good optical clarity
- Reservoir numbers are embossed on each individual well for easy identification

## Next Generation Crystal*EX* Microplate Designs

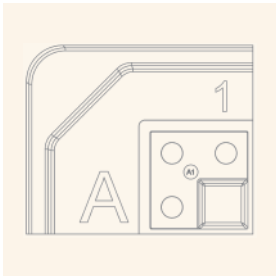
One reservoir well is flanked by either one, three, or five protein wells, with SBS-standard spacing between the centers of adjacent well clusters.




1 Protein Well
1 Reservoir

3 Protein Wells
1 Reservoir

5 Protein Wells
1 Reservoir




Alphanumeric markers in each well cluster for easy identification under the microscope.

Five different protein well shapes are available:

Round Bottom

Conical Flat Bottom

Flat Bottom

2 µL Conical Flat – Crystal Cup*

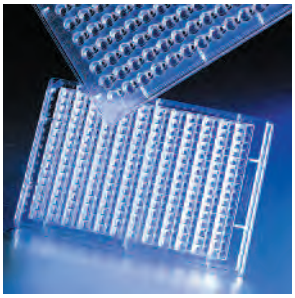
1 µL Conical Flat – Crystal Cup*

*The crystal cup facilitates collection and centering of the protein crystals after incubation.

### Corning Next Generation Crystal*EX* Microplates Ordering Information

| Cat. No. | Protein Well Size | Protein Well Shape | No. of Protein Wells | Material | Treated | Qty/ Pk | Qty/ Cs |
|---|---|---|---|---|---|---|---|
| 3556 | 4 µL | Round | 1 | COC | No | 10 | 50 |
| 3551 | 4 µL | Conical flat | 1 | COC | Yes* | 10 | 50 |
| 3840 | 2 µL | Conical flat | 3 | COC | No | 10 | 50 |
| 3552 | 2 µL | Round | 3 | PZero | No | 10 | 50 |
| 3553 | 2 µL | Conical flat | 3 | PZero | No | 10 | 50 |
| 3554 | 2 µL | Flat | 3 | PZero | No | 10 | 50 |
| 3555 | 2 µL | Conical flat – crystal cup | 3 | PZero | No | 10 | 50 |
| 3550 | 1 µL | Conical flat – crystal cup | 3 | PZero | No | 10 | 50 |
| 3557 | 1 µL | Conical flat – crystal cup | 5 | PZero | No | 10 | 50 |

*Surface processed for hydrophilicity.



96 and 384 Well Protein Crystallization Microplates

## 96 Well Crystal*EX*™ Crystallization Microplates

- Features 96 large reservoir (reagent) wells and 96 corresponding protein wells
- Conical bottom protein wells allow for improved centering of the protein drop
- Compatible with manual pipettors and automation
- Novel merged well design provides efficient vapor space for protein crystallization

## 384 Well Crystal*EX* Crystallization Microplates

- Meets industry standards for 384 well microplate footprint and well locations
  - Ideal for fully automated crystal screening
- Features 192 reservoir wells and 192 corresponding protein wells
- Flat bottom protein wells are optimized for imaging of crystals
- Reservoir and protein wells are positioned to be compatible with multi-head dispensing equipment (up to 96 well heads)

### 96 and 384 Well Crystal*EX* Crystallization Microplate Ordering Information

| Cat. No. | Plate Format | Reservoir Well Volume (µL) | Protein Well Volume (µL) | Sterile | Qty/ Pk | Qty/ Cs |
|---|---|---|---|---|---|---|
| 3773 | 96 Well Plate, Conical Bottom | 210 | 10 | No | 10 | 50 |
| 3785* | 96 Well Plate, Conical Flat Bottom, Treated | 210 | 7 | No | 10 | 50 |
| 3775 | 384 Well Plate, Flat Bottom | 100 | 3.4 | No | 10 | 50 |

*Surface processed for hydrophilicity

96 Well Crystallization Microplate with Universal Optical Sealing Tape

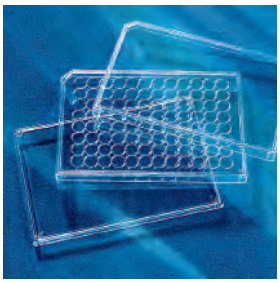
## Universal Optical Sealing Tape for Next Generation Crystal*EX* and Crystal*EX* Microplates

- High optical quality, pressure-sensitive tape ensures tight sealing to minimize evaporation
- Ideal for microscopic observation of crystals
- Suitable for use between -70°C and 100°C
- Compatible with commonly used aqueous solutions and organic solvents

### Accessory for Next Generation Crystal*EX* and Crystal*EX* Microplates

| Cat. No. | Description | Qty/Pk | Qty/Cs |
|---|---|---|---|
| 6575 | Universal Optical Sealing Tape | 100 | 100 |

# Microplate Accessories



Lids

***Optimizing Sealing Conditions on Corning Polypropylene Microplates***

Corning offers an application note (Corning Literature No. ALSP-AN-011) describing effective sealing with the ABgene® ALPS-100 automated plate sealer.

## Lids

- All lids are made of rigid polystyrene except where indicated
- All lids have a corner notch on the A1 corner (except where indicated) to correspond to the corner notches found on all Corning® microplates
- The Universal Lid without a corner notch (Cat. No. 3098) does not need to be oriented in any particular direction to be placed on Corning plates. The lid also has a shorter skirt than standard lids
- The black Universal Lid (Cat. No. 3935) is suitable for fluorescent and other light-sensitive assays
- The DMSO-resistant cyclic-olefin lid (Cat. No. 3085) is tinted amber in color for light-sensitive assays and is 100% DMSO-resistant

### Microplate Lid Ordering Information

| Cat. No. | Description | Plate Compatibility | Sterile | Qty/ Pk | Qty/ Cs |
|---|---|---|---|---|---|
| 3930 | Low Evaporation Lid with Corner Notch and Condensation Rings | 96 well microplates only (not 2 mL block) | Yes | 1 | 100 |
| 3931 | Low Evaporation Lid with Corner Notch and Condensation Rings | 96 well microplates only (not 2 mL block) | Yes | 25 | 50 |
| 3098 | Universal Lid without Corner Notch | All microplates | Yes | 25 | 100 |
| 3099 | Universal Lid with Corner Notch | All microplates | Yes | 25 | 50 |
| 3935 | Black Universal Lid with Corner Notch | All microplates | Yes | 25 | 50 |
| 3085 | DMSO-resistant Cyclic-olefin Lid without Corner Notch | All microplates | No | 25 | 50 |
| 3849 | 1536 Well 2 µL Lid | 2 µL 1536 Well Microplates only | Yes | 20 | 100 |

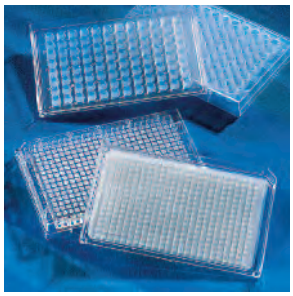
Corning Storage Mat Applicator

## Storage Mats and Accessories

- Multiple formats are offered for specific and precise fit on 96 and 384 well plates and blocks
- Storage Mats Cat. Nos. 3080 and 3083 are manufactured from DMSO-resistant EVA (ethyl vinyl acetate) polymer
- Certified DNase- and RNase-free
- Can be applied manually or with Storage Mat Applicator

### Storage Mats and Accessories Ordering Information

| Cat. No. | Description | Sterile | Qty/Pk | Qty/Cs |
|---|---|---|---|---|
| 3080 | Round Well Storage Mat for 96 Well Plates and Blocks | No | 25 | 100 |
| 3083 | Square Well Storage Mat for Corning 2 mL Square Blocks | No | 1 | 50 |
| 3346 | Storage Mat for Expanded Volume 96 Well Microplates | No | 10 | 50 |
| 3341 | Storage Mat for 384 Well V-Bottom Blocks | No | 10 | 50 |
| 3081 | Storage Mat Applicator | N/A | 1 | 1 |



96 and 384 Well Robolids

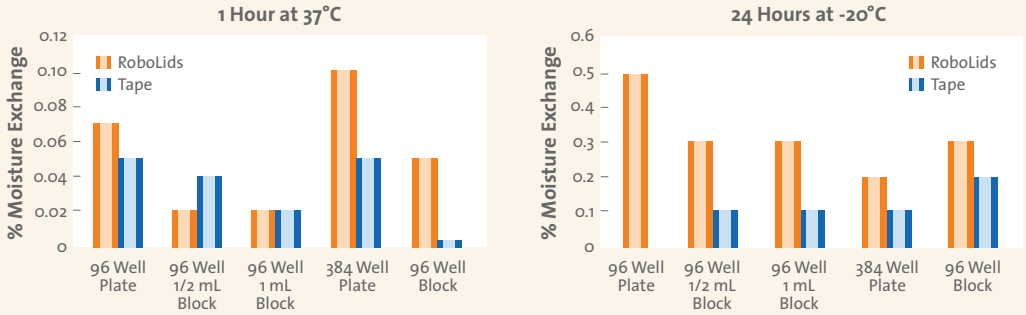
## Robolids

- Combines the sealing ability of a storage mat with the rigidity of a plastic lid
- Designed for repeated application and removal by automation and to prevent short-term evaporation
- Silicone sealing plugs for organic solvent resistance and low extractables
- Can be used manually or with automation

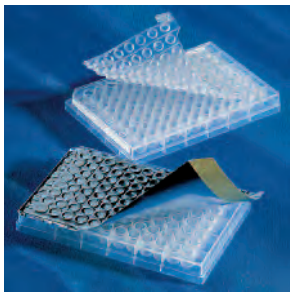
### Robolid Ordering Information

| Cat. No. | Description | Sterile | Qty/Pk | Qty/Cs |
|---|---|---|---|---|
| 3090 | 96 Well Robolid with Corner Notch | No | 25 | 50 |
| 3089 | 384 Well Robolid with Corner Notch | No | 25 | 50 |

### Moisture Exchange with Corning® Robolids




Using 100% DSMO, graphs represent the percentage of moisture exchange over a period of time and at various temperatures using aluminum sealing foil and the Robolid. Results show the 96 and 384 well Robolid having comparable results with the aluminum foil. Robolids validated for low percentage of moisture exchange similar to that of foil; the product is not recommended to be used in applications requiring an integral seal.



Sealing Mats and Tapes

## Sealing Tapes

- Easy application and removal for short- and long-term storage
- Provide tight seal to minimize evaporation and condensation
- Acetate Sealing Tape (Cat. No. 3095) is suitable for use between -16°C and 38°C, is transparent, and is not pierceable
- Aluminum Sealing Tape (Cat. No. 6569, 6570) is suitable for use between -80°C and 150°C, is not transparent, and is pierceable
- Breathable Sealing Tape (Cat. No. 3345) allows gas exchange across the surface
- Universal Optical Sealing Tape (Cat. No. 6575) is suitable for use between -70°C and 100°C, and is transparent

### Sealing Tape Ordering Information

| Cat. No. | Description | Sterile | Qty/Pk | Qty/Cs |
|---|---|---|---|---|
| 3095 | Acetate Sealing Tape for all Microplates | No | 100 | 100 |
| 6524 | Polyethylene Sealing Tape | No | 100 | 100 |
| 6570 | Aluminum Sealing Tape for 96 Well Microplates | No | 100 | 100 |
| 6569 | Aluminum Sealing Tape for 384 Well Microplates | No | 100 | 100 |
| 3345 | Breathable Sealing Tape | Yes | 50 | 500 |
| 6575 | Universal Optical Sealing Tape | No | 100 | 100 |

# Technical Appendix

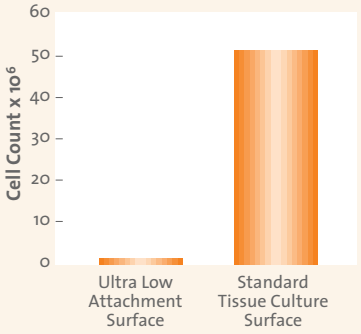
## Corning® Assay Surface Properties and Applications

| Corning Surface | Applications | Binding Interaction | Sample Properties | Performance Criteria |
|---|---|---|---|---|
| **FOR BIOCHEMICAL ASSAYS** | | | | |
| NBS™ coated polystyrene surface | ▸ SPA assays<br>▸ Homogeneous assays | None – Inhibits hydrophobic and ionic interactions | Significantly reduces (<2 ng/cm²) protein and nucleic acid binding | 95% reduction of nonspecific binding of protein compared to untreated polystyrene |
| Medium Binding (Untreated) modified polystyrene surface | ▸ Homogeneous and heterogeneous assays | Hydrophobic | Large biomolecules >20kD with large or abundant hydrophobic regions | 96w clear: Well to well CV ≤ 5%<br>96w black: Well to well CV ≤ 15% (HT)<br>Well to well CV ≤ 3% (HO)<br>96w white: Well to well CV ≤ 8% (HT)<br>Well to well CV ≤ 5% (HO)<br>384w clear: Well to well CV ≤ 10% (HT)<br>384w black and white:<br>Well to well CV ≤ 15% (HT)<br>Well to well CV ≤ 5% (HO) |
| High Binding modified polystyrene surface | ▸ ELISA and other heterogeneous assays | Hydrophobic and ionic (negatively charged) | Improves binding of medium to large biomolecules (>10kD) that are positively charged with or without hydrophobic regions. | 96w clear: Well to well CV ≤ 3%<br>96w black: Well to well CV ≤ 8%<br>96w white: Well to well CV ≤ 10%<br>384w clear: Well to well CV ≤ 10%<br>384w black and white:<br>Well to well CV ≤ 15% |
| Aminated-modified polystyrene surface | ▸ Used with bifunctional crosslinkers (i.e., glutaraldehyde, carbodiimide) to covalently couple to functional groups (primary amines, thiols, and carboxyls) on biomolecules. | Hydrophilic and ionic (positively charged); allows covalent immobilization | Small negatively charged biomolecules OR biomolecules possessing an appropriate functional amine, carboxyl or thiol group. | CV ≤ 5%<br>Percent Covalent Coupling ≥ 95% |
| DNA-BIND® modified polystyrene surface | ▸ Immobilization of aminated DNA for use in nucleic acid hybridization assays and solid-phase PCR<br>▸ Immobilization of peptides and other small primary amine containing molecules | Allows covalent immobilization to amine groups via binding to NOS groups | Small to medium biomolecules, especially DNA, possessing an available amine group. | CV ≤ 15% |
| Sulfhydryl-BIND™ modified polystyrene surface | ▸ Assays requiring site-directed orientation of a particular biomolecule, especially antibodies | Allows covalent immobilization via SH moieties on maleimide groups | Biomolecules possessing an accessible sulfhydryl group or reducible disulfide bond. | CV ≤ 15%<br>Activated/NonActiviated ≥ 2.0<br>Activated = reduced disulfide bonds |
| Carbo-BIND™ modified polystyrene surface | ▸ Assays requiring site-directed orientation of a particular biomolecule (oxidized antibodies, carbohydrates and glycosylated proteins) while maintaining enzymatic or immunological activity | Allows covalent immobilization via binding to hydroxide groups | Biomolecules possessing carbohydrate moieties available for periodate activation. | CV ≤ 15%<br>Activated/Non-activated ≥ 3.0<br>Activated = periodate activation |
| Universal-BIND™ modified polystyrene surface | ▸ Immobilization of double-stranded DNA<br>▸ Immobilization of antigens of unknown structure (available functional groups unidentified)<br>▸ Immobilization of samples containing a mixture of biomolecules, such as cell lysate samples<br>▸ Immobilization of other nonproteinaceous molecules, such as glycolipids | Allows covalent immobilization via UV cross-linking to abstractable hydrogen | Biomolecules with abstractable hydrogen. | CV ≤ 15%<br>Activated/Non-Activated ≥ 2.0<br>Activated – by UV |
| **FOR CELL-BASED ASSAYS** | | | | |
| Standard Tissue Culture Surface | ▸ Assays using standard attachment dependent cell lines | Hydrophilic and ionic interactions (negatively charged) | Allows cell attachment and binding | ≥95% confluency (attachment dependent cell line) |
| Corning® CellBIND® Surface | ▸ Assays for difficult to attach cells<br>▸ Help cells stay attached during washing steps | Hydrophilic and ionic interactions (negatively charged) | Enhances cell attachment uniformity and binding to polystyrene | 96 Well Plates: CV ≤10%; Wells with cells/wells without cells – 2X signal from MTS assay<br>384 Well Plates: CV ≤20%: Wells with cells/wells without cells – 2X signal from MTS assay |
| Poly-D-Lysine-Coated Surface | ▸ Assays for difficult to attach cells<br>▸ Help cells stay attached during washing steps | Hydrophilic and ionic interactions (positively charged) | Enhances cell attachment and binding | 96 Well: CV ≤15%;<br>PDL/TCT ≤2.0 serum free HEK cells<br>384 Well: CV ≤ 20%;<br>PDL/TCT ≥1.5 serum free HEK cells |
| Ultra-Low Attachment Surface | ▸ Assays where preventing cell attachment is required<br>▸ Hybridoma production and clonal isolation by limiting dilution | Nonionic hydrogel layer reduces or eliminates ionic and hydrophobic binding | Prevents or reduces cell attachment and binding | ≥95% cell attachment inhibition |
| Ultra-Web™ Surface | ▸ Assays where cell attachment or performance is enhanced by using a 3D surface | Hydrophilic interactions on a 3D surface | Enhances cell attachment and performance | |
| Ultra-Web Polyamine Surface | ▸ Assays where cell attachment or performance is enhanced by using a 3D surface | Hydrophilic and ionic interactions (positively charged) on a 3D surface | Enhances cell attachment and performance | |

# Technical Appendix (CONTINUED)



**Corning® Ultra-Low Attachment Microplate** (Cat. No. 3474) has a covalently bonded hydrogel layer to minimize cell attachment, protein absorption, enzyme activation and cellular activation. The surface is noncytotoxic, biologically inert, and nondegradable.




**Comparison of Cell Attachment in Ultra-Low vs. Standard Tissue Culture Treated Plates**

Vero cells plated at 2.6 x $10^6$ cells per well grown for 4 days at 37°C in a 5% $CO_2$ environment show a 99% reduction in cellular attachment vs. standard culture treated product.

## High Binding Plate Certification of Corning EIA/RIA Microplates

Corning offers 96 well EIA/RIA plates and Stripwell™ microplates manufactured from a special medical grade polystyrene for uniform binding, high optical clarity, and low background absorption.

| Certification Standards | High Binding | Medium Binding (Not Treated) |
|---|---|---|
| Well-to-well coefficient of variation (CV) | ≤3% | ≤5% |
| Average high and low wells from the mean | ≤8% | ≤15% |
| Background absorbance units from the mean | ±0.005 | ±0.005 |

Corning high binding plates have a binding capacity of approximately 500 ng of mouse IgG/$cm^2$. The nontreated plates have a binding capacity of approximately 250 ng of Mouse IgG/$cm^2$. Corning tests its EIA/RIA plates on a lot-to-lot basis and the certification results for each lot are made available upon request by contacting your local Corning Life Sciences office. In addition, five ELISA Technical Bulletins are available at **www.corning.com/lifesciences**.

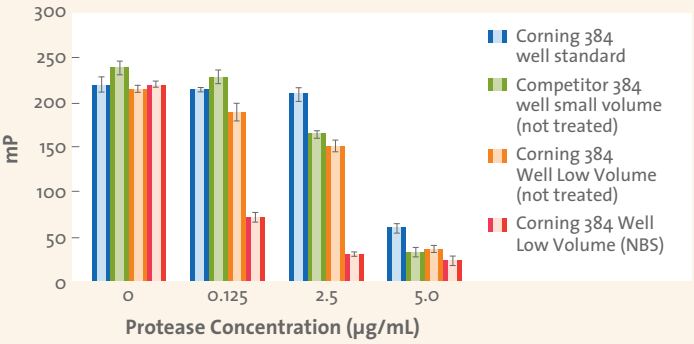
## NBS Binding Performance

NBS microplates have a nonionic hydrophilic well surface, and are ideal for minimizing protein binding in homogeneous assays.

| Binding in ng/$cm^2$ | $^{125}$I-IgG | $^{125}$I-BSA | $^{125}$I-Insulin | $^{32}$P-oligo DNA | $^{32}$P-λ phage DNA |
|---|---|---|---|---|---|
| Polystyrene | 400 | 450 | 310 | 22 | 6 |
| Polypropylene | 380 | 440 | 370 | 3 | <2 |
| NBS on Polystyrene | <2.5 | <2.5 | 5 | <2 | <2 |

## Benefits of NBS™ on Homogeneous Assays

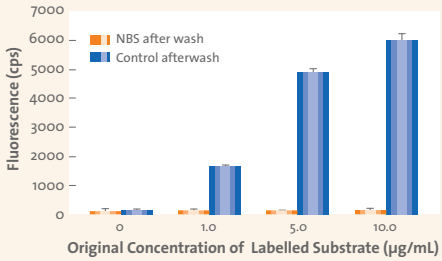
### Fluorescence-based Assay Performance with Corning® NBS™ Low Volume Microplates




**Higher Sensitivity for Fluorescence Polarization Assays with 384 Well Corning NBS Low Volume Microplates (Cat. No. 3676)**

Data demonstrates *Streptomyces griseus* protease activity on BODIPY fluorescent labeled (FL) casein substrate. Protease activity is measured as a reduction in millipolarization (mP) units. A significant reduction in fluorescence polarization was observed at the lowest concentration of enzyme in a 10 µL volume.

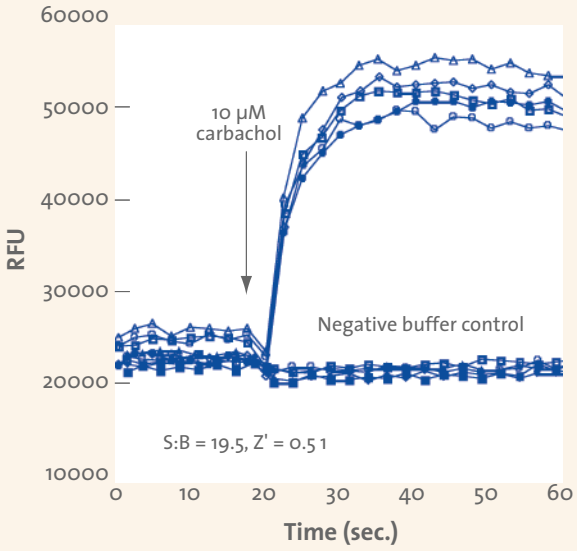
### Reduced Nonspecific Protein Binding with Corning NBS Microplates




**NBS Surface Significantly Reduces Nonspecific Binding of a BODIPY FL Casein Substrate to Corning Microplates**

Dilutions of BODIPY FL casein in digestion buffer were incubated for 30 min at room temperature in black Corning untreated and NBS microplates (Cat. No. 3654). Control wells contained digestion buffer only. Microplates were washed 3 times with PBS, pH 7.4, and 200 µL/well of digestion buffer alone was added to the wells. Fluorescence intensity was measured.

## Miniaturization of Calcium Mobilization Assay in Corning 384 Well Low Volume Black Clear Bottom Tissue Culture Treated Microplate (Cat. No. 3542)

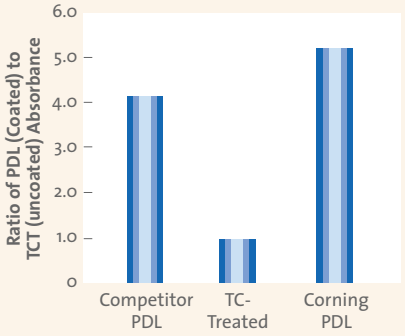



The chromatograms shown here are the rapid increase of calcium signals in Transfected CHO-K1 cells upon the addition of carbachol (n=5 wells). Transfected CHO-K1 cells of M1WT2 (ATCC, CRL-1984) were seeded at 5,000 cells per well in 10 µL medium and then grown in standard CO2 incubator overnight (37°C). After the addition of 10 µL calcium dye solution per well, the plates were incubated in 37°C for 30 min. After equilibrating to RT for 30 min, plates were loaded to Flexstation reader (Molecular Devices, Inc.). Five µL of 50 µM carbachol solution (final concentration 10 µM) was transferred to induce the response (or 5 µL of plain buffer for the negative controls). The calcium signal was monitored for 60 sec. Assay was performed with Calcium 3 kit (Molecular Devices, Inc.).

# Technical Appendix (CONTINUED)



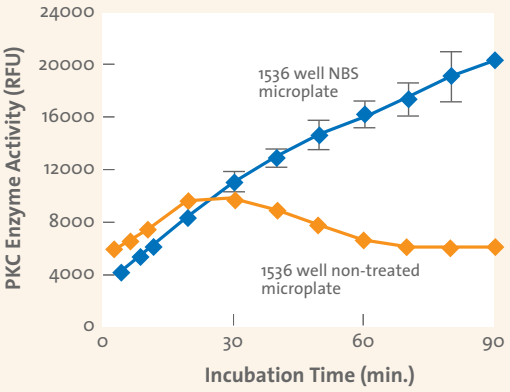
## Performance of Corning® 384 Well Poly-D-Lysine Microplate (Cat. No. 3664)




**Corning 384 Well Poly-D-Lysine (PDL) Microplates** have over 60% more cell attachment capacity than those of a leading competitor. Comparison of cell attachment capacity with Corning PDL coated plates to competitor's PDL coated plates and uncoated TC-treated plates. BHK-21 cells (1 x $10^4$ cells/well) were incubated in 25 µL of DMEM F-12 media in 8 replicate wells for 1 hour (37°C, 5% $CO_2$) on 384 well black/clear bottom microplates.

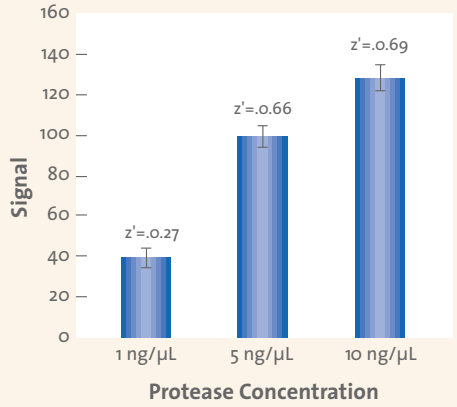
Data provided by Sigma-Aldrich Corporation. Sigma-Aldrich, Inc. warrants that its products conform to the information contained in this and other Sigma-Aldrich publications.

## Improved Kinase Performance with Corning 1536 Well Solid Black NBS Microplate (Cat. No. 3728)




The fluorescence of the fluorogenic substrate is quenched in this assay. Upon phosphorylation, the quenching mechanism is released, resulting in a significant increase in fluorescence intensity (FI), and therefore, kinase activity can be monitored continuously. The total reaction volume was 8 µL and contained 20 mM Tris-HCl (pH 7.6), 5 mM $MgCl_2$, 5 mM DTT, 10% Lipid Activator, 6 µM fluorogenic substrate, 10 µM ATP and 50 pg/mL PKC β-II. Signals were measured by Acquest™ reader (Molecular Devices, Inc.). The PKC assay was developed by Applied Biosystems, Inc.

## Performance of Corning 1536 Well 10 µL Round Well Microplate (Cat. No. 3936)




**Fluorescent Polarization Assay on Corning 1536 10 µL Assay Microplate** 10 ng/µL, 5 ng/µL and 1 ng/µL of *Streptomyces griseus* protease were incubated with 2.0 ng/µL of BODIPY FL casein substrate in 5 µL volumes for 10 minutes at room temperature. (Corning 1536 Well 10 µL black microplate, untreated, Cat. No. 3936).

## Selected Corning Technical Literature

All literature is available in PDF file format at **www.corning.com/lifesciences**.

### Assay Microplates

*Binding Comparison of Polymer Surfaces: Introducing Non-Binding Surface Microplates*

Corning® 96-well NBS™ microplates are ideal for homogeneous assays in high throughput screening. Studies of protein and nucleic acid binding to the NBS, when compared to polystyrene and polypropylene surfaces, demonstrate significant reduction in nonspecific binding.

*Chemiluminescent HRP-Based Assay Using Corning White Microplate*

A comparison of the performance of white microplates from several microplate manufacturers to that of Corning 96 well white microplate using a model HRP based luminescent assay system.

*Corning Non-Binding Surface Microplates for Fluorescent HTS Assays*

This 4-page technical note evaluates the efficacy of the Corning NBS microplate for use in a homogeneous fluorescence polarization protease assay.

*Corning Non-Binding Surface Treatment to Reduce Non-Specific Binding To Microplates*

This 2-page technical note evaluates Corning NBS microplates for Scintillation Proximity Assays.

*Corning 384 Well Low Volume Microplate Performance in Miniaturized Assays*

This technical note describes the performance of Low Volume microplates using a homogeneous fluorescence polarization assay at low volumes.

*Design and Performance of the Corning 2 µL 1536 Well Plate*

This 2-page technical note describes the design features and performance criteria for Corning 2 µL 1536 well microplates.

*Fluorescent Polarization Kinase Assay Miniaturization in Corning 96 Well Half Area and 384 Well Microplates*

This 4-page technical note examines assay miniaturization in Corning 96 well, 96 well Half Area, and 384 well microplates using fluorescence polarization tyrosine kinase assays.

### Cell Culture Microplates

*Helpful Hints to Manage Edge Effects of Cultured Cells for High Throughput Screening*

This technical note is a compendium of techniques, collected from Corning Cell Culture facilities and customers, to reduce the occurrence of irregular patterns of cell adhesion or "edge effect" in microplates.

*Poly-D-Lysine Coated Microplates*

This 2-page application report describes binding and performance characteristics, and provides operating protocols for Corning's poly-D-lysine microplates.

### Immunoassay Microplates

Corning offers five ELISA Technical Bulletins:

- Immobilization Principles — Selecting the Surface
- Optimizing the Immobilization of Protein and other Biomolecules
- Effective Blocking Procedures
- Optimizing the Separation Step on 96 Well Microplates
- Selecting the Detection System – Colorimetric, Fluorescent, Luminescent

### Storage Applications

*Corning ClearPro™ 96 Well Polypropylene Microplates*

This 4-page technical note describes the heat sealing and storage performance characteristics for Corning ClearPro microplates.

*New Storage Mat Applicator System Meets Customers' Strict Storage Requirements*

This 2-page application note describes the performance characteristics of the Corning Storage Mat Applicator and the Corning products with which it is compatible.

*Recommendations for Heat Sealing Corning Polypropylene Storage Products Using the ABgene® Automated Laboratory Plate Sealer*

This 3-page application note describes the critical parameters for sealing Corning microplates with the ABgene Automated Laboratory Plate Sealer.

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96 Well Microplate Selection Guide

# CORNING 96 WELL MICROPLATE SELECTION GUIDE

AVAILABLE SURFACES

| | Page Number | Not Treated | High Bind | Medium Bind | NBS™ | Carbo-BIND™ | Sulfhydryl-BIND™ | Universal-BIND™ | DNA-BIND® | Amine | TC-Treated | Corning® CellBIND® Surface | Ultra-Low Attachment | Poly-D-Lysine | UV Transparent |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **96 Well Clear Polystyrene Microplates** | | | | | | | | | | | | | | | |
| Round Bottom | 51 | ■ | ■ | | | | | | | | ■ | | | | |
| V Bottom | 51 | ■ | | | | | | | | | ■ | | | | |
| Flat Bottom | 51 | ■ | ■ | | ■ | ■ | ■ | ■ | | | ■ | ■ | ■ | ■ | |
| Flat Bottom Half Area | 51 | ■ | ■ | | | | | | | | ■ | | | | |
| Flat Bottom Easy Wash | 51 | ■ | ■ | | | | | | | | | | | | |
| **96 Well Solid Black Polystyrene Microplates** | | | | | | | | | | | | | | | |
| Round Bottom | 52 | ■ | | | | | | | | | | | | | |
| Flat Bottom | 52 | ■ | ■ | | ■ | | | | | | ■ | | | | |
| Flat Bottom Half Area | 52 | ■ | | | ■ | | | | | | ■ | | | | |
| **96 Well Black Clear Bottom Polystyrene Microplates** | | | | | | | | | | | | | | | |
| Flat Bottom | 52, 53 | ■ | ■ | | ■ | | | | | | ■ | ■ | | ■ | |
| Flat Bottom Half Area | 53 | ■ | | | ■ | | | | | | ■ | | | ■ | |
| **96 Well Solid White Polystyrene Microplates** | | | | | | | | | | | | | | | |
| Round Bottom | 52 | ■ | | | ■ | | | | | | | | | | |
| Flat Bottom | 52 | ■ | ■ | | ■ | | | | | | ■ | | | | |
| Flat Bottom Half Area | 52 | ■ | | | ■ | | | | | | ■ | | | | |
| **96 Well White Clear Bottom Polystyrene Microplates** | | | | | | | | | | | | | | | |
| Flat Bottom | 52, 53 | ■ | | | ■ | | | | | | ■ | | | ■ | |
| Flat Bottom Half Area | 53 | ■ | | | ■ | | | | | | ■ | | | | |
| **96 Well Stripwell Polystyrene Microplates** | | | | | | | | | | | | | | | |
| Flat Bottom | 54 | | ■ | ■ | | ■ | ■ | ■ | ■ | ■ | ■ | | | | |
| Flat Bottom - Low Volume | 54 | | ■ | ■ | | | | | | | | | | | |
| **96 Well UV Microplates** | | | | | | | | | | | | | | | |
| Flat Bottom | 53 | | | | | | | | | | | | | | ■ |
| Flat Bottom Half Area | 53 | | | | | | | | | | | | | | ■ |
| **96 Well Clear Flexible Polyvinyl (PVC) Microplates** | | | | | | | | | | | | | | | |
| V Bottom | 53 | ■ | | | | | | | | | | | | | |
| Round Bottom | 53 | ■ | | | | | | | | | | | | | |
| Flat Bottom | 53 | ■ | | | | | | | | | | | | | |
| **96 Well Polypropylene Microplates** | | | | | | | | | | | | | | | |
| V Bottom | 55 | ■ | | | | | | | | | | | | | |
| V Bottom – Expanded Vol. | 55 | ■ | | | | | | | | | | | | | |
| Round Bottom | 55 | ■ | | | | | | | | | | | | | |
| Flat Bottom | 55 | ■ | | | | | | | | | | | | | |
| **96 Well Polypropylene Storage Blocks** | | | | | | | | | | | | | | | |
| V Bottom | 55 | ■ | | | | | | | | | | | | | |
| Round Bottom | 55 | ■ | | | | | | | | | | | | | |

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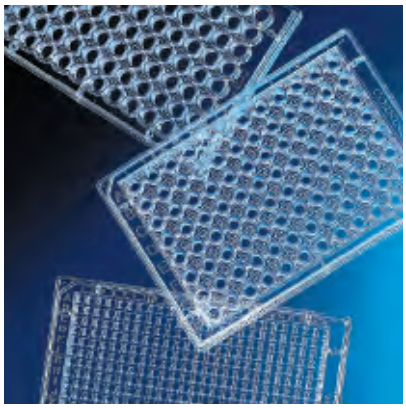
384 Well Microplate Selection Guide

# CORNING 384 AND 1536 WELL MICROPLATE SELECTION GUIDE

| | Page Number | AVAILABLE SURFACES: Not Treated | High Bind | Medium Bind | NBS™ | Carbo-BIND™ | Sulfhydryl-BIND™ | Universal-BIND™ | DNA-BIND® | Amine | TC-Treated | Corning® CellBIND® Surface | Ultra-Low Attachment | Poly-D-Lysine | UV Transparent |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **384 Well Clear Polystyrene Microplates** | | | | | | | | | | | | | | | |
| Flat Bottom | 58 | ■ | ■ | | ■ | | | | | | ■ | | | ■ | |
| **384 Well Solid Black Polystyrene Microplates** | | | | | | | | | | | | | | | |
| Flat Bottom | 58 | ■ | | | ■ | | | | | | ■ | | | | |
| Round Bottom, Low Vol. | 58 | ■ | ■ | ■ | ■ | | | | | | | | | | |
| Flat Bottom, Low Volume | 58 | ■ | | | ■ | | | | | | ■ | | | | |
| **384 Well Black Clear Bottom Polystyrene Microplates** | | | | | | | | | | | | | | | |
| Flat Bottom | 59 | ■ | | | ■ | | | | | | ■ | ■ | | ■ | |
| Flat Bottom, Low Volume | 59 | ■ | | | ■ | | | | | | ■ | | | | |
| **384 Well Solid White Polystyrene Microplates** | | | | | | | | | | | | | | | |
| Flat Bottom | 58 | ■ | | | ■ | | | | | | ■ | | | | |
| Round Bottom, Low Vol. | 58 | ■ | | ■ | ■ | | | | | | | | | | |
| Flat Bottom, Low Volume | 58 | | | | ■ | | | | | | ■ | | | | |
| **384 Well White Clear Bottom Polystyrene Microplates** | | | | | | | | | | | | | | | |
| Flat Bottom | 59 | ■ | | | ■ | | | | | | ■ | | | ■ | |
| **384 Well UV Microplates** | | | | | | | | | | | | | | | |
| Flat Bottom | 59 | | | | | | | | | | | | | | ■ |
| **384 Well Polypropylene Microplate** | | | | | | | | | | | | | | | |
| Round Bottom | 60 | ■ | | | | | | | | | | | | | |
| Conical Bottom | 60 | ■ | | | | | | | | | | | | | |
| **384 Well Polypropylene Storage Block** | | | | | | | | | | | | | | | |
| Round Bottom | 60 | ■ | | | | | | | | | | | | | |
| V Bottom | 60 | ■ | | | | | | | | | | | | | |
| **1536 Well Clear Polystyrene Microplates** | | | | | | | | | | | | | | | |
| Flat Bottom (2 µL) | 62 | ■ | ■ | | | | | | | | ■ | | | | |
| **1536 Well Clear COC Echo Qualified Microplates** | | | | | | | | | | | | | | | |
| Flat Bottom | 62 | ■ | | | | | | | | | | | | | |
| **1536 Well Solid Black Polystyrene Microplates** | | | | | | | | | | | | | | | |
| Flat Bottom | 61 | ■ | | | ■ | | | | | | ■ | | | | |
| Flat Bottom (2 µL) | 62 | ■ | | | | | | | | | ■ | | | | |
| Round Bottom | 61 | ■ | | | | | | | | | | | | | |
| **1536 Well Black Clear Bottom Polystyrene Microplates** | | | | | | | | | | | | | | | |
| Flat Bottom | 61 | ■ | | | ■ | | | | | | ■ | | | | |
| **1536 Well Solid White Polystyrene Microplates** | | | | | | | | | | | | | | | |
| Flat Bottom | 61 | ■ | | | ■ | | | | | | ■ | | | | |
| Flat Bottom (2 µL) | 62 | ■ | ■ | | | | | | | | ■ | | | | |
| Round Bottom | 61 | ■ | | | | | | | | | | | | | |

# Genomics



96 and 384 Well UV Microplates, page 79

# Overview



## FROM START TO FINISH – MEETING THE NEEDS OF THE GENOMICS LABORATORY

Corning's dedication to quality and technology has produced this comprehensive line of products for the genomics laboratory. Whatever aspect of research you are involved in – from culturing cells or microorganisms to printing and hybridizing DNA arrays, Corning's quality and breadth of line delivers reliable results. All of Corning's products are manufactured under stringent quality guidelines as an assurance of consistent performance from device to device and lot to lot. Featured in this brochure are our newest products for the high throughput genomics laboratory:

- Thermowell® Gold PCR reaction vessels for conventional and real-time PCR, and cycle sequencing
- 96 well half area UV plates for nucleic acid quantitation
- Low profile BioAssay dishes that are robotic friendly and maximize incubator and storage space

## THE EQUIPMENT COMPATIBILITY PROGRAM

The increasing use of automated laboratory equipment demands laboratory disposables whose fit and function have been qualified. Our microplates are designed with automation compatibility in mind and they meet industry standards for plate dimensions. In addition, Corning Life Sciences maintains a comprehensive equipment compatibility program in which leading equipment manufacturers certify the compatibility of our products with their instruments. This information is continually updated with our new products as well as new instruments. For the most current information, visit our website: **www.corning.com/lifesciences**.

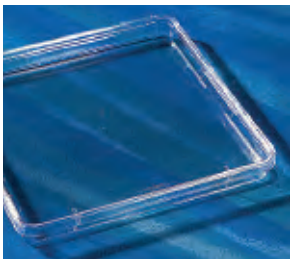
## LIFE SCIENCES EARLY ACCESS TO DEVELOPMENT – THE L.E.A.D. PROGRAM

Corning is committed to meeting the rapidly evolving needs of the life sciences laboratory. We are continually developing innovative new products that are compatible with the latest advances in technology and instrumentation. Our L.E.A.D. program gives researchers access to these products and special pricing prior to their full market release. Contact your local Corning Life Sciences office or representative for more information about the products currently available through this program.

## EXPERT ASSISTANCE IS JUST A TELEPHONE CALL OR E-MAIL AWAY

Customer service and technical representatives are available to answer any question – from pricing and product availability to protocols and applications advice. Our offices around the world are able to respond promptly to your inquiry regardless of your location. Contact us at your local office (listed on the back cover).

# Colony Picking, Bacterial Growth, and Storage



245 mm Square BioAssay Dish

## 245 mm Square BioAssay Dishes

Square bioassay dishes are made from polystyrene and are certified nonpyrogenic. They are packed with lids and are designed with a stacking bead so that they will stack securely without slipping. The dishes are compatible with automated colony picking instruments.

| Cat. No. | Description | Automation Compatibility | Qty/Pk | Qty/Cs |
|---|---|---|---|---|
| 431111 | 245 mm x 245 mm, Square, 18 mm Deep Nontreated Dish, Sterile | PBA Flexys™ and the Genetix "Q" Bot® automated colony picking and gridding robots | 4 | 16 |
| 431272 | 245 mm x 245 mm, Square, 18 mm Deep Nontreated Dish, Sterile | AutoGen AutoGenesys, BioRobotics BioPick, BioGrid, TAS and MicroGrid II high volume automated colony picking systems | 4 | 16 |
| New 431301 | 245 mm x 245 mm, Low Profile, Sterile, Nontreated Dish | PBA Flexys, Genetix "Q" Bot, BioRobotics, BioPick | 5 | 20 |

384 Well Polypropylene Blocks

## 96 and 384 Well Polypropylene Blocks for Growth and Storage

96 and 384 well deep well blocks feature well designs for optimal liquid handling and are certified DNase- and RNase-free.

| Cat. No. | Description | Well Shape | Sterile | Well Volume | Qty/Pk | Qty/Cs |
|---|---|---|---|---|---|---|
| 3956 | 96 Well | Round V | Yes | 0.5 mL | 10 | 50 |
| 3957 | 96 Well | Round V | No | 0.5 mL | 10 | 100 |
| 3958 | 96 Well | Round | Yes | 1 mL | 5 | 25 |
| 3959 | 96 Well | Round | No | 1 mL | 5 | 100 |
| 3960 | 96 Well | V-Bottom | Yes | 2 mL | 5 | 25 |
| 3961 | 96 Well | V-Bottom | No | 2 mL | 5 | 100 |
| 3964 | 384 Well | Square-Round | Yes | 180 µL | 5 | 25 |
| 3965 | 384 Well | Square-Round | No | 180 µL | 5 | 100 |
| 3342 | 384 Well | Square V | Yes | 240 µL | 5 | 50 |
| 3347 | 384 Well | Square V | No | 240 µL | 5 | 50 |

Disposable Plastic Erlenmeyer Flasks

## Disposable Culture Flasks

Disposable plastic Erlenmeyer flasks are made from optically clear polycarbonate and feature a wide, easy access mouth. The polycarbonate construction also delivers mechanical strength for shaker culture applications. Each flask is individually packaged and radiation sterilized. The polypropylene plug seal caps offer two positions: open to allow gas exchange or closed for a liquid-tight seal. The vent caps allow free gas exchange while offering a liquid-tight, contamination-free seal.

| Cat. No. | Capacity (mL) | Graduations (mL) | Neck Diameter (mm) | Cap Style | Sterile | Qty/Pk | Qty/Cs |
|---|---|---|---|---|---|---|---|
| 430421 | 125 | 25 | 26 | Plug Seal | Y | 1 | 50 |
| 431143 | 125 | 25 | 26 | Vent Cap | Y | 1 | 50 |
| 430183 | 250 | 25 | 31 | Plug Seal | Y | 1 | 50 |
| 431144 | 250 | 25 | 31 | Vent Cap | Y | 1 | 50 |
| 430422 | 500 | 50 | 43 | Plug Seal | Y | 1 | 25 |
| 431145 | 500 | 50 | 43 | Vent Cap | Y | 1 | 25 |
| 431146 | 1000 | 50 | 43 | Plug Seal | Y | 1 | 25 |
| 431147 | 1000 | 50 | 43 | Vent Cap | Y | 1 | 25 |

# Purification



## Filtr*EX*™ 96 and 384 Well Filter Plates

Corning® Filtr*EX* filter plates meet the industry standards for plate dimensions. The rigid side walls make the plate ideal for automation and the wide skirt accepts bar codes. Individual filter disks are encapsulated in the plate by a patented* process that ensures 100% integrity of each well. The design of the nozzle prevents sample cross-contamination and wicking. Glass fiber filter plates can be used for a variety of applications, such as plasmid isolation, DNA purification, PCR† clean-up or receptor/ligand binding assays. They are a cost-saving alternative to expensive DNA prep kits. Use the low-binding hydrophilic PVDF membrane for lysate clarification, protein kinase assays, or bead- or resin-based separation assays. Visit the Technical Information Center at our web site for additional application information.

384 Filtr*EX* Filter Plates

### 384 Well Filtr*EX* Filter Plates

| Cat. No. | Membrane | Pigment | Sterile | Well Volume (µL) | Qty/Pk | Qty/Cs |
|---|---|---|---|---|---|---|
| 3531 | 0.45 µm PVDF | White | No | 180 | 5 | 25 |
| 3533 | 0.66 mm Glass Fiber | White | No | 180 | 5 | 25 |

96 Filtr*EX* Filter Plates

### 96 Well Filtr*EX* Filter Plates

| Cat. No. | Description | Sterile | Well Volume (µL) | Qty/Pk | Qty/Cs |
|---|---|---|---|---|---|
| 3504 | 0.2 µm PVDF Membrane, Hydrophilic | No | 350 | 10 | 50 |
| 3505 | 0.2 µm PVDF Membrane, Hydrophilic | Yes | 350 | 10 | 50 |
| 3510 | 0.25 mm Glass Fiber Filter | No | 350 | 10 | 50 |
| 3511 | 0.66 mm Glass Fiber Filter | No | 350 | 10 | 50 |
| New 3514 | Fluid Guard for Filtr*EX* 96 Well Filter Plates | No | – | 100 | 100 |

Please contact us for customized membranes.
*U.S. Patent No. 6,391,241
†PCR is covered by patents owned by Hoffman-LaRoche Inc., Nutley, NJ. Use of the PCR process requires a license.

## Volume Adapter and Applicator

A volume adapter allows larger volumes (up to 1 mL) to be applied to the 96 well filter plates. The applicator easily assembles and disassembles the filter plate and adapter, and ensures a perfect, leak-free fit.

**3584** Volume Adapter

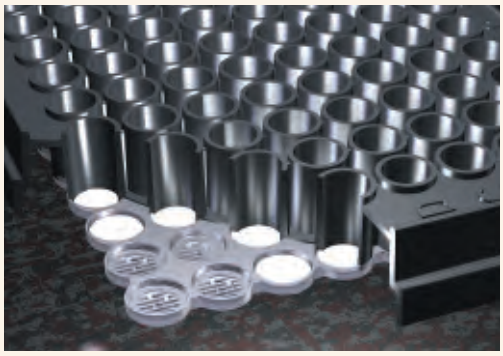
| Cat. No. | Description | Qty/Pk | Qty/Cs |
|---|---|---|---|
| 3584 | Volume Adapter, Nonsterile | 10 | 50 |
| 3507 | Applicator | 1 | 1 |

## Collection Microplates

Filtr*EX* 96 and 384 well filter plates meet industry standards for plate dimensions and can be used with a broad range of collection plates. Polystyrene and polypropylene plates are available with a variety of well geometries. Commonly used collection plates are listed below. For information about other compatible collection plates, please contact us.

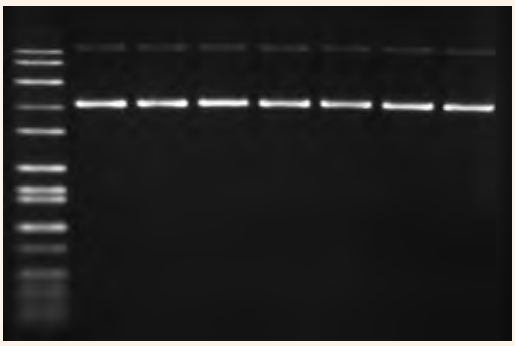
| Cat. No. | Description | Well Volume (µL) | Qty/Pk | Qty/Cs |
|---|---|---|---|---|
| 3371 | 96 Well, Round Bottom Polypropylene ClearPro™ Plate | 360 | 25 | 100 |
| 3795 | 96 Well, Round Bottom Polystyrene Plate | 360 | 25 | 100 |
| 3897 | 96 Well, V-Bottom Polystyrene Plate | 320 | 25 | 100 |
| 3657 | 384 Well, Square Well, Round Bottom Polypropylene Plate | 95 | 25 | 100 |
| 3965 | 384 Well, Square Well, Round Bottom Polypropylene Block | 180 | 5 | 100 |
| 3702 | 384 Well, Flat Bottom Polystyrene Plate | 125 | 25 | 100 |

## Filtr*EX*™ 96 and 384 Well Filter Plate Construction

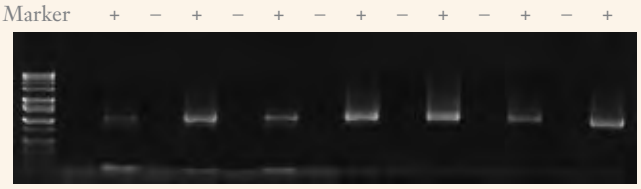


The proprietary nozzle design and individual, integrally-sealed filter disks prevent filtrate cross contamination and wicking. The rigid construction and wide skirt allow for robotic handling and bar coding.

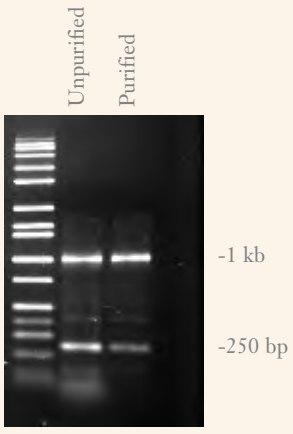
## Filtr*EX* Filter Plate Performance




**Agarose gel electrophoresis of Plasmid DNA prepared using Corning® Filtr*EX* 384 well filter plates.**
Plasmid DNA samples isolated with glass fiber filter plates were separated in a 1% agarose gel in 1X TAE buffer. Lane 1 contains 10 µL of Hi-Lo™ markers (total DNA = 1 µg). Lanes 2-8 contain plasmid preparations isolated using 7 different wells of the filter plate. Plasmid DNA was recovered in approximately 55 µL total volume. Two microliters (2 µL) of recovered plasmid were loaded in each lane of the gel.




**Integrally sealed wells eliminate sample cross contamination.**
Alternating wells of negative control (–) or plasmid DNA (+) filtered through Filtr*EX* 384 well Filter Plates were analyzed for cross-contamination by PCR. PCR products were not detected in the negative control wells, indicating the absence of contaminating DNA.




**PCR Clean-Up**
PCR products were purified using a Filtr*EX* 384 well glass fiber filter plate. Primer dimers were efficiently removed with good recovery of the PCR products.

Spin-X Centrifuge Tube Filters

## Spin-X® Centrifuge Tube Filters

Spin-X centrifuge tube filters consist of a membrane-containing filter unit within a centrifuge tube. They filter by centrifugation for bacteria removal, particle removal, HPLC sample preparation, removal of cells from media and DNA removal from agarose or acrylamide gels. Maximum RCF** is 16,000 x g.

| Cat. No. | Membrane | Well Volume (working µL) | Pore Size (µm) | Tube Size (mL) | Qty/Cs |
|---|---|---|---|---|---|
| 8160 | CA | 500 | 0.22 | 2.0 | 96 |
| 8161* | CA | 500 | 0.22 | 2.0 | 100 |
| 8162 | CA | 500 | 0.45 | 2.0 | 96 |
| 8163* | CA | 500 | 0.45 | 2.0 | 100 |
| 8169* | NY | 500 | 0.22 | 2.0 | 200 |
| 8170* | NY | 500 | 0.45 | 2.0 | 200 |

CA = Cellulose Acetate, NY = Nylon
*Indicates that the product is nonsterile and certified nonpyrogenic.
**RCF = Relative Centrifugal Force.

## Spin-X Tube Purification of DNA from Agarose Gels

### Introduction

Purification of DNA from an agarose gel with the Spin-X tube is quick and efficient, unlike the electroelution, dialysis, and "freeze-squeeze" methods. The Spin-X method consists of two simple steps: excision of the band from the gel and centrifugation in the Spin-X tube. Yields range from 30 to 80%.

### Protocol*

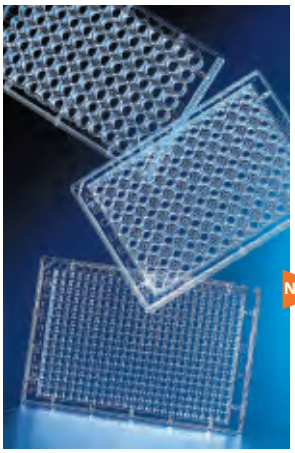
1. Electrophorese DNA in an agarose gel containing ethidium bromide.
2. After electrophoresis, illuminate the gel under long wavelength UV light, then, using a sharp instrument, carefully excise the band of interest (30-15,000 bp).
3. Place the gel slice into the filter cup of the Spin-X tube (Cat. No's. 8160, 8161, 8162, 8163) and mix with 100 to 200 µL of distilled water or Tris-EDTA.
4. Spin the tube at about 13,000 x g for 5 to 20 minutes at room temperature.
5. Collect the DNA from the microcentrifuge tube; the agarose gel will be retained on the Spin-X membrane. If needed, ethanol precipitate the DNA to remove any EDTA present.

**Note: DNA yield may increase with the incorporation of one or all of the following steps:**

1. Macerate the gel slice prior to placement in the Spin-X tube.
2. Prior to centrifugation in step #4, freeze the gel slice at -70°C in a separate tube, then allow to thaw.
3. After the initial centrifugation, add an additional 200 µL of buffer to the Spin-X tube and centrifuge again.
4. Spin for a longer period of time.

*Schwarz, Herbert and Whitton, J. Lindsay, 1992. A Rapid, Inexpensive Method for Eluting DNA from Agarose or Acrylamide Gel Slices Without Using Toxic or Chaotropic Materials. Vol. 13, No. 2, Biotechniques.

# Quantitation and Detection



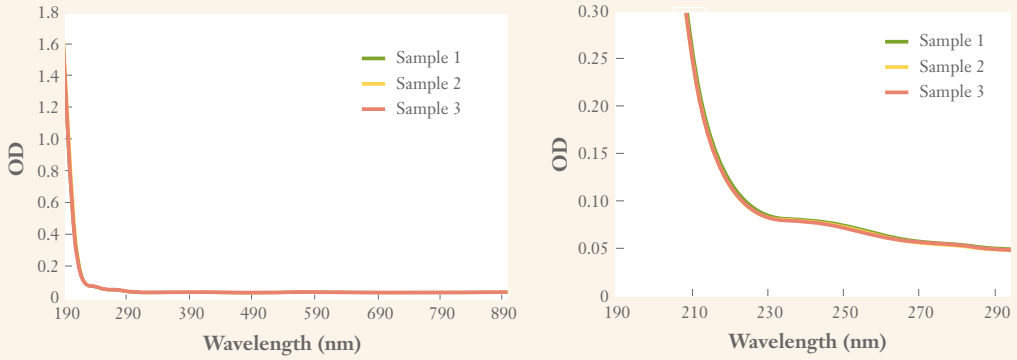

96 Well Half Area, 96 and 384 Well UV Microplates

## 96 and 384 Well UV Microplates

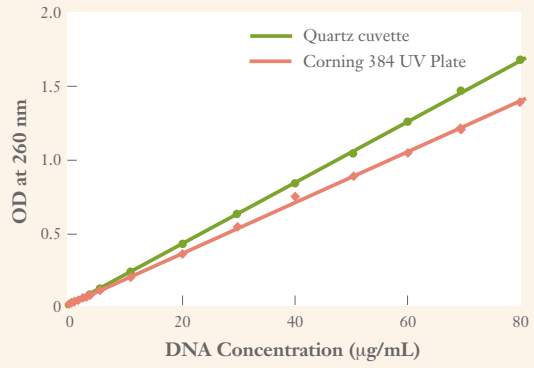
These plates have a unique UV-transparent bottom; ideal for determining protein and/or nucleic acid concentrations. The UV-transparent bottom is molded to the top without adhesives for greater strength and maximum leak resistance. Plates are certified for low background and consistent performance at 260 and 280 nm. Their broad linear detection range allows reliable detection of high and low concentrations of biomolecules.

| Cat. No. | Format | Bottom | Well Volume (µL) | Qty/Pk | Qty/Cs |
|---|---|---|---|---|---|
| 3635 | 96 Well | Flat | 370 | 25 | 50 |
| 3675 | 384 Well | Flat | 125 | 5 | 25 |
| 3679 | 96 Well Half Area | Flat | 205 | 25 | 50 |

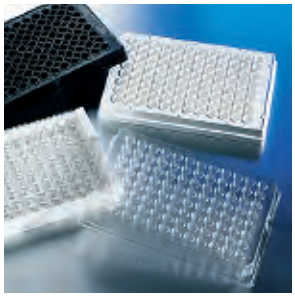
### 384 Well UV Microplate Performance




**Background absorbance of three samples of the Corning® 384 well UV plate bottom material.**
This material features consistently low absorbance over a broad wavelength range, including well into the UV. The three samples showed negligible background absorbance across the entire visible spectrum (left panel) and very low background in the UV range (right panel).




**Comparison of DNA detection with the Corning 384 well UV plate to individual samples read in a quartz cuvette.**
For each indicated DNA concentration, triplicate 100 µL samples were read in a quartz cuvette with a Beckman DU® spectrophotometer. Six samples (90 µL) were read in a Corning 384 well UV plate at each concentration with a Tecan ULTRA™ reader. These sample volumes were chosen in order to maintain a 1 cm path length (smaller volume samples can be read in the UV plate). The Corning UV plate demonstrates a broad linear range enabling the reliable detection of high and low concentrations as well as good sample to sample consistency (CV's of <2% at 50 µg/mL DNA).



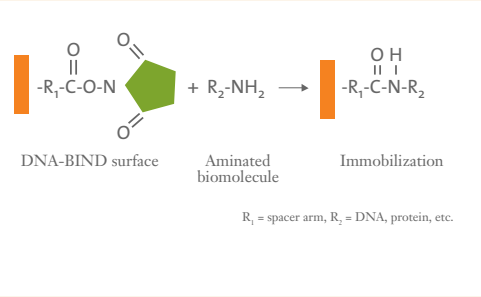
DNA-BIND Assay Microplates

## DNA-BIND™ Assay Microplates

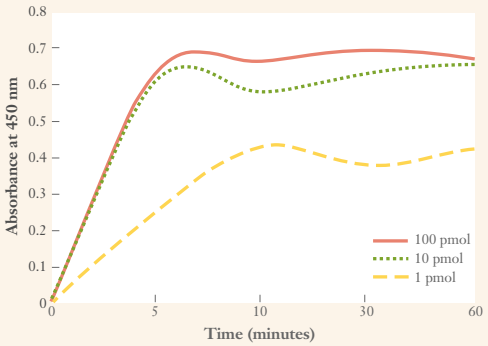
DNA-BIND surface covalently couples to amine groups, providing a convenient method to immobilize aminated single-stranded DNA by either the 5' or 3' end for hybridization, amplification, or other DNA-based assays. 96 well plates and 1 x 8 Stripwell™ plates come without lids. Protocols and application information are available on our web site: **www.corning.com/lifesciences**.

| Cat. No. | Format | Well Shape | Qty/Pk | Qty/Cs |
|---|---|---|---|---|
| 2497 | 1 x 8 Stripwell Plate, White | Flat | 1 | 50 |
| 2505 | 96 Well Plate, Clear | Flat | 1 | 50 |
| 2506 | 1 x 8 Stripwell Plate, Clear | Flat | 1 | 50 |
| 2498 | 96 Well Plate, Black | Flat | 1 | 50 |
| 2499 | 96 Well Plate, White | Flat | 1 | 50 |
| 2525 | 96 Well Plate, Clear | Flat | 1 | 10 |

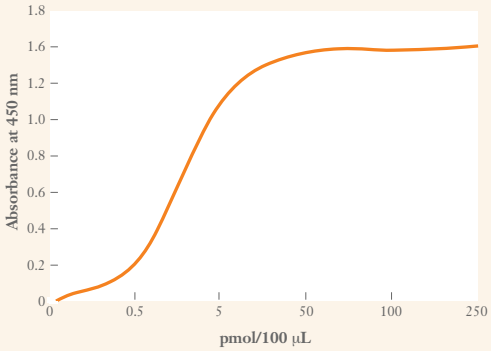
## DNA-BIND Surface Performance



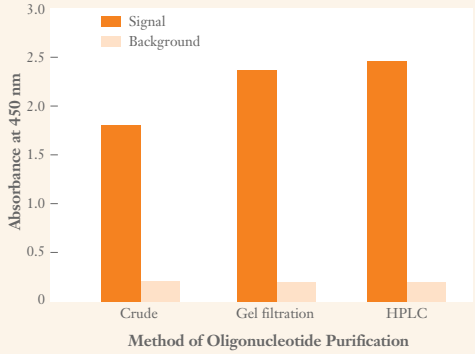

Reaction of N-oxysuccinimide with an aminated biomolecule




Kinetics of oligonucleotide coupling




Detection of hybridization at increasing oligonucleotide concentrations



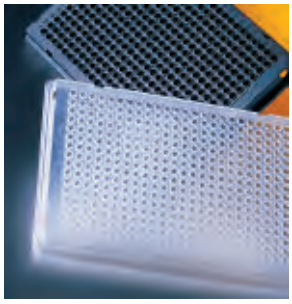

Effect of post-synthetic purification method on signal strength and background

# DNA Amplification

## Thermowell® GOLD PCR† Reaction Vessels from Corning

Thermowell GOLD PCR reaction vessels exemplify Corning's commitment to innovation: to develop superior quality, reliable, and versatile products to complement today's dynamic changes in technology. The wide variety of options offered by Thermowell GOLD provides researchers the choices necessary for complete compatibility with laboratory equipment. Look to Thermowell GOLD for PCR, sequencing, and real-time PCR.

## Thermowell GOLD 384 Well Polypropylene PCR Microplates and Accessories



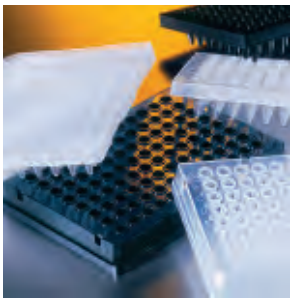
Thermowell GOLD 384 Well PCR Microplates

Thermowell GOLD 384 well PCR microplates feature exceptional dimensional stability following thermocycling, and are fully compatible with automation, commonly used thermal cyclers, and Applied Biosystems® sequencing adapters (see compatibility table).

| Cat. No. | Description | Qty/Pk | Qty/Cs |
|---|---|---|---|
| 3757 | 384 Well Polypropylene PCR Microplate, clear | 10 | 50 |
| 3756 | 384 Well Polypropylene PCR Microplate, black | 10 | 50 |
| 3699[a] | Silicone Rubber Sealing Mat – 384 Well Microplates | 1 | 25 |
| 6569 | Aluminum Sealing Tape-384 Well Microplates | 100 | 100 |
| 6575 | Universal Optical Sealing Tape | 100 | 100 |

[a]Thermowell Sealing Mats, available for 384 Well PCR Plates, are easy to apply and remove, fully autoclavable and reusable (at least five times). These silicone rubber mats offer a cost effective alternative to other sealing methods and provide 100% sealing when used in conjunction with clamp or screw-down heated lid thermal cyclers.

## Thermowell GOLD and Thermowell 96 Well Polypropylene PCR Microplates and Accessories



Thermowell GOLD 96 Well Polypropylene PCR Microplates

Thermowell GOLD 96 well PCR microplates are offered in five formats to ensure maximum flexibility and a perfect match for your applications. The original Thermowell 96 well PCR microplates are universal fit and can be cut into 3 x 8 well segments.

| Cat. No. | Description | Qty/Pk | Qty/Cs |
|---|---|---|---|
| 6551 | 96 Well Microplate, Clear – Thermowell | 25 | 25 |
| 3752 | 96 Well Microplate, Full Skirt, Clear – Thermowell GOLD | 10 | 50 |
| 3751 | 96 Well Microplate, Full Skirt, Black – Thermowell GOLD | 10 | 50 |
| 3753 | 96 Well Microplate, Half Skirt, Clear – Thermowell GOLD | 10 | 50 |
| 3755 | 96 Well Microplate, Half Skirt, Black – Thermowell GOLD | 10 | 50 |
| 3754[b] | 96 Well Microplate, Elevated Skirt, Clear – Thermowell GOLD | 10 | 50 |

[b]Fully compatible with ABI 3700 and 3730.

## Polycarbonate PCR Microplates

| Cat. No. | Format | Model Name | Well Volume (µL) | Qty/Pk | Qty/Cs |
|---|---|---|---|---|---|
| 6509 | 96 Well | Model P | 200 | 1 | 25 |
| 6511 | 96 Well | Model M | 200 | 1 | 25 |

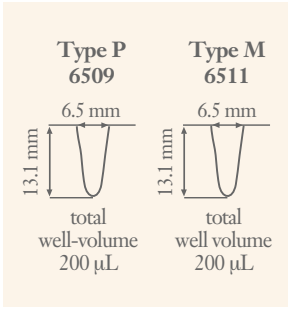


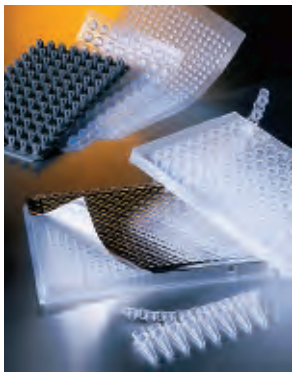

Plate Well Dimensions

### Thermal Cycler Compatibility Guide for Polycarbonate PCR Microplates

| Cat. No. | Name | Compatible Thermal Cyclers |
|---|---|---|
| 6509 | Model P | Applied Biosystems GeneAmp® PCR System 9600[c], Barnstead Thermolyne Amplitron II®, Techne® Cyclogene, and Gene E with 96 x 0.2 mL block |
| 6511 | Model M | MJ Research PTC-100-96V, PTC-200 DNA Engine™, Biometra Uno - Thermoblocker™, Coy Corporation Temp Cycler II, Corbett Research FTS-960, Hybaid OmniGene with Microblock, Quatro BioSystems T-C-40 |

[c]Requires the use of the Spacer Block and Frame (Cat. No. 6527).
†PCR is covered by patents owned by Hoffman-LaRoche Inc., Nutley, NJ. Use of the PCR process requires a license.

## PCR Sealing Tape and Sealing Mats



Sealing Tape, Sealing Mats, and Cap Strips for PCR

Sealing tapes prevent evaporation and enable oil-free operation when used with thermal cyclers with heated lids. The universal optical sealing tape can be used in detection coupled with PCR systems (real-time PCR).

| Cat. No. | Description | Qty/Pk | Qty/Cs |
|---|---|---|---|
| 6569 | Aluminum Sealing Tape-384 Well Microplates | 100 | 100 |
| 6570 | Aluminum Sealing Tape-96 Well Microplates | 100 | 100 |
| 6575 | Universal Optical Sealing Tape for Real Time PCR | 100 | 100 |
| 6555 | Thermowell™ Sealing Mat-96 Well Microplates | 1 | 25 |
| 3699 | Thermowell Sealing Mat-384 Well Microplates | 1 | 25 |
| 3087 | Silicone Rubber Septa Mat | 10 | 50 |

## Thermowell® GOLD and Thermowell PCR Tubes

Thermowell GOLD PCR Tubes

Individual PCR tubes are made of thin wall polypropylene and designed for precise fit in heat blocks to optimize heat transfer. Tubes are tested and certified to be free of DNase and RNase, are autoclavable at 121°C and withstand centrifugation to 10,000 x g.

| Cat. No. | Volume (mL) | Cap Style | Color | Qty/Pk | Qty/Cs |
|---|---|---|---|---|---|
| *Individual Polypropylene PCR Tubes – Thermowell GOLD* | | | | | |
| 3745 | 0.2 | Flat | Clear | 500 | 1,000 |
| 3744 | 0.2 | Flat | Assorted | 500 | 1,000 |
| 3747 | 0.2 | Dome | Clear | 500 | 1,000 |
| 3746 | 0.2 | Dome | Assorted | 500 | 1,000 |
| 3750 | 0.5 | Flat | Clear | 500 | 1,000 |
| 3749 | 0.5 | Flat | Assorted | 500 | 1,000 |
| *Individual Polypropylene PCR Tubes – Thermowell* | | | | | |
| 6530 | 0.5 | Flat | Clear | 250 | 1,000 |
| 6531 | 0.2 | Dome | Clear | 96 | 960 |
| 6571 | 0.2 | Flat | Clear | 96 | 960 |

## Thermowell GOLD and Thermowell 8 Well PCR Tube Strips

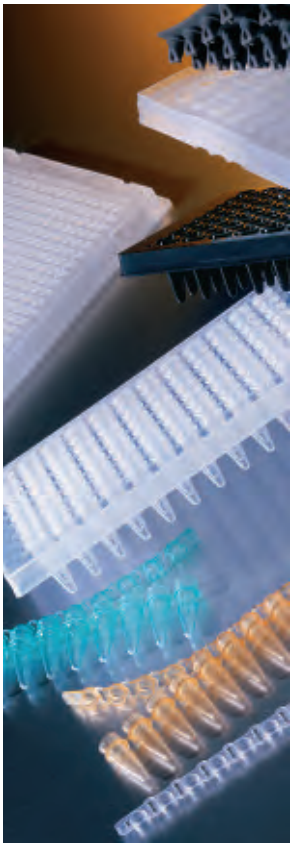
Thermowell GOLD 8 Well PCR Tube Strips

Tube strips consist of eight 0.2 mL thin wall polypropylene tubes connected together. Dual connectors between adjacent tubes eliminate inadvertent breakage during sample handling. Tube strips are designed for precise fit in thermal cyclers to optimize heat transfer. Thermowell GOLD cap strips are sold separately from Thermowell GOLD tube strips. Original Thermowell tube strips and cap strips are packaged together. Tube strips are tested and certified to be free of DNase/RNase contamination and are autoclavable at 121°C.

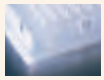
| Cat. No. | Description | Qty/ Pk | Qty/ Cs |
|---|---|---|---|
| 3741 | 0.2 mL 1 x 8 Tube Strips, Clear – Thermowell GOLD | 125 | 1,250 |
| 3740 | 0.2 mL 1 x 8 Tube Strips, Assorted Colors - Thermowell GOLD | 125 | 1,250 |
| 6542 | 0.2 mL 1 x 8 Tube Strips, Clear – Thermowell | 60 | 300 |
| 6547* | 0.2 mL 1 x 8 Tube Strips, Assorted – Thermowell | 60* | 300 |
| 3743 | 1 x 8 Cap Strips, Domed, Clear – Thermowell GOLD | 125 | 1,250 |
| 3748 | 1 x 8 Cap Strips, Domed, Assorted Colors – Thermowell GOLD | 125 | 1,250 |
| 3742 | 1 x 8 Optically Clear Flat Cap Strips, for RT-PCR** – Thermowell GOLD | 125 | 1,250 |

*60 of each color per bag; 1 bag of each color per case.
**Optically Clear Flat Cap Strips are designed for real-time PCR. Suitable for use with Thermowell GOLD 0.2 mL 1 x 8 PCR tube strips and 96 well microplates.

See page 83 for Compatibility Guide and Volume Reference table.



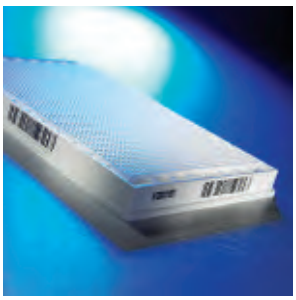
## Compatibility Guide for Thermocyclers, Sequencers, and Real Time PCR

| | | Thermowell® GOLD Microplates | | |
|---|---|---|---|---|
| | |  96 Well Half Skirt |  96 Well Full Skirt |  384 Well |
| ***Thermal Cyclers*** | | | | |
| Applied BioSystems® | GeneAmp® 9600 | ■ | | |
| | GeneAmp 9700 | ■ | | ■ |
| Biometra® | Uno® | ■ | ■ | |
| | Uno II® | ■ | | ■ |
| | T1 Thermocycler® | ■ | ■ | ■ |
| | Tgradient® | ■ | ■ | |
| | Trobot® | ■ | ■ | ■ |
| Bio-Rad® | iCycler™ | ■ | | ■ |
| Eppendorf | MasterCycler® | ■ | ■ | |
| Ericomp | SingleBlock® | ■ | | |
| | TwinBlock® | ■ | | |
| | Deltacycler I® | ■ | | |
| Flexi | Gene | | ■ | ■ |
| | Genius | | ■ | |
| ThermoHybaid | PCR Sprint® | | ■ | |
| | PCR Express® | ■ | ■ | ■ |
| | MultiBlock System | ■ | ■ | ■ |
| | Touchdown® | ■ | ■ | ■ |
| | Omnigene® | ■ | ■ | |
| | Omn-E® | ■ | ■ | |
| MJ Research™ | PTC 200 DNA Engine™ | ■ | ■ | ■ |
| | PTC 225 DNA Tetrad® | ■ | ■ | ■ |
| | PTC 100® | ■ | ■ | |
| MWG™ | Primus 96® | ■ | ■ | |
| | Primus 384® | | | ■ |
| Stratagene® | Robocycler® | | ■ | ■ |
| TaKaRa | TP 240® | | ■ | |
| | TP 3000® | ■ | ■ | |
| Techne® | Touchgene X® | ■ | ■ | ■ |
| ***RT-PCR Thermal Cyclers*** | | | | |
| Applied BioSystems | ABI PRISM® 7000 | ■ | | ■ |
| | ABI PRISM 7700 | ■ | ■ | ■ |
| | ABI PRISM 7900 HT | ■ | | ■ |
| Bio-Rad | iCycler® | | ■ | |
| Stratagene® | Mx 4000® | | ■ | |
| ***Sequencers*** | | | | |
| Applied BioSystems | ABI PRISM 3100 | ■ | | ■ |
| | ABI PRISM 3700 | ■ | | ■ |
| | ABI PRISM 3730 | ■ | | ■ |
| Amersham Biosciences | MegaBACE™ 500 | | ■ | |
| | MegaBACE 1000 Mark II | | ■ | |
| | MegaBACE 4000 | | | ■ |
| MJ Research™ | BaseStation® | | ■ | |
| | Transgenomic | | ■ | |

### Thermowell® GOLD PCR Microplates Volume Reference Table

| Format | Total Volume | Working Volume |
|---|---|---|
| 384 Well PCR Microplates | 55 µL | 50 µL |
| 96 Well PCR Microplates, Full Skirt | 240 µL | 200 µL |
| 96 Well PCR Microplates, Half Skirt | 340 µL | 300 µL |
| 96 Well PCR Microplates, Elevated Skirt | 340 µL | 300 µL |

# Bar Code Customization



## Dependable Durability

Bar codes have been quality tested for optimal readability, chemical resistance and temperature variation.

## What is a Bar Code*?

The same kind of bar codes you see in stores and supermarkets can be very useful to your lab. Consisting of a series of black bars and light spaces representing letters and/or numerals, a bar code is an easy-to-use vehicle for data collection. The specific arrangement of these bars and spaces follows strict rules known as a "symbology."

## How Does a Bar Code Work?

Bar codes reflect spots of light into a scanner in varying amounts. These differences in reflection are translated into electrical signals by a light detector inside the scanner. The signals are converted into binary ones and zeros, which are used in various combinations to stand for specific numbers and letters.

## Common Characteristics of a Bar Code

*The Quiet Zones*

The areas immediately adjacent to the beginning and the end of the bar code symbol. These zones define the parameters of the code. As a rule of thumb, zones should be 0.25" or larger to prevent misreads.

*Start and Stop Characters*

Found at the beginning and end of the bar code symbol. They tell the scanner from which direction information is being received.

*Interpretation Line*

Appears above or beneath a bar code where human readable information appears.

## Corning, Beyond the Common Bar Code

- 2.75" x 0.25" label size
- Linear (1-D) bar codes: Code 128, Code 3 of 9, Interleaved 2 of 5
- 10 Mil Narrow Bar Element (X-dimension = 0.010")
- Multiple bar code labels on a single plate
- Label placement on any side of a Corning microplate
- Customer sequence is electronically stored and can be maintained even if plates or projects change.

## Custom Designed Bar Codes

Corning will assist in designing and implementing a bar code label to meet your exact specifications. We will provide bar code label test samples at the front end of a project, to confirm decodability and ensure flawless performance in your end-use process. Our other customization features include:

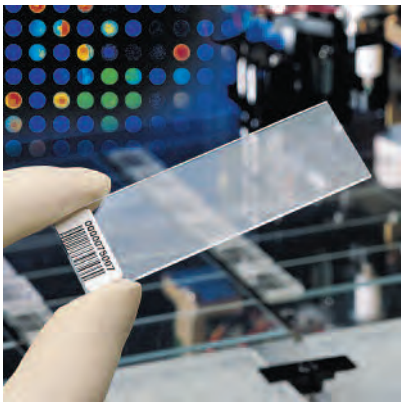
- Flexible bar code and corresponding human readable layout/orientation on the bar code label, for compatibility with the internal bar code scanner inside your automated instruments
- Color coding
- Superior print quality and resolution
- Flexible bar code label positioning
- Resistant to most commonly used organic solvents

## Expert Advice

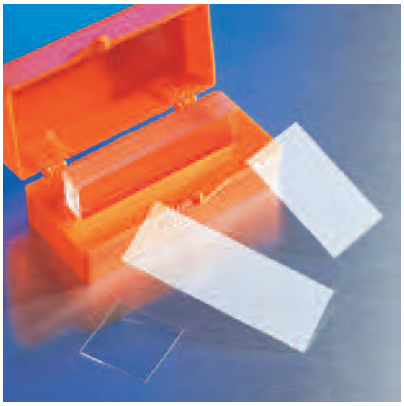
Most Corning genomics products are suitable for bar code customization. Contact Corning Life Sciences or your local representative for more information.

*Information provided by Computype, Inc.

# Microarray



UltraGAPS Coated Slides, page 89



Corning Cover Glass, page 92

# Overview

The quality and reliability of microarray results largely depend on the quality and consistency of both the glass substrate and the reagents used to manufacture and process the arrays. Corning has a history rich in science and technology, with expertise in glass and surface modification, optics, biochemistry and molecular biology, which has led to many innovations for life science research. Using this broad-based knowledge, Corning provides complete solutions to customers' complex problems and enables the achievement of breakthrough discoveries.

## TOOLS FOR EVERY STEP IN THE PROCESS

- Premium glass substrates for printing microarrays
- Optimized reagents for the highest possible performance and control throughout the microarray process
- Storage products to facilitate the process and preserve sample content

## SUPERIOR TECHNICAL AND APPLICATIONS INFORMATION

- Protocols included with every case of product, optimized from Corning's vast research experience
- Expert assistance that is just an e-mail or phone call away
- Field Applications support with a direct link to our Applications Group

## UNPARALLELED MANUFACTURING PROCESSES

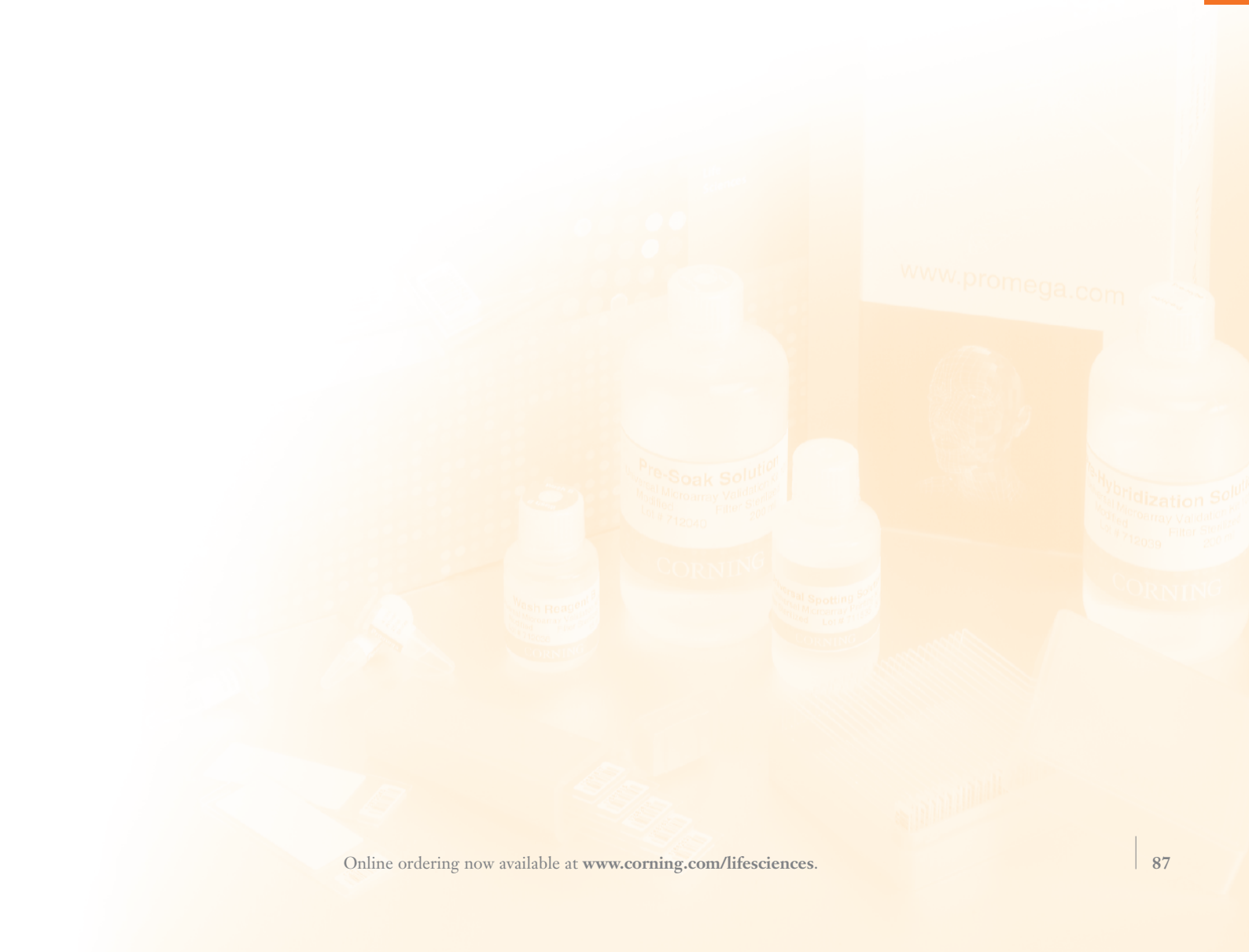
Corning® glass slides are manufactured using a proprietary coating process in a Class 100 cleanroom and undergo numerous quality control tests. Every slide is meticulously inspected for the presence of contaminating particulates, scratches and other defects before and after coating, ensuring a substrate of unmatched cleanliness, consistency, reliability and integrity.

The reagents in the Pronto!™ Microarray Kits are quality controlled to deliver consistency at every step in the process. They are optimized for use with Corning microarray slides, allowing the highest possible level of performance, standardization, and control.

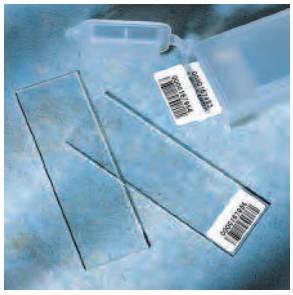
# Slide Selection Chart

| Slide | Attachment Chemistry | Probe Types | Recommended Spotting Media | Applications |
|---|---|---|---|---|
| **Epoxide** | Covalent, Epoxysilane | Oligonucleotides | 150 mM sodium phosphate, pH 8.5, 0.005% SDS | ◗ Transcriptional profiling<br>◗ SNP analysis |
| **UltraGAPS™** | Ionic, aminosilane | Double-stranded DNA | Pronto!™ Universal Spotting Solution<br>30 to 50% DMSO<br>3xSSC<br>150 mM sodium phosphate, pH 7.5 | ◗ Transcriptional profiling<br>◗ Array CGH<br>◗ ChIP on Chip |
| **GAPS™ II** | Ionic, aminosilane | Proteins | 20% Glycerol in PBS (ligand dependent) | ◗ Antibody screening<br>◗ Functional assays |





# Microarray Printing



## Epoxide Coated Slides

Corning® Epoxide Coated Slides provide the optimal, uniform surface chemistry for covalent attachment of **unmodified or amino-modifed short oligonucleotides** (~30-mer), as well as long oligonucleotides (>50-mer) and cDNA. Use Corning Epoxide Coated Slides with the Pronto! Universal Hybridization Kit (see page 94) to achieve the highest possible level of overall microarray performance.

**Versatility**
- Ideal for short oligonucleotides, long oligonucleotides, and cDNA
- Print with unmodified or amino-modified oligonucleotides
- No UV crosslinking or baking step required for DNA coupling

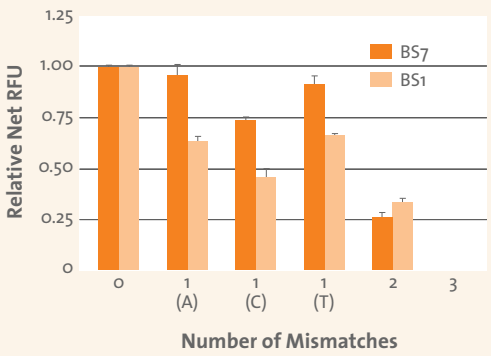
**Reproducibility**
- Minimal contribution to interarray variability (less than 3% CV)

**Sensitivity**
- Detect 1 pg RNA spiked into 4 µg of total RNA sample

**Specificity**
- Differentiate between 90% homologous oligos (3 mismatches in 30-mer oligonucleotides)

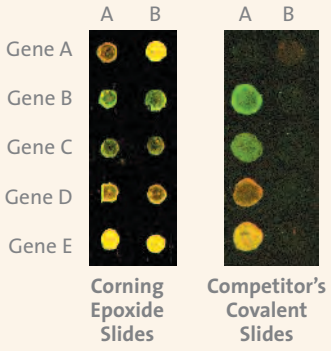
### Epoxide Coated Slides Ordering Information

| Cat. No. | Description | Slides/Pk | Slides/Cs |
|---|---|---|---|
| 40040 | Epoxide Slide Starter Kit (10 Epoxide Coated Slides, 0.8 mL Short Oligo and 0.8 mL cDNA/Long Oligo Hybridization Solution | 5 | 10 |
| 40041 | Epoxide Coated Slides with Bar Code | 5 | 25 |
| 40042 | Epoxide Coated Slides without Bar Code | 5 | 25 |
| 40043 | Epoxide Coated Slides with Bar Code, Bulk Pack | 25 | 25 |
| 40044 | Epoxide Coated Slides without Bar Code, Bulk Pack | 25 | 25 |




### Differentiate Between 90% Homologous Oligonucleotides

Corning Epoxide Coated Slides and the reagents from Pronto! Universal Hybridization Kits perform together to differentiate between 90% homologous oligonucleotides (3 mismatches in 30-mer oligonucleotides). A study using mismatch oligonucleotides designed for two *B. subtilis* genes (BS7 and BS1) was performed. No mismatches (0), 1 mismatch (A, C, T) or multiple mismatches (2, 3) were tested for specificity of detection under identical processing conditions. As indicated in the above graph, there is a reduction in signal for each successive mismatch until no detectable signal is observed for 3 mismatches.




### Use Unmodified or Amino-Modified Oligonucleotides

Oligonucleotides (30-mer) were printed onto Corning Epoxide Coated Slides and a competitor's covalent slides, following recommended protocols. Oligonucelotides were either C6-amino modified at the 5' end (A columns) or unmodified (B columns). Cy®5/Cy®3 ratios correlated strongly between modified and unmodified oligonucleotides for Corning Epoxide Slides, but the competitor's slides showed an absolute requirement for amino modification of the oligonucelotides.

## UltraGAPS™ Coated Slides

The Gamma Amino Propyl Silane surface on UltraGAPS Coated Slides is ideal for printing long (>50-mer) oligonucleotides, as well as cDNA. UltraGAPS Coated Slides have a more hydrophobic surface than competitors' slides, resulting in smaller, more consistent spot size. Each lot is tested for consistent spot morphology, signal intensity, and low background in a hybridization assay. Some of the applications for which UltraGAPS Coated Slides are ideally suited include: gene expression analysis, genotyping, and CGH (comparative genomic hybridization).

The Pronto!™ Universal Spotting Solution (see page 91) has been optimized for use with the UltraGAPS Coated Slides and provides excellent spot morphology for microarray printing. Use the Pronto! Universal Hybridization Kit (see page 94) in conjunction with these slides to achieve the highest level of microarray performance.

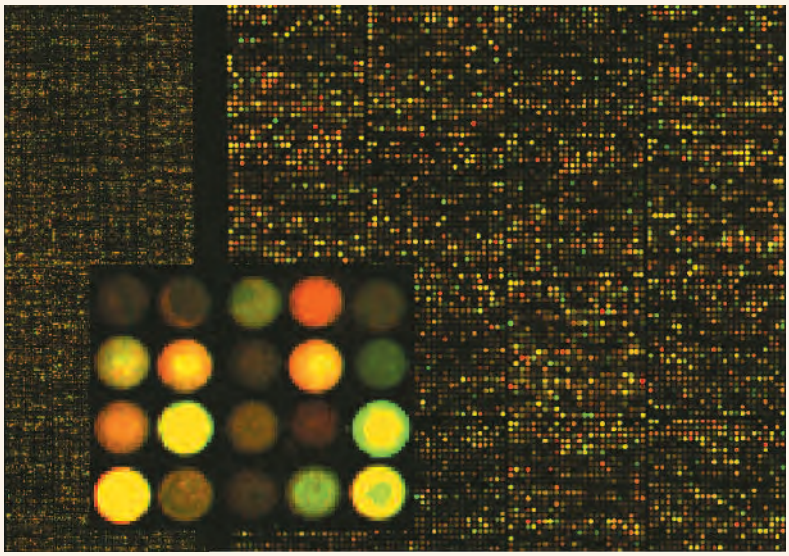
**Reproducibility**
- Minimal contribution to interarray variability (less than 5% CV)

**Dynamic Range**
- Low background autofluorescence

**Manufacturing Excellence**
- Consistent spot morphology
- Uniform surface treatment
- Higher hydrophobicity

### UltraGAPS Coated Slides Ordering Information

| Cat. No. | Description | Slides/Pk | Slides/Cs |
|---|---|---|---|
| 40015 | UltraGAPS Coated Slides with Bar Code | 5 | 25 |
| 40016 | UltraGAPS Coated Slides without Bar Code | 5 | 25 |
| 40017 | UltraGAPS Coated Slides with Bar Code, Bulk Pack | 25 | 25 |
| 40018 | UltraGAPS Coated Slides without Bar Code, Bulk Pack | 25 | 25 |
| 40019 | UltraGAPS Slide Starter Kit (Includes 10 UltraGAPS Coated Slides, 5 mL Universal Spotting Solution) | 5 | 10 |
| 40024 | Pronto! Universal Validation Kit (Includes 10 UltraGAPS Coated Slides, 15 mL Universal Spotting Solution, Pronto! Hybridization Kit for 10 arrays) | 5 | 10 |
| 40025 | Pronto! Universal Printing Kit (Includes 25 UltraGAPS Coated Slides, 50 mL Universal Spotting Solution) | 25 | 25 |



**27,000 Feature Array on UltraGAPS Coated Slides (three magnifications)**
A 27,000 feature array was printed on UltraGAPS slides, processed and hybridized using the reagents in the Pronto! Universal Hybridization Kit. The inset shows a magnification to highlight the low background, uniform spot morphology, and signal intensity of a the array.
*Data courtesy of A. Borg, Ph.D., Lund University, Sweden.*

## GAPS™ II Coated Slides

GAPS II Coated Slides are manufactured from a proprietary ultraflat glass that enhances microarray performance, enabling more accurate reading of microarrays by confocal laser scanners. GAPS II Coated Slides are manufactured using the same coating process and attachment chemistry as the original GAPS amino-silane coated slides, enabling researchers to use the same protocols that they optimized for GAPS slides. Use GAPS II Coated Slides with the Pronto!™ Universal Hybridization Kit (see page 94) to achieve maximum microarray performance.

**Flexibility** ◗ Recommended for both DNA and protein arrays

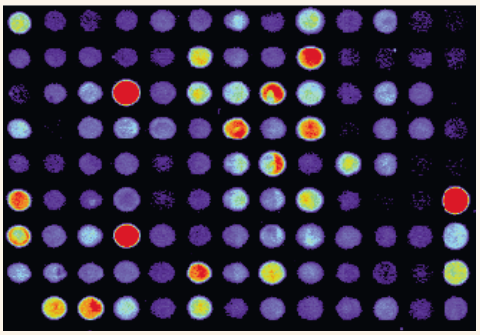
**Binding Capacity** ◗ High DNA retention for maximum signal strength

**Dynamic Range** ◗ Low background autofluorescence

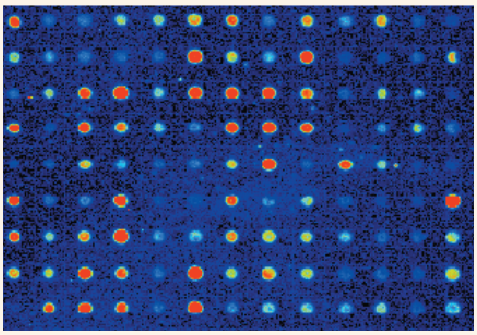
### GAPS II Coated Slides Ordering Information

| Cat. No. | Description | Slides/Pk | Slides/Cs |
|---|---|---|---|
| 40003 | GAPS II Coated Slides with Bar Code | 5 | 25 |
| 40004 | GAPS II Coated Slides without Bar Code | 5 | 25 |
| 40005 | GAPS II Coated Slides with Bar Code, Bulk Pack | 25 | 25 |
| 40006 | GAPS II Coated Slides without Bar Code, Bulk Pack | 25 | 25 |





GAPS II Coated Slide

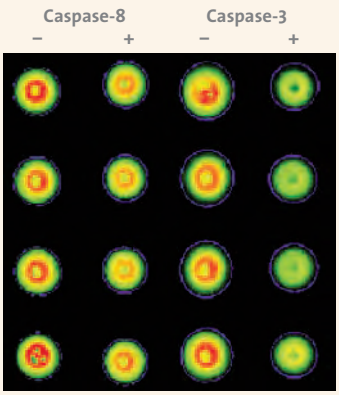


Ordinary Silane Coated Slide

### Spot Morphology on GAPS II Coated Slides

Note uniform spot morphology, high signal strength, and ultra-low background with the GAPS II Coated Slide.

*Images courtesy of Dr. John Quackenbush of the Institute for Genomic Research (TIGR), Rockville, MD.*




### Functional Peptide Array on GAPS II Coated Slides

The Caspase-3 substrate NH2-DEVDA-Biotin was suspended in Corning® Epoxide Spotting Solution and printed in quadruplicate onto anhydride-derivitized GAPS II Coated Slides. Peptide arrays were incubated with avidin-Cy®3 in the absence or presence of Caspase-8 or Caspase-3 (as indicated), and scanned at 532 nm. The printed DEVDA peptide retained function on the array, as indicated by the reduced fluorescence seen in the spots treated with Caspase-3, but not Caspase-8. Note: GAPS II Coated Slides have also been used successfully for protein arraying without derivatization.

*Data generated by Corning R&D.*


## Pronto!™ Universal Spotting Solution

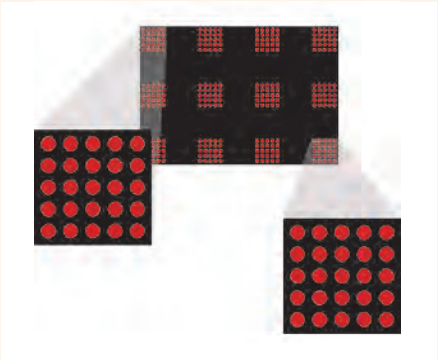
Pronto! Universal Spotting Solution is optimized for both long oligonucleotides (>50-mer) and cDNA printed on UltraGAPS™ Coated Slides. The proprietary formulation provides excellent spot morphology and has an extremely low evaporation rate. Pronto! Universal Spotting Solution is available in bulk as well as part of both the UltraGAPS Slide Starter Kit and Pronto! Universal Printing Kit.

- Low background autofluorescence
- Low evaporation rate
- Ensures consistent DNA printing concentration
- Eliminates need for volume adjustments
- Provides for even distribution of spotted DNA across entire array

### Pronto! Universal Spotting Solution Ordering Information

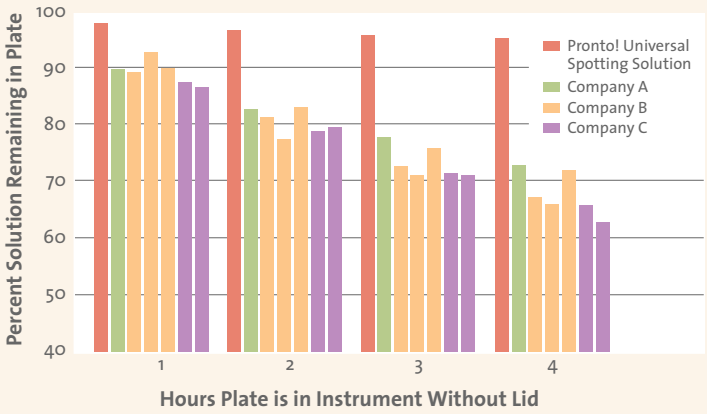
| Cat. No. | Description | Qty/Pk | Qty/Cs |
|---|---|---|---|
| 40027 | Pronto! Universal Spotting Solution, 250 mL | 1 | 1 |

| Cat. No. | Description | Slides/Pk | Slides/Cs |
|---|---|---|---|
| 40019 | UltraGAPS Slide Starter Kit (Includes 10 UltraGAPS Coated Slides, 5 mL Universal Spotting Solution) | 5 | 10 |
| 40025 | Pronto! Universal Printing Kit (Includes 25 UltraGAPS Coated Slides and 50 mL Universal Spotting Solution) | 25 | 25 |



**Pronto! Universal Spotting Solution – Spot Uniformity**

Quality control testing for Pronto! Universal Spotting Solution requires consistent spots when using 12 pins printed 25 times.




**Pronto! Universal Spotting Solution – Low Evaporation**

Pronto! Universal Spotting Solution evaporative losses are <5% over 4 hours, as compared to evapo-rate losses of >25% with other commercial spotting solutions.

## Pronto!™ Epoxide Spotting Solution

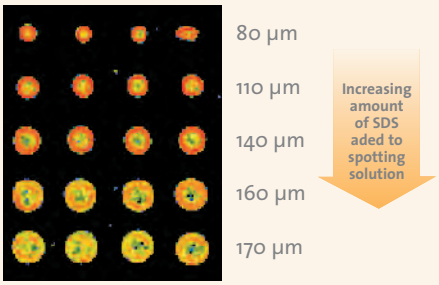
Pronto! Epoxide Spotting Solution should be used for printing all types of DNA, including short oligonucleotides (~30-mer), long oligonucleotides (>50-mer), and cDNA printed on Corning® Epoxide Coated Slides. When used with Corning Epoxide Coated Slides, this spotting solution provides spot size control for printing high density arrays without contributing to background fluorescence. Pronto! Epoxide Spotting Solution is available in bulk (250 mL) or as part of the Corning Epoxide Slide Starter Kit.

- Provides controlled spot size for high density arrays
- No significant contribution to background fluorescence of arrays
- Low evaporation rate
- Enhanced spot morphology

### Pronto! Epoxide Spotting Solution Ordering Information

| Cat. No. | Description | Qty/Pk | Qty/Cs |
|---|---|---|---|
| 40047 | Pronto! Epoxide Spotting Solution, 250 mL | 1 | 1 |

| Cat. No. | Description | Slides/Pk | Slides/Cs |
|---|---|---|---|
| 40040 | Epoxide Slide Starter Kit (10 Corning Epoxide Coated Slides 5 mL Pronto! Epoxide Spotting Solution, 0.8 mL Short Oligo Hybridization Solution) | 5 | 10 |




### Varying Spotting Solution Formulations to Adjust Spot Size

Pronto! Epoxide Spotting Solution formulation can be adjusted to alter spot size at will. DNAs were dissolved in Pronto! Epoxide Spotting Solution to which varying amounts of sodium dodecyl sulfate (SDS) had been added, and were printed in quadruplicate onto Epoxide Coated slides using 120 µm solid pins. the top row (80 µm feature diameter) had no addition, whereas adding increasing amounts of SDS resulted in correspondingly larger feature diameters.

## Corning® Cover Glass

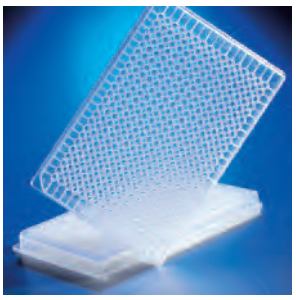
Corning Cover Glass is manufactured from special, optically clear glass. The cover glass is resistant to surface attack or weathering and will remain clear for extended periods of time. The flatness is controlled by a machine process resulting in a trouble-free fit to slides for a wettable and bubble-free mount.

The thickness of No. 1½ cover glass is 0.16 to 0.19 mm. Cover glass is packaged in plastic boxes for protection and convenience. Cover glasses in sizes and thicknesses other than those listed are available.

### Cover Glass Ordering Information

| Cat. No. | Description | Approx. Pcs/Oz | Qty/Cs |
|---|---|---|---|
| 2870-22 | Corning Cover Glass, Square, 22 x 22 mm, No. 1½ | 135 | 10 oz |
| 2940-223 | Corning Cover Glass, Rectangular, 22 x 30 mm, No. 1½ | 97 | 10 oz |
| 2940-224 | Corning Cover Glass, Rectangular, 22 x 40 mm, No. 1½ | 73 | 10 oz |
| 2940-225 | Corning Cover Glass, Rectangular, 22 x 50 mm, No. 1½ | 58 | 10 oz |
| 2940-243 | Corning Cover Glass, Rectangular, 24 x 30 mm, No. 1½ | 89 | 10 oz |
| 2940-244 | Corning Cover Glass, Rectangular, 24 x 40 mm, No. 1½ | 67 | 10 oz |
| 2940-245 | Corning Cover Glass, Rectangular, 24 x 50 mm, No. 1½ | 54 | 10 oz |
| 2940-246 | Corning Cover Glass, Rectangular, 24 x 60 mm, No. 1½ | 45 | 10 oz |

## 384 Well Microarray Printing Plates



Corning® 384 well polypropylene microplates are available in both low and full volume well formats to meet source plate requirements for printing DNA content onto microarray slides. The plates are manufactured from solvent resistant, virgin polypropylene that is compatible with many organic solvents including DMSO. The plates feature rigid, full length skirts for full compatibility with automation.

The 384 Well Low Volume Microarray Printing Plate (Cat. No. 3672), with a working volume of 2 to 20 µL, has a conical V-bottom, square well geometry that provides for maximum sample recovery. The 384 Well Full Volume Storage Plate (Cat. No. 3656) has a total well volume of 95 µL.

- Well design provides for maximum sample recovery
- Resistant to many organic solvents including DMSO
- Certified DNase- and RNase-free
- Automation compatible

### 384 Well Microarray Printing Plates Ordering Information

| Cat. No. | Description | Qty/Pk | Qty/Cs |
|---|---|---|---|
| 3672 | 384 Well Microarray Printing Plate, Polypropylene, Low Volume | 10 | 50 |
| 3656 | 384 Well Storage Plate, Polypropylene, Full Volume | 25 | 100 |
| 6569 | Aluminum Sealing Tape for 384 Well Microplates | 100 | 100 |
| 3099 | Universal Lid for 384 Well Microplates | 25 | 50 |
| 3085 | DMSO Resistant Lid for 384 Well Microplates | 25 | 50 |

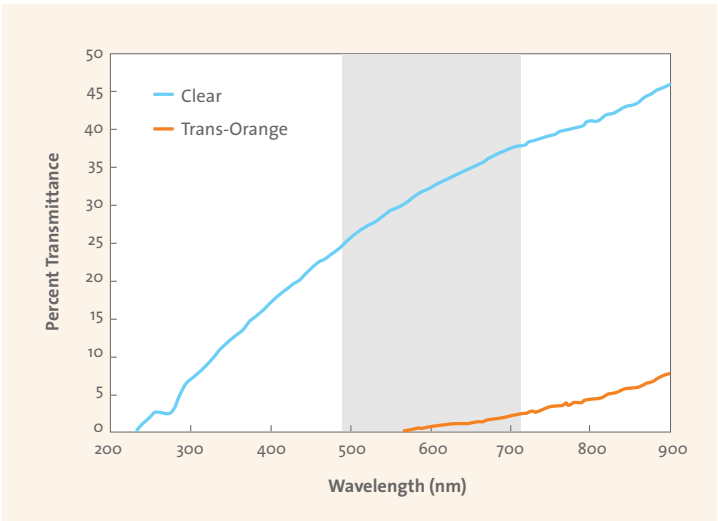
## Microarray Slide Mailers/Storage Boxes

The plastic containers in which UltraGAPS™ Coated Slides are shipped also function as storage boxes for printed arrays. These containers are available as either 5 slide mailers or 25 slide storage boxes. The trans-orange plastic has low transmittance in the 500 to 700 nm wavelength range which helps protect Cy®3 and Cy®5 dyes from photobleaching. These rigid plastic containers do not shed particles or outgas volatile chemicals that may contaminate microarray slides.

The Corning® 25 Slide Storage Box has a lift off lid which is easy to open and close. The 5 Slide Mailer has a hinged lid that snaps closed tightly to prevent slides from accidentally falling out.

### Microarray Slide Mailers/Storage Boxes Ordering Information

| Cat. No. | Description | Qty/Pk | Qty/Cs |
|---|---|---|---|
| 40082 | 5 Slide Mailer for Microarrays | 50 | 50 |
| 40081 | 25 Slide Storage Box for Microarrays | 10 | 20 |




**Transmittance Through Corning Trans-Orange Slide Mailers**
Low transmittance (500-700 nm) helps protect Cy3 and Cy5 from photobleaching.

## Microarray Storage Pouches

Corning® Microarray Storage Pouches for 5- and 25-slide holders are the same pouches in which Corning UltraGAPS™ and Epoxide Coated Slides are shipped. These tear-resistant, foil-laminated pouches can be used to store and ship microarrays.

When heat-sealed, the pouches protect microarrays from light, humidity, and environmental contaminants. Each pouch comes affixed with a 3" x 4" white marking label.

**Microarray Storage Pouches Ordering Information**

| Cat. No. | Description | Qty/Pk | Qty/Cs |
|---|---|---|---|
| 40085 | 5 Slide Storage Pouch | 50 | 50 |
| 40086 | 25 Slide Storage Pouch | 50 | 50 |

# Microarray Processing



## Pronto!™ Universal Hybridization Kits

Pronto! Universal Hybridization Kits (Cat. Nos. 40026 and 40028) provide all of the reagents necessary to perform hybridizations of fluorescently labeled cDNA to microarrays printed on Corning Epoxide, UltraGAPS, or GAPS™ II Coated Slides. The Pronto! Universal Validation Kit (Cat. No. 40024) contains all of the reagents from above as well as 10 UltraGAPS Coated Slides and 15 mL of Universal Spotting Solution.

**Pre-Soak Solution**
- Remove existing autofluorescence from printed microarrays

**Pre-Hybridization Solution**
- Block background fluorescence during array hybridization

**Hybridization Solutions**
- Solutions compatible with cDNA, long oligonucleotide, and short oligonucleotide content
- Ready to use (no dilution required)
- Contain blockers to increase specificity

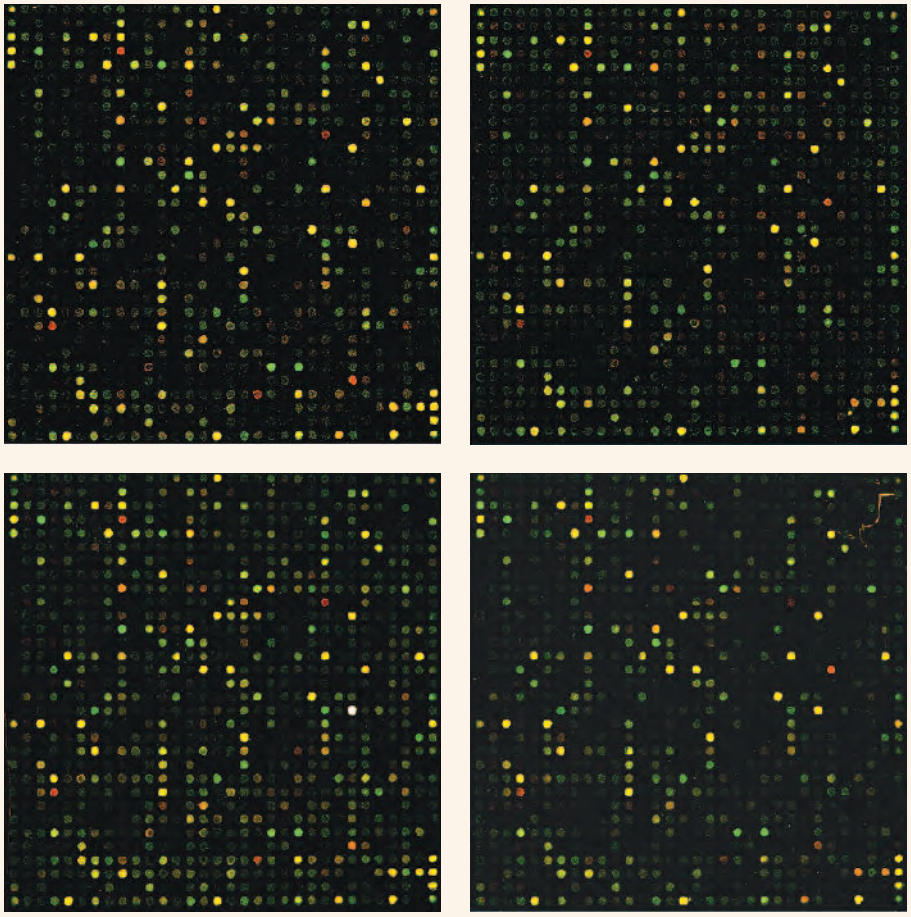
**Wash Solutions**
- Quality tested to ensure manufacturing consistency

**Pronto! Universal Hybridization Kit Ordering Information**

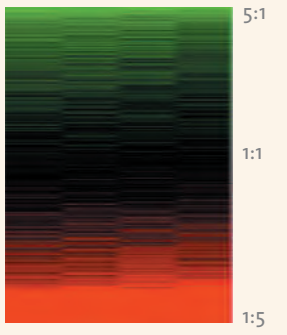
| Cat No. | Product | Reactions |
|---|---|---|
| 40024 | Pronto! Universal Validation Kit (Includes 10 UltraGAPS Coated Slides, 15 mL Universal Spotting Solution) | 10 |
| 40028 | Pronto! Universal Hybridization Kit | 10 |
| 40026 | Pronto! Universal Hybridization Kit | 25 |
| 40030* | Pronto! Hybridization Kit without Pre-soak | 25 |
| 40090 | Pronto! cDNA Long Oligo Hybridization Solution, 20 mL | |
| 40048 | Pronto! Short Oligo Hybridization Solution, 4 mL | |

*Larger volumes of reagents specially designed for use in automated hybridization stations.

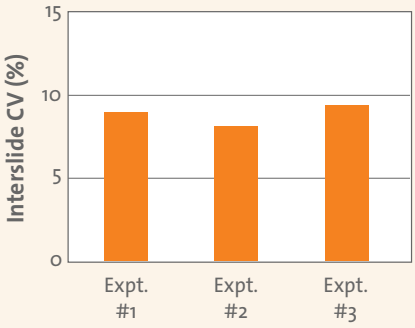
A



B




C




**Superior Reproducibility**

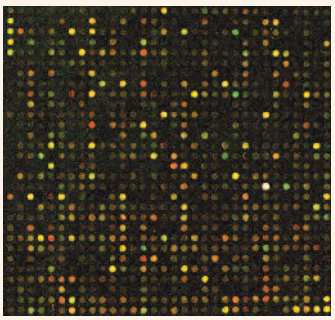
Four separate 4K arrays were processed using the Pronto!™ Universal Hybridization Kit to demonstrate reproducibility (A). Differential gene expression patterns as represented by ratios of normalized Cy®3/Cy®5 in the cluster diagram were found to be very consistent between the four arrays (B). Interslide CVs were shown to be <10% for each of 3 separate experiments performed (C).

## Pronto!™ Background Reduction Kit

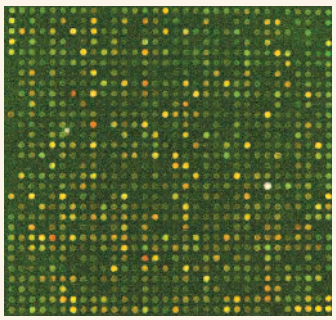
The Pronto! Background Reduction Kit is designed to eliminate background autofluorescence and prepare printed arrays for hybridization. It also can be used as the final step in the array fabrication process. The strong reducing effect of this treatment leads to increased sensitivity and specificity by removing autofluorescent background due to oxidation. The kit includes liquid sodium borohydrate and 1 L of Pre-Soak Solution which provides enough reagents for the treatment of at least 50 arrays.

### Pronto! Background Reduction Kit Ordering Information

| Cat. No. | Description | Qty/Pk | Qty/Cs |
|---|---|---|---|
| 40029 | Pronto! Background Reduction Kit | 1 | 1 |



With Presoak



Without Presoak

| | With Presoak | Without Presoak |
|---|---|---|
| Background cutoff (RFU) | 100.6 | 183.3 |
| Number of features ≥ 2X background | 1221 | 891 |

**Detect Low Expressing Genes**

Use of the Pronto! Background Reduction Kit results in the increased detection of low expressing genes (see table). Reduction of background autofluorescence is evident when 4K human arrays were processed using the presoak reagents in the Pronto! Background Reduction Kit. Arrays that were processed with the presoak reagents (left image) had a lower background detection cutoff than those processed without presoak (right image).

## Hybridization Chambers

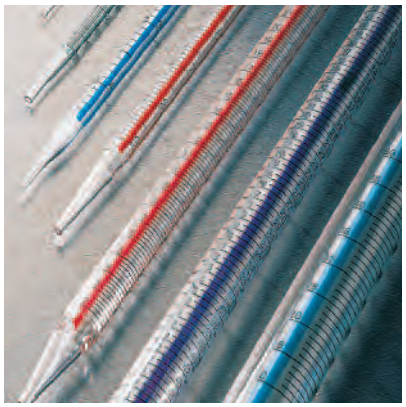
Corning® Hybridization Chambers are designed to hold microarray slides (25 x 75 mm) at constant humidity during hybridization incubations. The O-ring and retaining clips ensure that the reusable chambers remain watertight when submerged in waterbaths and airtight in hybridization ovens. Wells in the base hold 10 to 15 µL of water to maintain optimal interior humidity.

The original Corning Hybridization Chamber (Cat. No. 2551) provides the ideal interior height and volume for use with one slide of the standard 1 mm thickness and a standard coverglass. The Corning Hybridization Chamber II (Cat. No. 40080) has an increased interior depth which not only allows for single slide hybridizations, but also allows the user to place two arrays face-to-face and hybridize using a single labeled target. This chamber can also be used with raised-edge coverslips (Erie Scientific M-Series Lifter Slips™) that are thicker or taller than standard thin coverglass.

### Hybridzation Chambers Ordering Information

| Cat. No. | Description | Qty/Pk | Qty/Cs |
|---|---|---|---|
| 2551 | Hybridization Chamber | 1 | 5 |
| 40080 | Hybridization Chamber II with Increased Depth | 1 | 5 |
| 40001 | Replacement O-rings (fit both chambers) | 5 | 5 |

# Liquid Handling



Stripettes, page 99

Vaccum Filters, page 105

Croygenic Vials, page 116

# Overview

## DESIGNED FOR PERFORMANCE

Corning Life Sciences offers a full line of liquid handling products that are manufactured under strict process controls guaranteeing consistent product performance. All Corning Life Sciences plastics manufacturing facilities are ISO 9001:2000 registered. ISO registration is recognized worldwide as a standard of excellence for quality systems.

In addition, customers can now request a Certificate of Quality for any Corning® or Costar® liquid handling product. Certificates are available at **www.corning.com/lifesciences**. This certificate details lot-specific information on component materials, sterility testing and pyrogen testing. Also available are detailed product descriptions and drawings that highlight product dimensions and testing procedures. All are available simply by calling your local Corning Life Sciences office.

## NONPYROGENIC CERTIFICATION

Most Corning and Costar liquid handling products are certified non-pyrogenic with a documented endotoxin level of equal to or less than 0.1 EU/mL. Endotoxins have been shown to cause variability in cell culture. Nonpyrogenic certification is another way Corning helps ensure consistent cell culture results. Corning also offers a detailed technical bulletin on the effects of endotoxins in cell culture. This may be obtained by calling your local Corning Life Sciences office or by downloading the bulletin from the Corning web site **www.corning.com/lifesciences**.


# Pipets

Stripette Serological Pipets

Clear Plastic Wrap

Paper/Plastic Wrap

Bulk Pack

Clean Room Packaging

## Stripette® Serological Pipets

- Stripette pipets are sterile, nonpyrogenic, and RNase-/DNase-free.
- Exclusive antidrip tip assures accurate delivery.
  - Available in 25, 50 and 100 mL sizes
- Color-coded magnifier stripes make volume reading easier.
- Bidirectional graduations provide choice of ascending and descending scales
- Negative graduations allow additional working volume.
- Four packaging options:
  - Individually wrapped, clear plastic
  - Individually wrapped, paper/plastic
  - Bulk packed for large-scale sterile and nonsterile liquid handling applications
  - Clean room packed; individually wrapped, paper/plastic, triple bagged, SAL $10^{-6}$

### Stripette Pipets Ordering Information

| Cat. No. | Capacity (mL) | Graduations (mL) | Negative Grads. (mL) | Color Coded Stripe | Qty/Pk | Qty/Cs |
|---|---|---|---|---|---|---|
| *Individually Wrapped, Clear Plastic Wrap* | | | | | | |
| 4011 | 1 | 1/100 | 0.2 | Yellow | 100/bag | 1,000 |
| 4012 | 1 | 1/100 | 0.2 | Yellow | 100/bag | 200 |
| 4021 | 2 | 1/100 | 0.2 | Green | 100/bag | 1,000 |
| 4051 | 5 | 1/10 | 2.5 | Blue | 50/bag | 200 |
| 4101 | 10 | 1/10 | 3.0 | Orange | 50/bag | 200 |
| 4492* | 10 | 1/10 | 3.0 | Orange | 50/bag | 200 |
| 4251 | 25 | 2/10 | 10.0 | Red | 50/bag | 200 |
| 4501 | 50 | 1/2 | 10.0 | Purple | 25/bag | 100 |
| 4484 | 100 | 1 | N/A | Aqua | 10/bag | 100 |
| *Individually Wrapped, Paper/Plastic Wrap* | | | | | | |
| 4485 | 1 | 1/100 | 0.2 | Yellow | 50/bag | 1,000 |
| 4486 | 2 | 1/100 | 0.2 | Green | 50/bag | 1,000 |
| 4487 | 5 | 1/10 | 2.5 | Blue | 50/bag | 200 |
| 4488 | 10 | 1/10 | 3.0 | Orange | 50/bag | 200 |
| 4489 | 25 | 2/10 | 10.0 | Red | 25/bag | 200 |
| 4490 | 50 | 1/2 | 10.0 | Purple | 25/bag | 100 |
| 4491 | 100 | 1 | N/A | Aqua | 10/bag | 100 |
| *Bulk Packed in Bags* | | | | | | |
| 4010 | 1 | 1/100 | 0.2 | Yellow | 50/bag | 1,000 |
| 4020 | 2 | 1/100 | 0.2 | Green | 50/bag | 1,000 |
| 4050 | 5 | 1/10 | 2.5 | Blue | 50/bag | 500 |
| 4100 | 10 | 1/10 | 3.0 | Orange | 50/bag | 500 |
| 4250 | 25 | 2/10 | 10.0 | Red | 25/bag | 200 |
| 4500 | 50 | 1/2 | 10.0 | Purple | 25/bag | 100 |
| New *Clean Room Pack, Individually Wrapped, Paper/Plastic, Triple Bagged* | | | | | | |
| 7041 | 1 | 1/100 | 0.2 | Yellow | 50/bag | 1,000 |
| 7042 | 2 | 1/100 | 0.2 | Green | 50/bag | 1,000 |
| 7045 | 5 | 1/10 | 2.5 | Blue | 50/bag | 200 |
| 7015 | 10 | 1/10 | 3.0 | Orange | 50/bag | 200 |
| 7016 | 25 | 2/10 | 10.0 | Red | 25/bag | 200 |
| 7017 | 50 | 1/2 | 10.0 | Purple | 25/bag | 100 |
| 7000 | 100 | 1 | N/A | Aqua | 10/bag | 100 |

*Cat. No. 4492 features a wide tip for handling viscous fluids.


Aspirating Pipets

## Aspirating Pipets

Aspirating pipets are sterile, ungraduated and unplugged polystyrene pipets for aspirating liquid using vacuum suction.

### Aspirating Pipets Ordering Information

| Cat. No. | Volume (mL) | Packaging | Qty/Pk | Qty/Cs |
|---|---|---|---|---|
| 4975 | 1 | Individually wrapped, bulk packed | 50 | 1,000 |
| 9186 | 2 | Individually wrapped, clear plastic wrap | 100 | 1,000 |
| 9099 | 5 | Individually wrapped, clear plastic wrap | 50 | 200 |

# Pipetting Aids


Stripettor Pipetting Aid

## Stripettor™ Pipetting Aids

- Lightweight, adjustable speed control, and designed for use with all serological pipets
- Nose cones are autoclavable and have a replaceable 0.2 µm hydrophobic sterilizing filter
- Operates on a rechargeable 9V nickel hydride battery and features an LED light on the handle that lets the user know when to recharge
- Unit is fully operational while recharging

### Stripettor Pipetting Aid Ordering Information

| Cat. No. | Product Description | Qty/Cs |
|---|---|---|
| 4910 | Stripettor with sterile filter, rechargeable battery and recharger/adapter | 1 |
| 4911 | Grommet replacement (silicone pipet holder) | 1 |
| 4922 | 0.2 µm hydrophobic replacement filter | 4 |
| 4923 | 0.2 µm hydrophobic replacement filter | 25 |
| 4914 | Recharger/adapter for 4910 | 1 |



# Pipettors


Lambda Single Channel Pipettor

## Lambda® Single Channel Pipettor

- Corning® Lambda pipettors have a contoured handgrip and hook-style hand rest for greater comfort and less fatigue during prolonged use
- Quick-turn volume adjustment knob and easy-to-read digital volume display makes volume selection easier
- Volume ranges include 0.1 to 2 µL, 0.5 to 10 µL, 2 to 20 µL, 10 to 100 µL, 20 to 200 µL, and 100 to 1000 µL
- Bottom part of unit is autoclavable
- Backed by a three-year warranty

### Lambda Single Channel Pipettor Ordering Information

| Cat. No. | Volume Range (µL) | Qty/Cs |
|---|---|---|
| 4959 | 0.1-2.0 | 1 |
| 4960 | 0.5-10 | 1 |
| 4961 | 2-20 | 1 |
| 4962 | 10-100 | 1 |
| 4963 | 20-200 | 1 |
| 4964 | 100-1,000 | 1 |
| 4958 | Pipettor Stand | 1 |

## 8-Pette® and 12-Pette® Multichannel Pipettors


8 and 12-Pette Multichannel Pipettors

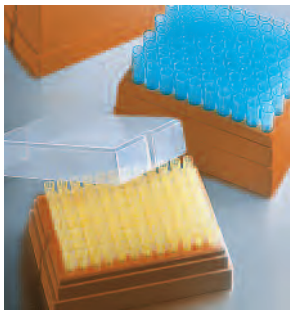
- Costar® 8-Pette and 12-Pette multichannel pipettors feature a unique, ergonomic trigger-style aspiration and dispense control mechanism designed to reduce thumb fatigue during repetitive pipetting
- Volume range is 20 to 200 µL
- Volume is adjusted with a vernier-scale spindle
- Pipettors are entirely autoclavable

### 8-Pette and 12-Pette Multichannel Pipettors Ordering Information

| Cat. No. | Volume Range (µL) | Channels | Qty/Cs |
|---|---|---|---|
| 4880 | 20-200 | 12 | 1 |
| 4888 | 20-200 | 8 | 1 |

# Pipet Tips

## Universal Fit 200 and 1000 µL Pipet Tips


Universal Fit Pipet Tips

- Corning® universal fit tips are designed to provide a reliable fit with all major brand pipettors. (A Pipet Tip Compatibility Guide can be requested or downloaded from the Corning website.)
- Beveled orifice helps ensure accurate fluid delivery
- 1-200 µL universal fit tips are graduated at the 10, 50, and 100 µL volumes
- Select from three packaging options:
  - Racked tips are certified RNase-/DNase-free and nonpyrogenic
  - Stack rack tips feature a stack of five racks, each containing 96 tips, for a total of 480 tips in a space-saving design
  - Bulk packed tips are nonsterile and very economical

### Universal Fit 200 and 1,000 µL Pipet Tips Ordering Information

| Cat. No. | Volume Range (µL) | Format | Color | Sterile | Racks/ Cs | Tips/ Cs |
|---|---|---|---|---|---|---|
| *Racked Tips* | | | | | | |
| 4860 | 1-200 | 96 Tips/Rack | Yellow | Yes | 10 | 960 |
| 4863 | 1-200 | 96 Tips/Rack | Natural | No | 10 | 960 |
| 4864 | 1-200 | 96 Tips/Rack | Natural | Yes | 10 | 960 |
| 4865 | 1-200 | 96 Tips/Rack | Yellow | No | 10 | 960 |
| 4867 | 100-1,000 | 100 Tips/Rack | Blue | No | 10 | 1,000 |
| 9032 | 100-1,000 | 100 Tips/Rack | Blue | Yes | 10 | 1,000 |

## Universal Fit 200 and 1000 µL Pipet Tips (Continued)

Universal Fit HInged Rack Pipet Tips

### Universal Fit 200 and 1,000 µL Pipet Tips Ordering Information

| Cat. No. | Volume Range (µL) | Format | Color | Sterile | Racks/ Cs | Tips/ Cs |
|---|---|---|---|---|---|---|
| *Stack Rack Tips* | | | | | | |
| 4803 | 1-200 | 480 Tips/Stack Rack | Natural | No | 10 | 4,800 |
| 4804 | 1-200 | 480 Tips/Stack Rack | Natural | Yes | 10 | 4,800 |
| 4806 | 1-200 | 480 Tips/Stack Rack | Natural | No | 2 | 960 |
| *Bulk Packed Tips* | | | | | | |
| 4844 | 1-200 | Bulk Pack | Natural | No | 1,000 | 10,000 |
| 4845 | 1-200 | Bulk Pack | Yellow | No | 1,000 | 10,000 |
| 4862 | 1-200 | Bulk Pack | Natural | No | 1,000 | 1,000 |
| 4866 | 1-200 | Bulk Pack | Yellow | No | 1,000 | 1,000 |
| 4846 | 100-1,000 | Bulk Pack | Blue | No | 1,000 | 10,000 |
| 4868 | 100-1,000 | Bulk Pack | Blue | No | 1,000 | 1,000 |
| *Universal Fit Hinged Rack Pipet Tips* | | | | | | |
| 4711 | 1-200 µL | 96 Tip Hinged Rack | Yellow | Yes | 10 | 960 |
| 4712 | 1-200 µL | 96 Tip Hinged Rack | Yellow | No | 10 | 960 |
| 4710 | 1-200 µL | 96 Tip Insert for Hinged Rack | Yellow | No | 10 Inserts | 960 |
| 4714 | 100-1000 µL | 100 Tip Hinged Rack | Blue | Yes | 10 | 1,000 |
| 4713 | 100-1000 µL | 100 Tip Hinged Rack | Blue | No | 10 | 1,000 |
| 4715 | 100-1000 µL | 100 Tip Insert for Hinged Rack | Blue | No | 10 Inserts | 1,000 |

## Smart Rack Pipet Tip Refill System

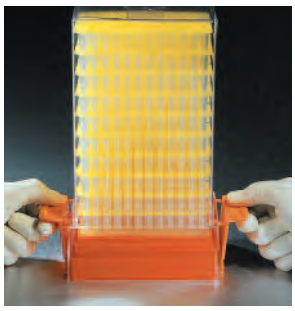

Smart Rack Pipet Tip Refill System

- Corning® Smart Rack makes refilling pipet tip racks easier than ever
- Tips are contained on an autoclavable plastic reload card and transferred to a rack with a disposable reloading device (included)
- Compatible with many popular brand 200 µL 96-tip racks
- Two configurations are available – 94-tip and 96-tip. In the 94-tip configuration, each reload card contains 94 tips and two corner anchoring pins that secure the card to the rack
- The 96-tip configuration does not include the corner anchoring pins.
- Smart Rack tips are nonsterile, autoclavable, RNase-/DNase-free, and nonpyrogenic

### Smart Rack Pipet Tip Refill System Ordering Information

| Cat. No. | Tip Volume (µL) | Color | Tips/Pack | Packs/Cs | Tips/Cs |
|---|---|---|---|---|---|
| 4786 | 200 | Natural | 940 | 5 | 4,700 |
| 4787 | 200 | Natural | 960 | 5 | 4,800 |

## Pipet Tip Loading System



Pipet Tip Loading System

- The Corning pipet tip loading system makes reloading racks economical and effortless
- The system consists of a one-piece base that attaches to a “magazine” consisting of 10 layers of 96 tips
- Simply place the loader and magazine over an empty rack, lower the magazine, and “click” – the rack is loaded and ready for use
- Tip loading system tips are nonsterile, autoclavable, DNase/RNase-free, and nonpyrogenic

### Pipet Tip Loading System Ordering Information

| Cat. No. | Description |
|---|---|
| 4780 | Starter Kit, natural 1-200 µL tips; includes 1 tip loader, 1 magazine with 960 tips and 10 empty racks |
| 4781 | Starter Kit, yellow 1-200 µL tips; includes 1 tip loader, 1 magazine with 960 tips and 10 empty racks |

## Pipet Tip Loading System Refill Magazines

- Tip loading system refills consist of magazines containing 10 layers of 96 tips
- Each magazine refills 10 racks

### Pipet Tip Loading System Refill Magazines Ordering Information

| Cat. No. | Tip Volume (µL) | Color | Tips/Magazine | Magazines/Cs | Tips/Cs |
|---|---|---|---|---|---|
| 4783 | 1-200 | Natural | 960 | 5 | 4,800 |
| 4785 | 1-200 | Yellow | 960 | 5 | 4,800 |

## IsoTip Filtered Pipet Tips

Isotip Filtered Pipet Tips

- IsoTip filtered pipet tips feature an inert, hydrophobic barrier that prevents aerosolized contaminants from coming in contact with pipettor shafts
- Ideal for applications where avoiding cross contamination is critical, such as DNA amplification and radioisotope handling
- Packaged sterile
- Certified RNase-/DNase-free and nonpyrogenic
- A Pipet Tip Compatibility Guide can be requested or downloaded from the Corning website.

### IsoTip Filtered Pipet Tips Ordering Information

| Cat. No. | Volume Range (µL) | Precise Fit | Tips/ Rack | Racks/ Cs | Tips/ Cs |
|---|---|---|---|---|---|
| 4801 | 0.1-2.0 | Gilson® and other popular ultra-micropipettors | 96 | 10 | 960 |
| 4807 | 0.2-10 | Gilson and other popular ultra-micropipettors | 96 | 10 | 960 |
| 4808 | 0.5-10 | Eppendorf® and other popular ultra-micropipettors | 96 | 10 | 960 |
| 4821 | 1-30 | All popular research-grade pipettors | 96 | 10 | 960 |
| 4823 | 1-200 | All popular research-grade pipettors | 96 | 10 | 960 |
| 4810* | 1-200 | All popular research-grade pipettors | 96 | 10 | 960 |
| 4809 | 100-1,000 | All popular research-grade pipettors | 100 | 10 | 1,000 |

*Extended length tip designed for use with 2-20 µL, 10-100 µL, and 20-200 µL pipettors.

## 1 to 200 µL Gel-Loading Pipet Tips

Gel-Loading Pipet Tips and Microvolume Gel-Loading Pipet Tips

- Corning® gel-loading pipet tips feature a capillary end that allows easy access into vertical and horizontal electrophoresis gels
- Total capacity of 200 µL
- Certified RNase-/DNase-free and nonpyrogenic
- Tips are 83 mm in length

### 1 to 200 µL Gel-Loading Pipet Tips Ordering Information

| Cat. No. | Tip Shape | End Thickness (mm) | Sterile | Tips/ Rack | Racks/ Cs | Tips/ Cs |
|---|---|---|---|---|---|---|
| 4853 | Round | 0.5 | No | 200 | 2 | 400 |
| 4854 | Flat | 0.4 | No | 200 | 2 | 400 |
| 4884 | Flat | 0.2 | No | 200 | 2 | 400 |

## Microvolume Gel-Loading Pipet Tips

- Corning microvolume gel-loading tips feature a capillary end for gel-loading and are designed for use with Gilson and other popular ultra-micropipettors
- Working volume of 0.2 to 10 µL
- Certified RNase-/DNase-free and nonpyrogenic

### Microvolume Gel-Loading Pipet Tips Ordering Information

| Cat. No. | Tip Shape | End Thickness (mm) | Sterile | Tips/ Rack | Racks/ Cs | Tips/ Cs |
|---|---|---|---|---|---|---|
| 4815 | Flat | 0.2 | No | 200 | 2 | 400 |

## Microvolume Pipet Tips

Microvolume Pipet Tips

- Microvolume tips provide accurate, reliable performance in the 0.1-10 µL range for major brand ultra-micropipettors
- All racked tips are certified RNase-/DNase-free and nonpyrogenic

### Microvolume Pipet Tips Ordering Information

| Cat. No. | Volume Range (µL) | Fit | Sterile | Qty/Pk | Tips/ Cs |
|---|---|---|---|---|---|
| 4826 | 0.1-10 | Gilson® and other popular ultra-micropipettors | No | 96/rack | 960 |
| 4894 | 0.1-10 | Gilson and other popular ultra-micropipettors | Yes | 96/rack | 960 |
| 4840 | 0.1-10 | Gilson and other popular ultra-micropipettors | No | 1,000/bag | 10,000 |
| 4830 | 0.5-10 | Eppendorf® and other popular ultra-micropipettors | Yes | 96/rack | 960 |
| 4834 | 0.5-10 | Eppendorf and other popular ultra-micropipettors | No | 96/rack | 960 |
| 4901 | 0.5-10 | Eppendorf and other popular ultra-micropipettors | No | 1,000/bag | 10,000 |



# Reagent Reservoirs

**4870 and 4871**
50 mL Reagent Reservoir

**4872 and 4873**
100 mL Reagent Reservoir

Costar® Reagent Reservoirs are ideal for repetitively filling multichannel pipettors

- Manufactured from modified polystyrene
- Sterile
- Disposable

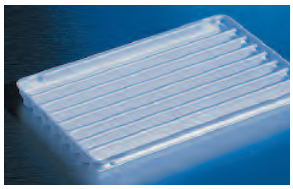
### Reagent Reservoirs Ordering Information

| Cat No. | Volume (mL) | Color | Qty/Pk | Qty/Cs |
|---|---|---|---|---|
| 4870 | 50 | Natural | 5/bag | 200 |
| 4871 | 50 | Natural | 1/bag | 100 |
| 4872 | 100 | White | 5/bag | 200 |
| 4873 | 100 | White | 1/bag | 100 |

# Transtar-96® Well Liquid Transfer System

Transtar-96 System

- The Costar® Transtar-96 System is a portable, autoclavable liquid handling device for use with 96 well plates
- A sterile 96 tip disposable cartridge, which loads into the Transtar system, enables liquids to be aspirated, transferred and dispensed over a volume range of 25 to 200 µL in 5 µL increments
- The Transtar-96 System is ideal for changing cell culture media and screening monoclonal antibodies
- Transtar-96 System accuracy is rated at ±5% at all volume levels



Transtar Disposable Cartridge

**Transtar-96 Well Liquid Transfer System Ordering Information**

| Cat. No. | Description | Sterile | Qty/Pk | Qty/Cs |
|---|---|---|---|---|
| 7605 | Transtar-96, adjustable-volume pipettor | N/A | 1 | 1 |
| 7606 | Transtar elevator | N/A | 1 | 1 |
| 7610 | Transtar disposable cartridges | Yes | 1 | 24 |
| 4876 | Transtar disposable reservoir liner, open | Yes | 1 | 100 |
| 4877 | Transtar disposable reservoir liner, 12-channel | Yes | 1 | 100 |
| 4878 | Transtar disposable reservoir liner, 8-channel | Yes | 1 | 100 |

The Costar aspirator is an aspirating device for safe liquid removal/disposal from a variety of laboratory vessels using standard disposable pipet tips.

# Aspirator

Aspirator

**Aspirator Ordering Information**

| Cat. No. | Description |
|---|---|
| 4930 | Aspirator device (includes hand piece, grommet for accessory attachment, and single-channel adapter for use with disposable pipet tips) |
| 4931 | 8-channel adapter for use with disposable pipet tips |

# Vacuum Filters

Vacuum Filter

Corning offers a variety of filter systems, membranes, pore sizes, and materials. For help in selecting the best filter combination for your research, please refer to the Technical Appendix for *Selecting the Best Filter for Your Application* on page 119.

## 115 mL Vacuum Filters

- 60 mm diameter membrane
- Low center of gravity and wide base for stability
- Separate pour spout to remove filtered sample which minimizes contamination
- Individually packaged, sterile, certified nonpyrogenic

**115 mL Vacuum Filters Ordering Information**

| Cat. No. | Membrane | Volume (mL) | Pore Size (µm) | Qty/Cs |
|---|---|---|---|---|
| 430944 | CA | 115 | 0.22 | 24 |
| 430945 | CA | 115 | 0.45 | 24 |

CA = Cellulose Acetate

## 150 mL Tube Top Vacuum Filters


Tube Top Vacuum Filter

- 50 mm diameter membrane
- Minimizes unnecessary transfers by filtering directly into 50 mL centrifuge tube
- Includes two centrifuge tube stands with each case
- Each polypropylene centrifuge tube is supplied with an individually wrapped cap for storage
- Individually packaged, sterile, certified nonpyrogenic

### 150 mL Tube Top Vacuum Filters Ordering Information

| Cat. No. | Membrane | Funnel Size/ Tube Size (mL) | Pore Size (µm) | Qty/Cs |
|---|---|---|---|---|
| 430314 | CA | 150/50 | 0.45 | 12 |
| 430320 | CA | 150/50 | 0.22 | 12 |

CA = Cellulose Acetate

## Vacuum Filter Systems


Vacuum Filter Systems

- Four sizes: 150 mL; 250 mL, 500 mL, and 1L
- Adapters are color coded by membrane type for easy product identification
- Angled hose connector simplifies vacuum line attachment
- Receiver bottles feature easy grip sides for improved handling
- Individually packaged, sterile, certified nonpyrogenic
- Caps for receiver bottles are sterile and individually packaged
- Extra plastic storage bottles are available, see page 109

### Vacuum Filter Systems Ordering Information

| Cat. No. | Membrane | Funnel/Bottle Volume (mL) | Pore Size (µm) | Color-Coded Adapter | Qty/Cs |
|---|---|---|---|---|---|
| *150 mL Capacity, 50 mm Diameter Membrane* | | | | | |
| 431153 | PES | 150/150 | 0.22 | Yellow | 12 |
| 431154 | CA | 150/150 | 0.22 | Orange | 12 |
| 431155 | CA | 150/150 | 0.45 | Orange | 12 |
| *250 mL Capacity, 50 mm Diameter Membrane* | | | | | |
| 430756 | CN | 250/250 | 0.22 | Blue | 12 |
| 430767 | CA | 250/250 | 0.22 | Orange | 12 |
| 430768 | CA | 250/250 | 0.45 | Orange | 12 |
| 430771 | NY | 250/250 | 0.2 | Red | 12 |
| 431096 | PES | 250/250 | 0.22 | Yellow | 12 |
| *500 mL Capacity, 70 mm Diameter Membrane* | | | | | |
| 430758 | CN | 500/500 | 0.22 | Blue | 12 |
| 430769 | CA | 500/500 | 0.22 | Orange | 12 |
| 430770 | CA | 500/500 | 0.45 | Orange | 12 |
| 430773 | NY | 500/500 | 0.2 | Red | 12 |
| 431097 | PES | 500/500 | 0.22 | Yellow | 12 |
| *1,000 mL Capacity, 90 mm Diameter Membrane* | | | | | |
| 430186 | CN | 1,000/1,000 | 0.22 | Blue | 12 |
| 430515 | NY | 1,000/1,000 | 0.2 | Red | 12 |
| 430516 | CA | 1,000/1,000 | 0.45 | Orange | 12 |
| 430517 | CA | 1,000/1,000 | 0.22 | Orange | 12 |
| 431098 | PES | 1,000/1,000 | 0.22 | Yellow | 12 |
| 431205* | CA | 500*/1,000 | 0.22 | Orange | 12 |
| 431206* | CA | 500*/1,000 | 0.45 | Orange | 12 |

*500 mL Funnel with 70 mm membrane.
PES = Polyethersulfone, CA = Cellulose Acetate, CN = Cellulose Nitrate, NY = Nylon.


Bottle Top Vacuum Filters

## Bottle Top Vacuum Filters

- Individually packaged, sterile and certified nonpyrogenic
- Adaptors are color coded by membrane type
- Available in 33 mm and 45 mm neck sizes to fit most glass and plastic media storage bottles
- 45 mm neck sizes fit on Corning® plastic storage bottles, see page 109

### Bottle Top Vacuum Filters Ordering Information

| Cat. No. | Membrane | Volume (mL) | Neck Size (mm) | Pore Size (µm) | Color-Coded Adapter | Qty/Cs |
|---|---|---|---|---|---|---|
| *150 mL Capacity, 50 mm Diameter Membrane* | | | | | | |
| 430624 | CA | 150 | 33 | 0.22 | Orange | 48 |
| 430625 | CA | 150 | 33 | 0.45 | Orange | 48 |
| 430626 | CA | 150 | 45 | 0.22 | Orange | 48 |
| 430627 | CA | 150 | 45 | 0.45 | Orange | 48 |
| 431160 | PES | 150 | 33 | 0.22 | Yellow | 48 |
| 431161 | PES | 150 | 45 | 0.22 | Yellow | 48 |
| *500 mL Capacity, 70 mm Diameter Membrane* | | | | | | |
| 430049 | NY | 500 | 45 | 0.2 | Red | 12 |
| 430512 | CA | 500 | 33 | 0.45 | Orange | 12 |
| 430513 | CA | 500 | 45 | 0.22 | Orange | 12 |
| 430514 | CA | 500 | 45 | 0.45 | Orange | 12 |
| 430521 | CA | 500 | 33 | 0.22 | Orange | 12 |
| 431117 | PES | 500 | 33 | 0.22 | Yellow | 12 |
| 431118 | PES | 500 | 45 | 0.22 | Yellow | 12 |
| *1,000 mL Capacity, 90 mm Diameter Membrane* | | | | | | |
| 430015 | CA | 1,000 | 45 | 0.22 | Orange | 12 |
| 431174 | PES | 1,000 | 45 | 0.22 | Yellow | 12 |

PES = Polyethersulfone, CA = Cellulose Acetate, CN = Cellulose Nitrate, NY = Nylon.

# Syringe Filters

Syringe Filters

- A variety of membranes are available to meet your needs: Polyethersulfone (PES) – low protein binding and faster flow rates; surfactant-free cellulose acetate (SFCA) – lowest protein binding; Teflon (PTFE) – chemical resistance; regenerated cellulose (RC) – best choice for DMSO compatibility; Nylon (NY) - hydrophilic, surfactant-free and lowest extractable.
- 100% integrity tested, certified nonpyrogenic and noncytotoxic, manufactured in accordance with ISO 9002 standards

### Syringe Filters Ordering Information

| Cat. No. | Diameter (mm) | Pore Size (µm) | Membrane Material | Housing Material | Sterile | Inlet/ Outlet | Packaging | Qty/ Cs |
|---|---|---|---|---|---|---|---|---|
| 431212 | 4 | 0.2 | RC | PP | Yes | LL/LS | Ind | 50 |
| 431215 | 15 | 0.2 | RC | PP | Yes | LL/LS | Ind | 50 |
| 431218 | 26 | 0.2 | SFCA-PF | AC | Yes | LL/LS | Ind | 50 |
| 431219 | 26 | 0.2 | SFCA | AC | Yes | LL/LS | Ind | 50 |
| 431220 | 26 | 0.45 | SFCA | AC | Yes | LL/LS | Ind | 50 |
| 431221 | 26 | 0.8 | SFCA | AC | Yes | LL/LS | Ind | 50 |
| 431222 | 25 | 0.2 | RC | PP | Yes | LL/LS | Ind | 50 |
| 431224 | 25 | 0.2 | NY | PP | Yes | LL/LS | Ind | 50 |
| 431225 | 25 | 0.45 | NY | PP | Yes | LL/LS | Ind | 50 |
| 431227* | 50 | 0.2 | PTFE | PP | Yes | HB/HB | Ind | 12 |
| 431229 | 26 | 0.2 | PES | AC | Yes | LL/LS | Ind | 50 |
| 431231 | 25 | 0.45 | PTFE | PP | No | LL/LS | Bulk | 50 |

PP = Polypropylene, AC = Acrylic Copolymer, LL = Luer Lock/Female, LS = Luer Slip/Male, HB = Hose Barb, NY = Nylon, PES = Polyethersulfone, PTFE = Teflon, RC = Regenerated Cellulose, SFCA = Surfactant Free Cellulose Acetate, SFCA-PF = Surfactant Free Cellulose Acetate with Prefilter.
*Recommended as in-line air filter.



# Spin-X® Centrifuge Tube Filters


Spin-X Centrifuge Tube Filters

- Costar® Spin-X centrifuge tube filters consist of a membrane-containing filter unit within a microcentrifuge tube.
- Uses:
  - Removing bacteria, cells and particles from liquids
  - HPLC sample preparation
  - DNA removal from agarose or acrylamide gels. Maximum RCF (Relative Centrifugal Force [x g]) is 16,000

### Spin-X Centrifuge Tube Filters Ordering Information

| Cat. No. | Membrane Material | Working Volume (µL) | Pore Size (µm) | Sterile | Tube Size (mL) | Qty/Cs |
|---|---|---|---|---|---|---|
| 8160 | CA | 500 | 0.22 | Yes | 2.0 | 96 |
| 8161 | CA | 500 | 0.22 | No | 2.0 | 100 |
| 8162 | CA | 500 | 0.45 | Yes | 2.0 | 96 |
| 8163 | CA | 500 | 0.45 | No | 2.0 | 100 |
| 8169 | NY | 500 | 0.22 | No | 2.0 | 200 |
| 8170 | NY | 500 | 0.45 | No | 2.0 | 200 |

CA = Cellulose Acetate, NY = Nylon.

# Storage Bottles – Polystyrene

- Disposable polystyrene bottles for storage of media, buffers and other aqueous solutions
- Two styles:
  - Low profile, easy grip style has sides that facilitate handling
  - Traditional style has smooth sides
- Plug seal caps (45 mm) provide an airtight seal and help minimize the risk of contamination.
- Bottles can be used with Corning® Vacuum Filter Systems, see page 105
- Sterile, certified nonpyrogenic

**Corning Easy Grip Style Storage Bottles Ordering Information**

| Cat. No. | Volume (mL) | Neck Size (mm) | Qty/Pk | Qty/Cs |
|---|---|---|---|---|
| 431175 | 150 | 45 | 2 | 24 |
| 430281 | 250 | 45 | 2 | 24 |
| 430282 | 500 | 45 | 2 | 24 |
| 430518 | 1,000 | 45 | 2 | 24 |

**Costar® Traditional Style Storage Bottles Ordering Information**

| Cat. No. | Volume (mL) | Neck Size (mm) | Qty/Pk | Qty/Cs |
|---|---|---|---|---|
| 8388 | 125 | 45 | 1 | 24 |
| 8390 | 250 | 45 | 1 | 12 |
| 8393 | 500 | 45 | 1 | 12 |
| 8396 | 1,000 | 45 | 1 | 12 |

# Storage Bottles – Square, Polycarbonate

Corning square polycarbonate storage bottles are easier to handle, require less space (13-20%) on the shelf or in the autoclave and are ideal for mixing, sampling and storage.

- Strong polycarbonate bottles are more break-resistant than other glass or plastic bottles.
- Screened white enamel graduations are easier to see than molded graduations.
- Sterilized by gamma radiation
- Large white marking spot for easier identification
- Bottles can be autoclaved once at 121°C and 15 psi. Repeated autoclaving weakens polycarbonate and is not recommended.
- Optional reusable caps with silicone septa (Corning Cat. Nos. 1395-45HTSC, 1395-45SS, 1395-45TS) for syringe sampling or introduction of reagents are available for these caps.
- Store up to -80°C

**Corning Square Polycarbonate Storage Bottles Ordering Information**

| Cat. No. | Capacity (mL) | Shape | Bottle Material | Neck Dia. (mm) | Qty/ Bag | Qty/ Cs |
|---|---|---|---|---|---|---|
| 431430 | 150 | Square | Polycarbonate | 45 | 1 | 24 |
| 431431 | 250 | Square | Polycarbonate | 45 | 1 | 24 |
| 431432 | 500 | Square | Polycarbonate | 45 | 1 | 24 |
| 431433 | 1000 | Square | Polycarbonate | 45 | 1 | 24 |

# Containers

- Flexible polypropylene bottom with snap-on polyethylene lid serves as a beaker or storage container
- Graduated in both milliliters and ounces
- Certified nonpyrogenic

### Containers Ordering Information

| Cat. No. | Description | Sterile | Capacity (mL) | Qty/Pk | Qty/Cs |
|---|---|---|---|---|---|
| 430179 | Container and Lid | Yes | 250 | 1 | 100 |
| 430180 | Container Only | Yes | 250 | 20 | 500 |
| 430181 | Lid Only | Yes | n/a | 20 | 500 |

## DISPOSABLE SAMPLE CONTAINERS

### 1700 Corning® Coliform Water Test Sample Container, Sterile* with Sodium Thiosulfate Tablet

Sterile container used in testing for the presence of coliform, a microbiological contaminant in drinking water. Manufactured from pure polypropylene in a sterile environment. The one-piece container has attached lid to reduce chance of contamination. Locking arrow assures sterility has not been compromised. The EPA fill line of 100 mL ±2.5% makes it easy to use. A sodium thiosulfate tablet has been added to each container thus saving lab prep time and expense. Leak tight when sealed properly. An added benefit is the tie-down to protect from accidental opening and also serves as a custody seal. Sample label and instructions for use are supplied with each. A low cost, convenient product which meets EPA requirements.

| Cat. No. | Description | Capacity (mL) | Approx. Diam. x Height (mm) | Qty/Cs |
|---|---|---|---|---|
| 1700-100 | Container w/tablet | 100-120 | 65 x 120 | 100 |

*Sterile-by-process.

### 1705 Corning Water Test Sample Container, Sterile* without Sodium Thiosulfate Tablet

Sterile container used in the testing of non-chlorinated drinking water. Manufactured from pure, recyclable polypropylene. The one-piece container has attached lid to reduce chance of contamination. Locking arrow assures sterility has not been compromised. Leak tight when sealed properly. An added benefit is the tie-down which protects against accidental opening.

| Cat. No. | Description | Capacity (mL) | Approx. Diam. x Height (mm) | Qty/Cs |
|---|---|---|---|---|
| 1705-100 | Container w/o Tablet | 100-120 | 65 x 120 | 100 |

*Sterile-by-process.

### 1730 Corning Snap-Seal Plastic Sample Containers

Designed for a wide variety of applications, these containers provide a reliable leak-tight seal when closed properly. The Snap-Seal locking device keeps the cap closed and secure. The specially designed hinged cap stays in place in use, reducing the chance of sample contamination. The containers are made of recyclable polypropylene, in a translucent style for normal usage. The containers are graduated in both milliliters and ounces, and the cap has a rough surface for marking.

| Cat. No. | Capacity | Color | Approx. Diam. x Height (mm) | Qty/Cs |
|---|---|---|---|---|
| 1730-5X | 0.45 oz. (13 mL) | Natural | 16 x 94 | 500 |
| 1730-2C | 1.5 oz. (45mL) | Natural | 30 x 84 | 400 |
| 1730-4H | 4 oz. (120 mL) | Natural | 45 x 91 | 200 |
| 1730-4L | 4 oz. (120 mL) | Natural | 68 x 52 | 200 |
| 1730-8 | 8 oz. (240 mL) | Natural | 80 x 75 | 100 |
| 1730-10 | 10 oz. (300 mL) | Natural | 63 x 112 | 100 |

# Cylinder

- Optically clear polystyrene
- Sterile
- Graduated for accurate dispensing
- A polyethylene dust cover is included

### Cylinder Ordering Information

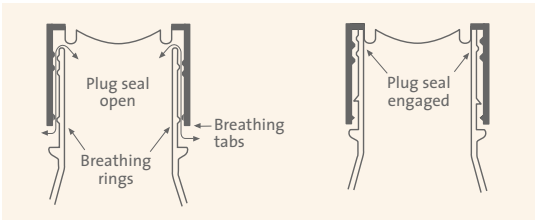
| Cat. No. | Capacity (mL) | Graduation (mL) | Sterile | Qty/Pk | Qty/Cs |
|---|---|---|---|---|---|
| 430182 | 100 | 1 | Yes | 1 | 50 |

# Erlenmeyer Flasks

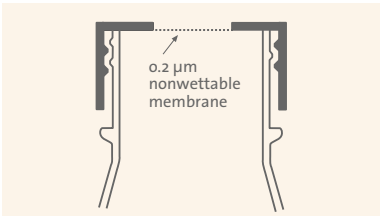
1L Erlenmeyer Flask

### Polycarbonate Erlenmeyer Flasks

- Made from optically clear polycarbonate
- Ideal for shaker culture applications
- Two-position polypropylene plug seal caps can be open for gas exchange or closed for liquid-tight seal
- Vent cap option for continuous gas exchange while ensuring sterility and preventing leakage
- Sterilized by gamma radiation
- Certified nonpyrogenic




Breathable two-position plug seal caps feature one-piece linerless construction with a flexible plug for a gas- and liquid-tight seal. In addition, the unique breathable cap design allows use in either an open or closed mode.




Vent caps contain a 0.2 µm nonwettable membrane sealed to the cap, providing consistent, sterile gas exchange while minimizing the risk of contamination.

***Shaker Flask Application Tip***

Corning recommends starting with a shaking rate of 75-125 RPM (orbital shaker) and a medium volume of 30-40% of the nominal flask capacity.

### Polycarbonate Erlenmeyer Flasks Ordering Information

| Cat. No. | Capacity (mL) | Graduation (mL) | Neck Diameter (mm) | Cap Style | Qty/Pk | Qty/Cs |
|---|---|---|---|---|---|---|
| 430421 | 125 | 25 | 26 | Plug Seal | 1 | 50 |
| 431143 | 125 | 25 | 26 | Vent Cap | 1 | 50 |
| 430183 | 250 | 25 | 31 | Plug Seal | 1 | 50 |
| 431144 | 250 | 25 | 31 | Vent Cap | 1 | 50 |
| 430422 | 500 | 50 | 43 | Plug Seal | 1 | 25 |
| 431145 | 500 | 50 | 43 | Vent Cap | 1 | 25 |
| 431146 | 1,000 | 50 | 43 | Plug Seal | 1 | 25 |
| 431147 | 1,000 | 50 | 43 | Vent Cap | 1 | 25 |

**431255** 2L Erlenmeyer Flask

**431252** 3L Fernbach Culture Flask

## Polycarbonate 2L and 3L Flasks

- Made from optically clear polycarbonate
- Ideal for shaker and suspension culture applications
- Available with or without baffled bottoms
- Features a hydrophobic membrane in cap for applications requiring sterile gas exchange
- Sterilized by gamma radiation
- Certified nonpyrogenic
- Solid and vent caps available separately

### Polycarbonate 2L and 3L Flasks Ordering Information

| Cat. No. | Description | Sterile | Qty/Cs |
|---|---|---|---|
| 431255 | Erlenmeyer Flask, 2L, Polycarbonate | Yes | 6 |
| 431256 | Erlenmeyer Flask, 2L, Polycarbonate, Baffled Bottom | Yes | 6 |
| 431252 | Fernbach Culture Flask, 3L, Polycarbonate | Yes | 4 |
| 431253 | Fernbach Culture Flask, 3L, Polycarbonate, Baffled Bottom | Yes | 4 |
| 431339 | Cap, Vented, 48 mm for 2L Flask | Yes | 24 |
| 431340 | Cap, Vented, 70 mm for 3L Flask | Yes | 24 |
| 431364 | Cap, Solid, 48 mm for 2L | Yes | 24 |
| 431363 | Cap, Solid, 70 mm for 3L | Yes | 24 |

# Spatulas



Spatulas

Microspatulas

- Corning® spatulas are designed to save time and to provide contamination-free samples
- Individually packaged, certified RNase-/DNase-free, nonpyrogenic, antistatic and sterile
- Eliminates the recycling and resterilizing necessary with reusable spatulas
- Available in five different configurations
- Microspatulas are available in two configurations

### Spatulas Ordering Information

| Cat. No. | Description | Qty/Cs |
|---|---|---|
| 3003 | Spatula, Tapered Blade/Spoon | 100 |
| 3004 | Spatula, Small Spoon/Spoon | 100 |
| 3005 | Spatula, Round End/Spoon | 100 |
| 3006 | Spatula, V-Scoop/Spoon | 100 |
| 3007 | Spatula, Flat End/Spoon | 100 |
| 3012 | Microspatula, Tapered End/Scoop | 50 |
| 3013 | Microspatula, Rounded End/Scoop | 50 |

# Centrifuge Tubes

## 15 mL Centrifuge Tubes


15 mL Centrifuge Tube with CentriStar Cap

- Corning® 15 mL centrifuge tubes feature black printed graduations and a large white marking spot
- Available with your choice of cap styles; the advanced CentriStar™ cap or the original plug seal cap
- Available in racks or bulk packed in ziplock, resealable sleeves
- Sterile, certified nonpyrogenic, and RNase-/DNase-free
- 95 k PA (14 psi) pressure tested – plug seal cap only
- Foam racks also available separately

### 15 mL Centrifuge Tubes Ordering Information

| Cat. No. | Material | Cap Style | Max. RCF | Qty/Pk | Qty/Cs |
|---|---|---|---|---|---|
| 430053 | PET | Plug Seal Cap | 3,600 | 25/Sleeve | 500 |
| 430055 | PET | Plug Seal Cap | 3,600 | 50/Rack | 500 |
| 430052 | PP | Plug Seal Cap | 12,000 | 50/Rack | 500 |
| 430766 | PP | Plug Seal Cap | 12,000 | 25/Sleeve | 500 |
| 430790 | PP | CentriStar Cap | 12,000 | 50/Rack | 500 |
| 430791 | PP | CentriStar Cap | 12,000 | 25/Sleeve | 500 |
| 431355 | Foam Centrifuge Tube Rack, 15 mL | | | | 20 |

PP = Polypropylene, PET = Polyethylene Terephthalate, RCF = Relative Centrifugal Force (x g).

## 50 mL Centrifuge Tubes


50 mL Centrifuge Tube with CentriStar Cap

- Corning 50 mL centrifuge tubes feature black printed graduations and a large white marking spot
- Available with your choice of cap styles: the advanced CentriStar cap or the original plug seal cap
- Available in racks or bulk packed in ziplock, resealable sleeves
- Sterile, certified nonpyrogenic, and RNase-/DNase-free
- 95 k PA (14 psi) pressure tested
- Foam racks also available separately

### 50 mL Centrifuge Tubes Ordering Information

| Cat. No. | Material | Cap Style | Max. RCF | Qty/Pk | Qty/Cs |
|---|---|---|---|---|---|
| 430290 | PP | Plug Seal Cap | 15,500 | 25/Rack | 500 |
| 430291 | PP | Plug Seal Cap | 15,500 | 25/Sleeve | 500 |
| 430304 | PET | Plug Seal Cap | 3,600 | 25/Rack | 500 |
| 430828 | PP | CentriStar Cap | 15,500 | 25/Rack | 500 |
| 430829 | PP | CentriStar Cap | 15,500 | 25/Sleeve | 500 |
| 4558 | PP | CentriStar Cap | 15,500 | 25/Universal Rack* | 300 |
| 4365 | Foam Centrifuge Tube Rack, 50 mL | | | – | 20 |
| 4366 | Universal Foam Centrifuge Tube Rack, 15 mL and 50 mL | | | – | 20 |

PP = Polypropylene, PET = Polyethylene Terephthalate, RCF = Relative Centrifugal Force (x g).
*New innovative universal rack can hold 50 mL and 15 mL tubes securely, allowing researchers to work with and store both size tubes in the same rack, saving bench and storage space.


Bulk Pack – Ziplock Bag


Universal Rack


Foam Centrifuge Tube Racks

Self Standing 50 mL Centrifuge Tube with Flat Cap

## Self-Standing 50 mL Centrifuge Tubes

- Corning® 50 mL centrifuge tubes feature black printed graduations and a large white marking spot
- Available with your choice of flat or the original plug seal cap
- Tubes are bulk packed in ziplock, resealable sleeves
- 95 k PA (14 psi) pressure tested – plug seal cap only
- Sterile, certified nonpyrogenic, and RNase-/DNase-free

### Self-Standing 50 mL Centrifuge Tubes Ordering Information

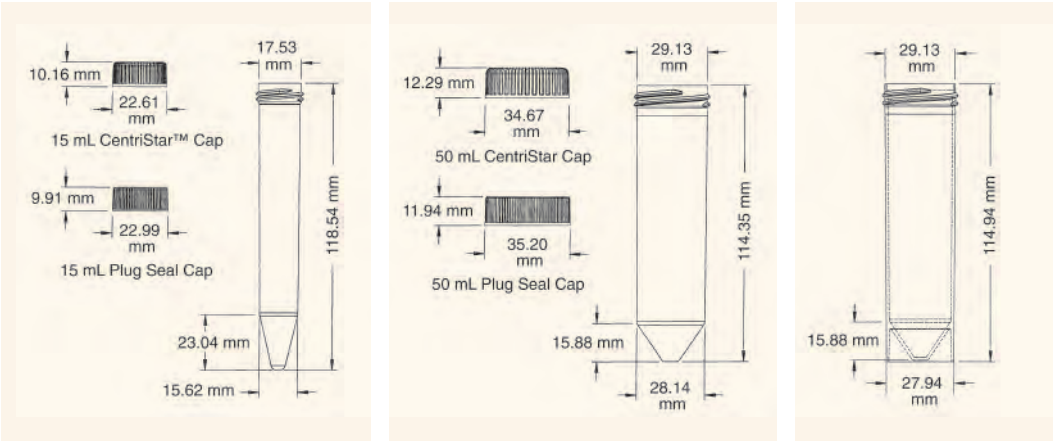
| Cat. No. | Material | Cap Style | Max. RCF | Qty/Sleeve | Qty/Cs |
|---|---|---|---|---|---|
| 430897 | PP | Plug Seal Cap | 3,000 | 25 | 500 |
| 430921 | PP | Flat Cap | 3,000 | 25 | 500 |

PP = Polypropylene, RCF = Relative Centrifugal Force (x g).

## CentriStar™ Cap

Corning 15 mL and 50 mL centrifuge tubes are now available with the advanced CentriStar cap. The CentriStar cap has an easy-on/easy-off flat top and offers advanced ergonomics with its wider knurls and roll-over edge design for easier gripping. This design includes a revolutionary plug feature that minimizes the risk of seepage when used under recommended conditions.

### Dimensions of Corning 15 mL and 50 mL Centrifuge Tube




500 and 250 mL Centrifuge Tubes

## 250 mL and 500 mL Centrifuge Tubes and Support Cushions

- Corning 250 mL and 500 mL polypropylene tubes are ideal for applications requiring large-volume centrifugation
- Each case of tubes contains a rack to facilitate handling
- Support cushions must be used with this product unless the rotor has appropriately shaped V-bottom holders
- Tubes are sterile and certified nonpyrogenic

### 250 mL and 500 mL Centrifuge Tubes Ordering Information

| Cat. No. | Description | Material | Cap Style | Max RCF | Qty/Pk | Qty/Cs |
|---|---|---|---|---|---|---|
| 430776 | 250 mL Tube | PP | Plug | 6000 | 6 | 102 |
| 430236 | 250 mL Support Cushion | PEI | n/a | n/a | n/a | 6 |
| 431123 | 500 mL Tube | PP | Plug | 6000 | 6 | 36 |
| 431124 | 500 mL Support Cushion | PEI | n/a | n/a | n/a | 6 |

PP = Polypropylene, PEI = Polyetherimide, RCF = Relative Centrifugal Force (x g).

# Microcentrifuge Tubes

Micrcoentrifuge Tubes

Corning offers two styles of microcentrifuge tubes: traditional snap cap tubes for quick access or screw cap tubes for greater sealing security.

## Snap Cap Polypropylene Microcentrifuge Tubes

- Costar® microcentrifuge tubes are certified RNase-/DNase-free
- Supplied nonsterile and are autoclavable
- External graduations and frosted writing spot for easy sample identification
- Positive seal design allows for repeated opening and closing
- Flat cap surface for convenient labeling
- Withstands a maximum RCF of 17,000 x g
- Costar low binding microcentrifuge tubes feature a bonded polymer technology that reduces protein and nucleic acid binding, resulting in better sample recovery

### Snap Cap Polypropylene Microcentrifuge Tubes Ordering Information

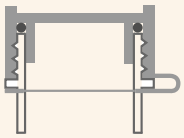
| Cat. No. | Volume (mL) | Color | Qty/Pk | Qty/Cs |
|---|---|---|---|---|
| *Snap Cap Microcentrifuge Tubes* | | | | |
| 3208 | 0.65 | Natural | 500 | 1,000 |
| 3209* | 0.65 | Rainbow* | 200 | 1,000 |
| 3620 | 1.7 | Natural | 500 | 500 |
| 3621 | 1.7 | Natural | 500 | 5,000 |
| 3622* | 1.7 | Rainbow* | 100 | 500 |
| 3213 | 2.0 | Natural | 500 | 1,000 |
| *Low Binding Snap Cap Microcentrifuge Tubes Ordering Information* | | | | |
| 3206 | 0.65 | Natural | 500 | 500 |
| 3207 | 1.7 | Natural | 250 | 250 |

*Rainbow pack includes one bag each of blue, green, yellow, red, and orange tubes.

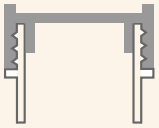
Microcentrifuge Tubes

## Screw Cap Polypropylene Microcentrifuge Tubes

- Corning® polypropylene microcentrifuge tubes feature screw caps that provide a tight secure seal
- Choice of attached cap with silicone O-ring or unattached rim seal cap
- All tubes have a large white marking spot.
- Withstands a maximum RCF of 13,000 x g
- Sterile



- Attached loop cap allows for optimum one-handed convenience. Silicone O-ring gasket provides a snug seal, safeguarding samples against leakage.



- Easy-to-use unattached rim seal cap design twists on or off in a single turn.

### Screw Cap Polypropylene Microcentrifuge Tubes Ordering Information

| Cat. No. | Volume (mL) | Cap Style | O-ring | Self Standing | Qty/Cs |
|---|---|---|---|---|---|
| 430909 | 1.5 | Attached | Yes | No | 500 |
| 430915 | 2.0 | Attached | Yes | Yes | 500 |
| 430917 | 2.0 | Unattached | No | Yes | 500 |

# Cryogenic Vials and Accessories

Corning offers three styles of cryogenic vials as well as storage racks and boxes.

**External Thread Cryogenic Vial**

- Color-coded polypropylene cap inserts simplify vial identification. Available in variety packs of white, blue, green, red, and yellow.
- Silicone washer provides a secure seal.
- Easy-to-read black graduations for partial volumes
- Self-standing base, self-locking skirt

**Internal Thread Cryogenic Vial**

- Color-coded polypropylene cap inserts simplify vial identification. Available in variety packs of white, blue, green, red, and yellow.
- Silicone washers or rubber O-rings provide a secure seal.
- Easy-to-read black graduations for partial volumes
- Self-standing base, self-locking skirt


**External Thread Plug Seal Cap**

- Sure-grip plug seal screw cap
- Inner cap ring assures a tight seal.

## External Thread Cryogenic Vials

External Thread Cryogenic Vials

- Manufactured from polypropylene to withstand temperatures down to -196°C
- Larger marking spot
- Black graduations
- Certified RNase-/DNase-free
- Vials have a silicone washer for a secure seal.
- Vials may be color coded with inserts, see page 118
- Self-standing vials have a special base design allowing them to be locked into cryogenic rack and tray (Cat. No. 430525 or 431131) for single-handed manipulation
- Sterilized by gamma radiation
- Certified nonpyrogenic
- Free foam rack with each case

### External Thread Cryogenic Vials Ordering Information

| Cat. No. | Capacity (mL) | Style | Self-Standing | Qty/Pk | Qty/Cs |
|---|---|---|---|---|---|
| 430658 | 1.2 | Conical Bottom | Yes | 50 | 500 |
| 430659 | 2.0 | Round Bottom | Yes | 50 | 500 |
| 430661 | 2.0 | Round Bottom | No | 50 | 500 |
| 430662 | 4.0 | Round Bottom | Yes | 50 | 500 |
| 430663 | 5.0 | Round Bottom | Yes | 50 | 500 |

**Warning!** Do not use cryogenic vials for storage in the liquid phase of liquid nitrogen. Only store vials in the vapor phase above the liquified gas. Always use appropriate safety equipment when removing vials from cryogenic storage.

### *Cryogenic Vial Safety Tip*

Appropriate safety equipment (gloves, face shields, biological safety cabinets, hoods, etc.) should always be used to protect personnel when removing vials or ampules from cryogenic storage systems.

## Internal Thread Cryogenic Vials

Internal Thread Cryogenic Vials

- Manufactured from polypropylene to withstand temperatures down to -196°C
- Larger marking spot
- Black graduations
- Certified RNase-/DNase-free
- Vials have a silicone washer or rubber O-ring for a secure seal
- Vials may be color coded with inserts, see page 118
- Self-standing vials have a special base design allowing them to be locked into cryogenic rack and tray (Cat. No. 430525 or 431131) for single-handed manipulation
- Sterilized by gamma radiation
- Certified nonpyrogenic
- Free foam rack with each case

### Internal Thread Cryogenic Vials Ordering Information

| Capacity Cat. No. | (mL) | Style | Self-Standing | Seal Type | Qty/Pk | Qty/Cs |
|---|---|---|---|---|---|---|
| 430487 | 1.2 | Conical Bottom | Yes | Washer | 50 | 500 |
| 430488 | 2.0 | Round Bottom | Yes | Washer | 50 | 500 |
| 430489 | 2.0 | Round Bottom | No | Washer | 50 | 500 |
| 430490 | 4.0 | Round Bottom | No | Washer | 50 | 500 |
| 430491 | 4.0 | Round Bottom | Yes | Washer | 50 | 500 |
| 430492 | 5.0 | Round Bottom | No | Washer | 50 | 500 |
| 430656 | 5.0 | Round Bottom | Yes | Washer | 50 | 500 |
| 431386 | 2.0 | Round Bottom | Yes | Washer | 50 | 250 |

**Warning!** Do not use cryogenic vials for storage in the liquid phase of liquid nitrogen. Only store vials in the vapor phase above the liquified gas. Always use appropriate safety equipment when removing vials from cryogenic storage.

## External Thread Cryogenic Vials with Plug Seal Cap

External Thread Cryogenic Vials with Plug Seal Cap

- Manufactured from polypropylene to withstand temperatures down to -196°C
- Vials feature an external thread with a traditional plug seal cap design for a secure seal
- Cap does not accept color-coded inserts
- Sterilized by gamma radiation
- Certified nonpyrogenic

### External Thread Cryogenic Vials with Plug Seal Cap Ordering Information

| Cat. No. | Capacity (mL) | Style | Self-Standing | Qty/Pk | Qty/Cs |
|---|---|---|---|---|---|
| 430289 | 2.0 | Round Bottom | No | 50 | 500 |

**Warning!** Do not use cryogenic vials for storage in the liquid phase of liquid nitrogen. Only store vials in the vapor phase above the liquified gas. Always use appropriate safety equipment when removing vials from cryogenic storage.

## Cap Inserts for Cryogenic Vials


Cap Inserts

- Cap inserts provide color coding for easy sample identification
- Inserts are packaged in resealable bags
- Nonsterile
- Cap inserts fit all Corning® cryogenic vials except Cat. No. 430289

### Cryogenic Vials Cap Inserts Ordering Information

| Cat. No. | Description | Qty/Pk | Qty/Cs |
|---|---|---|---|
| 430499 | Assorted colors, polypropylene cap inserts: 100 each of white, blue, red, green, and yellow | 50 | 500 |
| 2015 | White polypropylene cap inserts | 50 | 500 |
| 2016 | Blue polypropylene cap inserts | 50 | 500 |
| 2017 | Red polypropylene cap inserts | 50 | 500 |
| 2018 | Green polypropylene cap inserts | 50 | 500 |
| 2019 | Yellow polypropylene cap inserts | 50 | 500 |

## Cryogenic Vial Racks and Storage Boxes

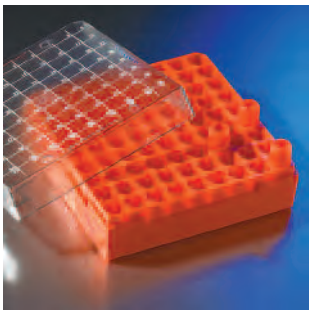

Cryogenic Vial Racks

- Reusable racks are designed for use with most cryogenic vials
- Cat. No. 430525 has a locking feature for use with all Corning self-standing vials

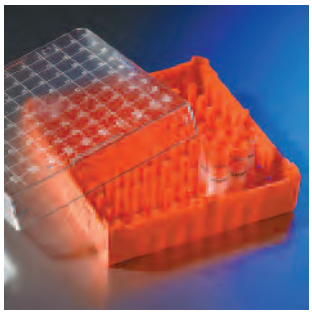
### Cryogenic Vial Racks and Storage Boxes Ordering Information

| Cat. No. | Description | Qty/Pk | Qty/Cs |
|---|---|---|---|
| 430525 | Polycarbonate rack and tray, holds 30 vials; self-locking design in ice/water bath | 1 | 1 |
| 430526 | Polycarbonate rack only, holds 30 vials; self-locking design | 1 | 1 |
| 431131 | Reusable orange polypropylene vial rack, holds 50 vials; self-locking design | 2 | 2 |
| 431119 | 81 count (9 x 9 array) Cryogenic Box, for 1-2 mL vials | 5 | 10 |
| 431120 | 81 count (9 x 9 array) Cryogenic Box, for 4-5 mL vials | 5 | 10 |
| 431121* | 100 count (10 x 10 array) Cryogenic Box, for 1-2 mL vials | 5 | 10 |

*431121 accepts internally threaded cryogenic vials only.


**431119** Cryogenic Storage Box


**431120** Cryogenic Storage Box


**431121** Cryogenic Storage Box

# Technical Appendix

## SELECTING THE BEST FILTER FOR YOUR APPLICATION

Choosing a filter does not have to be complicated - Corning has simplified the process. Just follow these four easy steps:

**Step 1: Match your application with the best pore size.**

**Step 2: Select the best membrane and housing material for your application.**

**Step 3: Select the correct membrane diameter to optimize flow rate and throughput.**

**Step 4: Choose the best filter design for your application.**

### Step 1: Match Your Application with the Best Pore Size

The pore size is usually determined by your application or objective.

- Routine laboratory sterilization of most media, buffers, biological fluids and gases is usually done with 0.2 or 0.22 µm pore filter membranes
- Clarification and prefiltration of solutions and solvents is best accomplished with 0.45 µm or larger filter membranes
- Prefiltration to improve filter performance can also be accomplished by the use of glass fiber prefilters sold separately.

Use Table 1 to match your applications with a recommended membrane and pore size.

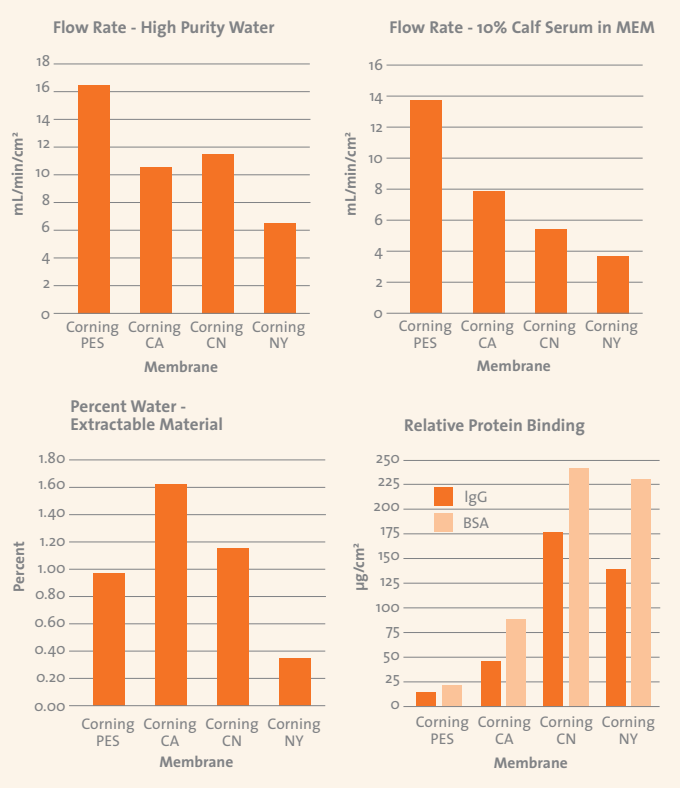
### Step 2: Select the Best Membrane and Housing Material for Your Application

Your filter unit must be fully compatible with the chemical characteristics of your sample.

- Some filter membranes contain nontoxic wetting agents that may interfere with some applications
- Other membranes may bind proteins or other macromolecules leading to premature filter clogging or loss of valuable samples

Therefore, it is very important to understand their characteristics and the potential effects filter membranes can have on the solutions they contact. The following four graphs (Figure 1) compare the flow rates, levels of extractable materials, and relative amounts of protein binding of four of the most popular membranes used in Corning® filters. Combining this with the information from Tables 2 and 3 (page 120) will help you choose the best Corning membranes for your applications.

**Figure 1. Important Performance Characteristics of Corning® Filter Membranes**




PES = Polyethersulfone, CA = Cellulose Acetate, CN = Cellulose Nitrate, NY = Nylon

### Corning Filter Membrane Materials

**Polyethersulfone** (PES) membranes are the best for filtering cell culture media. PES has very low protein binding and extractables. PES also demonstrates faster flow rates than cellulose or nylon membranes.

**Table 1. Selecting the Pore Size**

| Application | Pore Size (µm) | Membrane Availability |
|---|---|---|
| Sterilization and Ultracleaning of Aqueous Solutions | 0.20 to 0.22 | All Membranes except Teflon™ |
| Ultracleaning of Solvents (HPLC) | 0.20 to 0.22 | RC*, Teflon, Nylon |
| Clarification of Aqueous Solutions | 0.45 | All Membranes except Teflon |
| Clarification of Solvents (HPLC) | 0.45 | RC, Teflon, Nylon |
| Coarse Particle Removal | 0.8 | SFCA*, Glass Fiber Prefilters |

*RC = Regenerated Cellulose, SFCA = Surfactant-Free Cellulose Acetate.

**Cellulose acetate** (CA) membranes have a very low binding affinity for most macromolecules and are especially recommended for applications requiring low protein binding, such as filtering culture media containing sera. However, both cellulose acetate and cellulose nitrate membranes are naturally hydrophobic and have small amounts (less than 1%) of nontoxic wetting agents added during manufacture to ensure proper wetting of the membrane. If desired, these agents can be easily removed prior to use by filtering a small amount of warm purified water through the membrane or filter unit. Surfactant free cellulose acetate membranes, with very low levels of extractables, are available on some Corning® syringe filters.

**Cellulose nitrate** (CN) membranes are recommended for filtering solutions where protein binding is not a concern. They are recommended for use in general laboratory applications such as buffer filtration. Corning's cellulose nitrate membranes are Triton X-100®-free and noncytotoxic.

**Nylon** membranes are naturally hydrophilic and are recommended for applications requiring very low extractables since they do not contain any wetting agents, detergents or surfactants. Their greater chemical resistance makes them better for filtering more aggressive solutions, such as alcohols and DMSO. However, like cellulose nitrate membranes, they may bind greater amounts of proteins and other macromolecules than do the cellulose acetate or PES membranes. They are recommended for filtering protein-free culture media.

**Regenerated cellulose** (RC) membranes are hydrophilic and have very good chemical resistance to solvents, including DMSO. They are used to ultraclean and de-gas solvents and mobile phases used in HPLC applications.

**Teflon™** (PTFE; polytetrafluoroethylene) membranes are naturally and permanently hydrophobic. They are ideal for filtering gases, including humidified air. The extreme chemical resistance of Teflon membranes makes them very useful for filtering solvents or other aggressive chemicals for which other membranes are unsuitable. Because of their hydrophobicity, Teflon membranes must be prewetted with a solvent, such as ethanol, before aqueous solutions can be filtered.

**Glass fiber filters** are used as depth filters for prefiltering solutions. They have very high particle loading capacity and are ideal for prefiltering dirty solutions and difficult to filter biological fluids such as sera.



### Table 2. Characteristics of Corning Filter Membranes

| | Cellulose Nitrate | Cellulose Acetate | Nylon | Polyether-Sulfone | Regenerated Cellulose | Teflon (PTFE) |
|---|---|---|---|---|---|---|
| Flow rates for medium with 10% serum | Good | Very Good | Poor | Best | NA | NA |
| Wetting Agents | Yes | Yes | No, naturally hydrophilic | No | Yes | Does not wet |
| Protein Binding | Very high | Very low | Low to moderate | Very low | Low | NA |
| DNA Binding | High | Very low | Very high | Very low | Low | NA |
| Chemical Resistance | Low | Low | Moderate to high | Low | Very high | Very high |

### Table 3. Chemical Resistance Guide for Corning Filters

This information has been developed from a combination of laboratory tests, technical publications, or material suppliers. It is believed to be reliable. Due to conditions outside of Corning's control, such as variability in temperatures, concentrations, duration of exposure and storage conditions, no warranty is given or is to be implied with respect to this information.

| | Filter Membranes | | | | | | | Housing Materials | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Chemical Class | CN | CA | PC | NY | PES | RC | PTFE | PS | PP | AC | PYR | PVC |
| Weak Acids | 2 | 2 | 1 | 2 | 3 | 1 | 1 | 1 | 1 | 2 | 1 | 1 |
| Strong Acids | 3 | 2 | 3 | 3 | 3 | 3 | 1 | 2 | 1 | 3 | 2 | 1 |
| Alcohols | 3 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 1 | 3 | 1 | 1 |
| Aldehydes | 2 | 3 | 2 | 2 | 3 | 2 | 1 | 3 | 1 | 3 | 1 | 3 |
| Aliphatic Amines | 3 | 3 | 3 | 1 | 1 | 1 | 1 | 3 | 1 | 3 | 1 | 2 |
| Aromatic Amines | 3 | 3 | 3 | 2 | 3 | 1 | 1 | 3 | 1 | 3 | 1 | 3 |
| Bases | 3 | 3 | 3 | 2 | 3 | 2 | 1 | 1 | 1 | 2 | 2 | 1 |
| Esters | 3 | 3 | 2 | 1 | 3 | 1 | 1 | 3 | 2 | 2 | 1 | 3 |
| Hydrocarbons | 2 | 2 | 2 | 2 | 3 | 1 | 1 | 3 | 2 | 2 | 1 | 2 |
| Ketones | 3 | 3 | 2 | 2 | 3 | 1 | 1 | 3 | 2 | 3 | 1 | 3 |

Key: 1 = Recommended, 2 = May be suitable for some applications, a trial run is recommended, 3 = Not recommended, CN = Cellulose Nitrate, CA = Cellulose Acetate, NY = Nylon, PYR = PYREX Glass, PC = Polycarbonate, PES = Polyethersulfone, RC = Regenerated Cellulose, PS = Polystyrene, PTFE = Polytetrafluoroethylene (Teflon), PP = Polypropylene, PVC = Polyvinylchloride, AC = Acrylic Copolymer.

### Corning® Filter Housing Materials

The filter housing materials also must be compatible with the solutions being filtered.

**Polystyrene** (PS) is used in the filter funnels and storage bottles for all of the Corning plastic vacuum filters. This plastic polymer should only be used in filtering and storing nonaggressive aqueous solutions and biological fluids. Refer to Table 3 (page 120) for more chemical compatibility information.

**Acrylic copolymer** (AC) and **Polyvinyl chloride** (PVC) are used in some of the Corning syringe filter housings. These plastics should only be used in filtering less aggressive aqueous solutions and biological fluids. Refer to Table 3 for more chemical compatibility information.

**Polypropylene** (PP) is used in the Spin-X® centrifuge filters and some of the syringe and disc filter housings. This plastic polymer has very good resistance to many solvents. Refer to Table 3 for more chemical compatibility information.

### Chemical Compatibility

The mechanical strength, color, appearance, and dimensional stability of Corning filters are affected to varying degrees by the chemicals with which they come into contact. Specific operating conditions, especially temperature and length of exposure, will also affect their chemical resistance. Table 3 provides basic information on the chemical resistance of Corning filter membranes and housings.

## Step 3: Select the Correct Membrane Diameter to Optimize Flow Rate and Throughput

The third step is selecting a filter that will have enough volume capacity or throughput to process your entire sample quickly and efficiently. This is primarily determined by the effective surface area of the membrane. Table 4 shows the relationship between filter diameter, effective filtration surface area and expected throughput volumes. The lower values are typical of viscous or particle-laden solutions; the higher values are typical of buffers or serum-free medium.

## Step 4: Choose the Best Filter Design for Your Application

### Disposable Plastic Vacuum Filters

These sterile filters are available in four styles: complete filter/storage systems, bottle top filters, centrifuge tube top filters, or one-piece filter systems. Four membranes are available to meet all of your filtration needs: cellulose acetate, cellulose nitrate, nylon, or polyethersulfone.

**Table 4. Typical Expected Throughput Volumes**

| Filter Diameter and Description | Effective Filtration Surface ($cm^2$) | Expected Throughput (mL)* |
|---|---|---|
| 4 mm syringe/disc | 0.07 | 0.05-3 |
| 15 mm syringe/disc | 1.7 | 3-15 |
| 25 mm syringe/disc | 4.8 | 15-100 |
| 26 mm syringe/disc | 5.3 | 15-100 |
| 50 mm disc | 19.6 | 100-750 |
| 50 mm vacuum system | 16.6 | 100-750 |
| 60 mm vacuum system | 24.6 | 200-1,000 |
| 70 mm vacuum system | 38.5 | 300-1,500 |
| 90 mm vacuum system | 58.1 | 500-2,000 |

*These values assume an aqueous solution and a 0.2 µm membrane. Solutions containing sera or other proteinaceous materials will be at the lower end of the range. Use of prefilters may extend the throughput 50 to 100% above the values shown.

### Disposable Syringe/Disc Filters

The smaller conventional Corning syringe disc-type filters (4, 15, 25, and 26 mm diameter) are used with syringes which serves as both the fluid reservoir and the pressure source. The HPLC certified nonsterile syringe filters are available with nylon, regenerated cellulose or Teflon® (PTFE) membranes in polypropylene housing for extra chemical resistance. The sterile tissue culture tested syringe filters are available in PES, regenerated cellulose (ideal for use with DMSO-containing solutions) or surfactant-free cellulose acetate membranes in either polypropylene or acrylic copolymer housings.

The larger 50 mm diameter disc filter has a Teflon (PTFE) membrane and polypropylene housing with hose barb connectors. This product is ideal for filtering aggressive solvents or gases and applications requiring sterile venting of gases. Because they have a hydrophobic (will not pass aqueous solutions) membrane, they are also ideal for protecting vacuum lines and pumps.

### Spin-X® Disposable Centrifuge Tube Filters

Costar® Spin-X centrifuge tube filters consist of a membrane-containing (either cellulose acetate or nylon) filter unit within a polypropylene microcentrifuge tube. They filter small sample volumes by centrifugation for bacteria removal, particle removal, HPLC sample preparation, removal of cells from media, and purification of DNA from agarose and polyacrylamide gels. (See Corning Technical Bulletin: *Spin-X Purification of DNA from agarose gels* at **www.corning.com/lifesciences**.)

### Corning Filtr*EX*™ 96 and 384 Well Filter Plates

Information on Corning Filtr*EX* 96 and 384 well filter plates can be found in the Corning Genomics Selection Guide or on the Corning Life Sciences web site **www.corning.com/lifesciences**.

### Table 5. Corning® Filter Designs

| Design | Sterile | Filter Diameters (mm) | Available Membrane Materials | Pore Sizes (µm) | Special Features |
|---|---|---|---|---|---|
| Syringe Filters | Some | 4, 15, 25, and 26 | RC, PES, SFCA, NY, and PTFE | 0.2, 0.45, and 0.8 | Ideal for small volume pressure filtration |
| Disc Filters | Yes | 50 | PTFE | 0.2 | Ideal for filtering solvents and gases |
| Vacuum Filter Storage Systems | Yes | 50, 70 and 90 | PES, CA, CN, and Nylon | 0.2, 0.22 , and 0.45 | Easy grip bottles for storing filtrate |
| Bottle Top Vacuum Filters | Yes | 50, 70 and 90 | PES, CA, CN, and Nylon | 0.2, 0.22, and 0.45 | 2 neck widths to fit most glass bottles |
| Tube Top Vacuum Filters | Yes | 50 | CA | 0.22 and 0.45 | Minimizes unnecessary transfers by filtering into a 50mL centrifuge tube |
| 115 One Piece Vacuum Filters | Yes | 60 | CA and CN | 0.2 and 0.45 | Very economical with separate pour spout |
| Spin-X® Centrifuge Filters | Some | 7.7 | CA and Nylon | 0.22 and 0.45 | Ideal for purifying DNA from agarose gels |
| Filtr*EX*™ 96 and 384 Well Filter Plates | Some | 6.4, 3.2 | PVDF, GlassFiber, PES, NC, and UF | 0.2, 0.45, 1.2 and others | Clear, opaque, or solvent resistant* |

*Call for specific details; several custom-made products available.
CN = Cellulose Nitrate, CA = Cellulose Acetate, PES = Polyethersulfone, RC = Regenerated Cellulose, PTFE = Polytetrafluoroethylene (Teflon), SFCA = Surfactant-Free Cellulose Acetate.

## CHARACTERISTICS OF CORNING PLASTICWARE

| | | Polystyrene | Polyethylene (High Density) | Polypropylene | Polycarbonate | Nylon | P.T.F.E. (Teflon®) |
|---|---|---|---|---|---|---|---|
| **Physical Characteristics** | Basic Properties | Biologically inert, hard, excellent optical qualities | Biologically inert, high chemical resistance | Biologically inert, high chemical resistance, exceptional toughness | Clear, very tough, inert, high temperature resistance | Tough, heat resistant, machinable, high moisture vapor transmission | Biologically and chemically inert, high resistant slippery surface |
| | Clarity | Clear | Opaque | Translucent | Clear | Opaque | Opaque |
| | Autoclave Results | Melts | May distort | Withstands several cycles | Withstands one cycle | OK | OK |
| | Heat Distortion Point | 147-175°F 64-80°C | 250°F 121°C | 275°F 135°C | 280-290°F 138-143°C | 300-356°F 150-180°C | 250°F 121°C |
| | Burning Rate | Slow | Slow | Slow | Self-extinguishing | Self-extinguishing | None |
| **Effects of Laboratory Reagents** | Weak Acids | None | None | None | None | None | None |
| | Strong Acids | Oxidizing acids attack | Oxidizing acids attack | Oxidizing acids attack | May be attacked | Attacked | None |
| | Weak Alkalies | None | None | None | None | None | None |
| | Strong Alkalies | None | None | None | Slowly attacked | None | None |
| | Organic Solvents | Soluble in aromatic chlorinated hydrocarbons | Resistant below 80°C | Resistant below 80°C | Soluble in chlorinated hydrocarbons; partly soluble in aromatics | Resistant | Resistant |
| **Gas Permeability of Thin Wall Products*** | $O_2$ | Low | High | High | Very low | Very low | – |
| | $N_2$ | Very low | Low | Low | Very low | Very low | – |
| | $CO_2$ | High | Very high | Very high | Low | – | – |

Portions of this table courtesy of Modern Plastics Encyclopedia. Most data are from tests by A.S.T.M. methods. Tables show averages or ranges. Many properties vary with manufacturer, formulation, testing laboratory, and the specific operating conditions.
*Obtained from a table which lists gas permeability in CC/100 sq. inches per 24 hrs./mil.

## CHEMICAL COMPATIBILITY OF CORNING PLASTICWARE

| | PS | PP | PVC | CA | PC | CN | NY | MCE | PTFE | PET |
|---|---|---|---|---|---|---|---|---|---|---|
| *Acids* | | | | | | | | | | |
| Hydrochloric acid (25%) | G | G | G | N | R | R | N | O | R | R |
| Hydrochloric acid (concentrated) | F | G | F | N | R | N | N | N | R | O |
| Nitric acid (concentrated) | P | P | P | N | R | N | N | N | O | N |
| Nitric acid (25%) | P | G | F | N | R | L | N | O | R | R |
| *Alcohols* | | | | | | | | | | |
| Butanol | G | G | G | R | R | R | R | R | R | R |
| Ethanol | G | G | G | R | R | N | R | O | R | R |
| Methanol | G | G | G | R | R | N | R | O | R | R |
| *Amines* | | | | | | | | | | |
| Aniline | G | G | P | N | N | R | R | N | R | O |
| Dimethylformamide | P | G | F | N | N | N | R | N | R | N |
| *Bases* | | | | | | | | | | |
| Ammonium hydroxide (25%) | F | G | G | R | N | R | R | O | N | O |
| Ammonium hydroxide (1N) | F | G | G | N | N | R | R | O | N | N |
| Sodium hydroxide | G | G | G | N | N | N | R | N | R | N |
| *Hydrocarbons* | | | | | | | | | | |
| Hexane | P | G | F | R | R | R | R | R | R | R |
| Toluene | P | G | P | R | O | R | R | R | R | N |
| Xylene | P | F | P | R | R | R | R | R | R | N |
| Dioxane | P | G | P | N | N | N | R | N | R | R |
| Dimethylsulfoxide (DMSO) | P | G | P | N | N | N | R | N | R | O* |
| *Halogenated Hydrocarbons* | | | | | | | | | | |
| Chloroform | P | G | P | N | N | R | R | N | R | N |
| Methylene chloride | P | F | P | N | N | R | R | N | R | N |
| *Ketones* | | | | | | | | | | |
| Acetone | P | G | P | N | O | N | R | N | R | R |
| Methyl ethyl diketone | P | G | P | N | O | N | R | O | R | R |

*Can be used with aqueous solutions containing up to 20% DMSO.

R = Recommended, L = Limited Resistance, N = Not Recommended, O = Testing Advised, F = Fair, G = Good, P = Poor, PP = Polypropylene, PVC = Polyvinyl Chloride, CA = Cellulose Acetate, PC = Polycarbonate, PTFE = Polytetrafluoroethylene PS = Polystyrene, CN = Cellulose Nitrate, NY = Nylon, MCE = Mixed Cellulose Esters, PET = Polyethylene Terephthalate.

## CHARACTERISTICS OF CORNING® CENTRIFUGE TUBES

The following information is provided to serve as a general guideline for determining suitability of Corning centrifuge tubes for your applications. In addition, Corning recommends following the procedures outlined by the centrifuge manufacturer, as well as conducting a trial run to determine proper conditions before beginning any critical applications.

Corning centrifuge tubes are tested for leakage. They should not break or leak if used in a properly balanced rotor with suitable carriers, holders, and adapters that fully support the tubes when run in accordance with the guidelines in this section. These tubes are intended for one-time use only; reuse is not recommended as breakage or leakage may occur.

The recommended working temperature range for Corning centrifuge tubes is 0 to 40°C. The suitability of these tubes for storage below 0°C depends on both the solution and the storage conditions. In general, the polypropylene and PET tubes are more resistant to stress at low temperatures than polystyrene. It is strongly recommended that a trial run be performed under actual conditions to test the suitability of the tubes for frozen storage.

### Suggestions for Safe Centrifugation

- ***Caution***: When centrifuging pathogenic organisms, clinical specimens known or suspected of being infectious, or any other potentially biohazardous materials, approved safety containment systems should be used. Contact your centrifuge manufacturer for appropriate accessories or recommendations.
- Read protocols and instruction manuals carefully. Do not confuse speed or revolutions per minute (RPM) with relative centrifugal force (RCF). Instructions for centrifuging a sample at a given RPM and time are incomplete unless the rotor or radius is specified. Protocols should always state the time and RCF value for centrifuging a sample.

- Proper balancing and distribution of the load in a centrifuge is critical for optimum performance and to prevent damage to the tubes or centrifuge. Opposing buckets or loads should always be balanced within the range specified by the manufacturer. Tubes should always be distributed in the buckets with respect to the center of rotation as well as the pivotal axis of the bucket. Failure to do this may prevent the bucket from achieving a horizontal position during the centrifugation run. Uneven separations or tube failure may result.

These centrifuge tubes are intended for use by persons knowledgeable in safe laboratory practices. Failure can result from surface damage, exceeding the specified RCF values, using unsuitable support systems, improper temperatures, or incompatible chemicals.

The RCF ratings for Corning® disposable centrifuge tubes have been established at room temperature using tubes filled to nominal capacity with water and spun in a horizontal rotor centrifuge for 5 minutes. The centrifuge must be equipped with the recommended carriers, adapters, and cushions that fully support the tubes. If an angle head rotor is used or proper support is not provided, RCF values will be lower. Use of liquid other than water may also lower RCF values. Please consult your centrifuge specifications and the nomogram table (page 125) to determine speeds at which maximum RCF is achieved.

## Chemical Compatibility of Disposable Plastic Centrifuge Tubes

The mechanical strength, flexibility, color, weight and dimensional stability of all plastic centrifuge tubes are affected to varying degrees by the chemicals with which they come in contact. Specific operating conditions, especially temperature, RCF, rotor type, carrier design, and run length will also affect tube performance.

### Physical Properties of Disposable Plastic Centrifuge Tubes

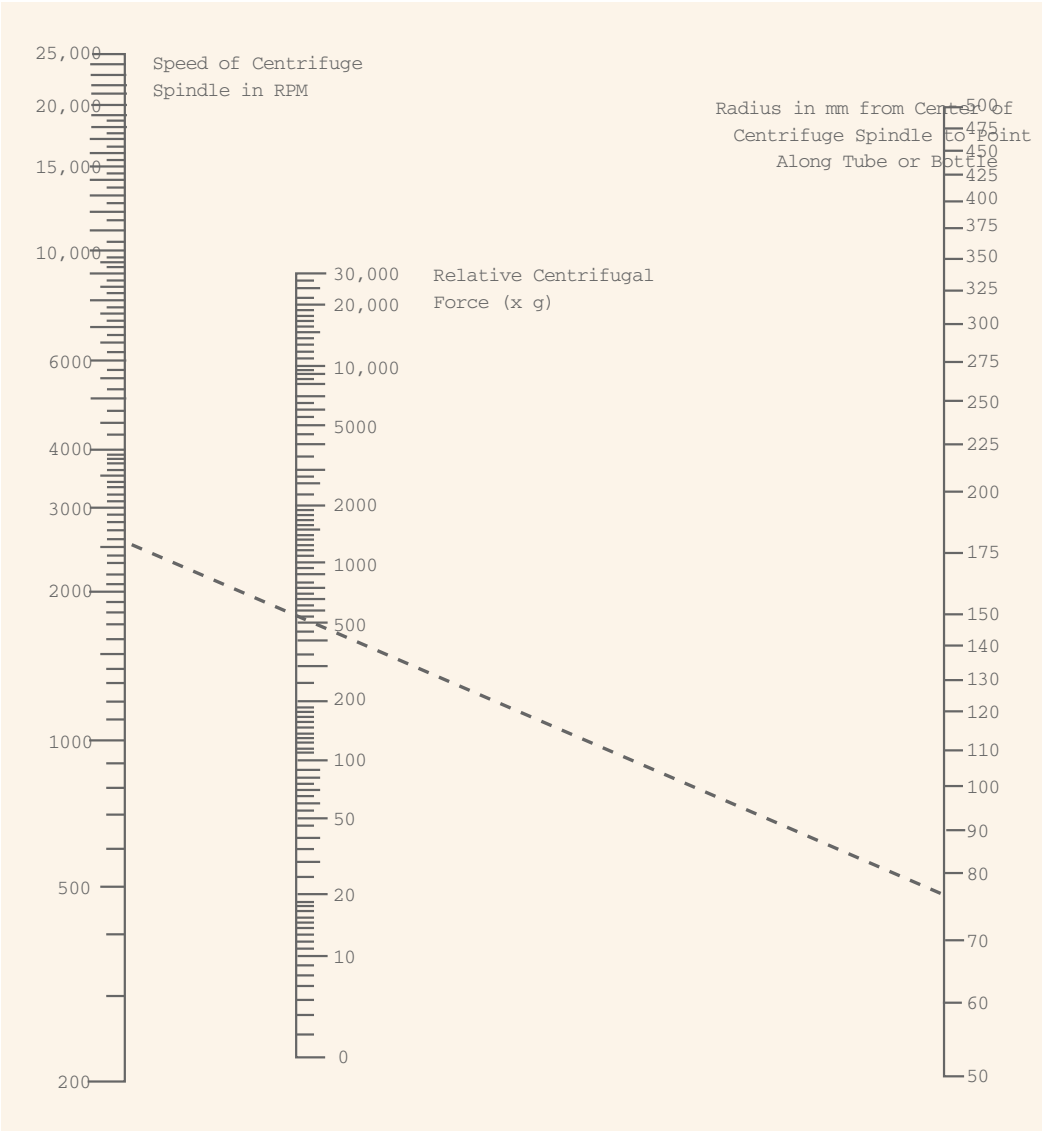
| | Clear Polypropylene | New Polyethylene Terephthalate |
|---|---|---|
| Recommended Working Temp* | 0-40° | 0-40° |
| Heat Distortion Point | 121° | 70° |
| Flexibility | Moderate | Rigid |
| Transparency | Clear | Clear |
| Maximum RCF: | | |
| 15 mL Tube | 8,400 x g | 3,600 x g |
| 50 mL Tube | 9,400 x g | 3,600 x g |
| 250 mL Tube | – | – |
| 500 mL Tube | – | – |

### Chemical Resistance of Disposable Plastic Centrifuge Tubes*

| Chemical Class | Polyethylene Terephthalate | Polypropylene | Polyethylene Caps |
|---|---|---|---|
| Acids (weak) | 1 | 1 | 1 |
| Acids | 3 | 1 | 1 |
| Alcohols | 1 | 1 | 1 |
| Aldehydes | 3[a] | 2[a] | 1 |
| Bases | 3 | 1 | 1 |
| Esters | 2 | 2 | 2 |
| Hydrocarbons: | | | |
| Aliphatic | 1 | 2 | 3 |
| Aromatic | 3 | 3[b] | 3 |
| Halogenated | 3 | 3 | 3 |
| Ketones | 2 | 2[c] | 2 |

*At room temperature for 24 hours.
1 = Recommended; 2 = Suitable for most applications. However, a trial run under specific operating conditions is recommended; 3 = Not recommended.
Note: a = Formaldehyde, rated 1; b = Phenol, rated 1; c = Acetone, rated 1.

## Nomogram for Computing Relative Centrifugal Force




To calculate the RCF value at any point along the tube or bottle, measure the radius, in mm, from the center of the centrifuge spindle to the particular point. Draw a line from the radius value on the right hand column to the appropriate centrifuge speed on the left-hand column. The RCF value is the point where the line crosses the center column. The nomogram is based on the formula:

$RCF = (11.17 \times 10^{-7}) RN^2$

*where:*

R = Radius in mm from centrifuge spindle to point in tube bottom

N = Speed of spindle in RPM

# Disposable Glassware and Equipment


Digital Stirring Hot Plates, page 135

# Corning® and PYREX® Disposable Glassware

Corning Life Sciences is pleased to present our Disposable Glass Selection Guide. In this guide, you will find a selection of Corning's newest and most requested products. Corning's PYREX and Corning Brand glassware is made to the same high quality standards as reusable glassware but are disposable to make them more convenient and economical to use.

## Corning Quality

- PYREX low expansion borosilicate glass has been the standard in chemistry labs for over 90 years
- More heat and chemical resistant than plastics
- Choice of a wide selection of products, sizes and styles designed to meet your needs

## Corning Convenience

- Wide variety of reusable glassware, disposable glassware and plastics to help you get your research done
- An economical alternative to cleaning and recycling reusable glassware
- Disposal is easy and safer
- Serological and Bacteriological pipets are sterile and ready to use
- All glassware products can be sterilized by autoclaving

For up-to-date information on Corning Life Sciences' comprehensive range of products and services, go to **www.corning.com/lifesciences** where you can access:

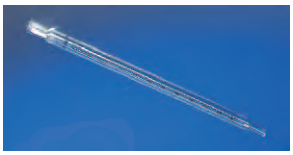
- New Products Information
- Technical Information including:
  - Instruction Manuals
  - Product Bulletins
- Educational Opportunities
- Product Catalog Information
- Product Literature
- Complete Distributor Information

For additional product information, please **visit www.corning.com/lifesciences**, or call +31 (0) 20 659 60 51 or contact your local support office listed on the back cover.

## Ordering Information

Corning products are available directly from Corning (order online, by phone, fax or email).

Or, to place an order through a distribution partner, simply contact the distributor of your choice. For each requested product, provide the Corning catalog number, product description, and desired quantity.



## PYREX® Disposable Glass Serological Pipets

These disposable PYREX serological pipets are calibrated "to deliver" (TD) with blow-out and have negative graduations.

- Available sterile and nonsterile; nonsterile are unplugged and bulk packed
- Choose shorty pipets for working in hoods or tight spaces
- Choose wide orifice tips for use with cells or viscous samples
- Long, slender, tapered tips to make pipetting go faster and easier

### PYREX Disposable Glass Serological Pipets, TD, Individually Wrapped, Sterile, Plugged Ordering Information

| Cat. No. | Capacity | Negative Grad. | Grad. Interval | Qty/ Pk | Approx. Qty/Cs |
|---|---|---|---|---|---|
| 7077-1N | 1.0 mL | 0.2 mL | .01 mL | 200 | 800 |
| 7077-2N | 2.0 mL | 0.2 mL | .0 mL | 180 | 720 |
| 7077-5N | 5.0 mL | 1.0 mL | .1 mL | 120 | 720 |
| 7077-10N | 10.0 mL | 2.0 mL | .1 mL | 100 | 600 |

### PYREX Disposable Glass Serological Pipets, TD, Flip-Top Canister Pack, Sterile, Plugged Ordering Information

| Cat. No. | Capacity | Negative Grad. | Grad. Interval | Qty/ Pk | Approx. Qty/Cs |
|---|---|---|---|---|---|
| 7078D-1 | 1.0 mL | 0.2 mL | .01 mL | 50 | 500 |
| 7078D-5 | 5.0 mL | 1.0 mL | . mL | 25 | 400 |
| 7078D-10 | 10.0 mL | 2.0 mL | .1 mL | 25 | 400 |

### PYREX Disposable Glass Serological Pipets, TD, Multi-Pack, Sterile, Plugged Ordering Information

| Cat. No. | Capacity | Negative Grad. | Grad. Interval | Qty/ Pk | Approx. Qty/Cs |
|---|---|---|---|---|---|
| 7078-5X | 0.5 mL | 0.2 mL | .01 mL | 25 | 500 |
| 7078-1N | 1.0 mL | 0.2 mL | .1 mL | 50 | 1000 |
| 7078-1CN | 1.0 mL | 0.2 mL | .01 mL | 50 | 1000 |
| 7078-2N | 2.0 mL | 0.2 mL | .01 mL | 35 | 700 |
| 7078-5N | 5.0 mL | 1.0 mL | .1 mL | 30 | 960 |
| 7078-10N | 10.0 mL | 2.0 mL | .1 mL | 20 | 720 |

### PYREX Disposable Glass Wide-Tip Serological Pipet, TD, Multi-Pack, Sterile, Plugged Ordering Information

| Cat. No. | Capacity | Negative Grad. | Grad. Interval | Qty/ Pk | Approx. Qty/Cs |
|---|---|---|---|---|---|
| 7078A-5 | 5.0 mL | 1.0 mL | .1 mL | 25 | 400 |
| 7078A-10 | 10.0 mL | 2.0 mL | .1 mL | 20 | 400 |

### PYREX Disposable Glass Shorty Serological Pipets, TD, Individually Wrapped, Sterile, Plugged Ordering Information

| Cat. No. | Capacity | Negative Grad. | Grad. Interval | Qty/ Pk | Approx. Qty/Cs |
|---|---|---|---|---|---|
| 7077B-1 | 1.0 mL | 0.5 mL | .01 mL | 250 | 500 |
| 7077B-5 | 5.0 mL | 3.0 mL | .1 mL | 200 | 400 |
| 7077B-10 | 10.0 mL | 4.0 mL | .2 mL | 200 | 400 |
| 7077B-25 | 25.0 mL | 5.0 mL | .2 mL | 100 | 400 |
| 7077B-50 | 50.0 mL | 3.0 mL | .5 mL | 25 | 50 |

## PYREX® Disposable Glass Serological Pipets (Continued)

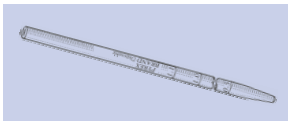
### PYREX Disposable Glass Shorty Serological Pipets, TD, Multi-Pack, Sterile, Plugged Ordering Information

| Cat. No. | Capacity | Negative Grad. | Grad. Interval | Qty/ Pk | Approx. Qty/Cs |
|---|---|---|---|---|---|
| 7078B-1 | 1.0 mL | 0.5 mL | .01 mL | 10 | 500 |
| 7078B-5 | 5.0 mL | 3.0 mL | .1 mL | 10 | 400 |
| 7078B-10 | 10.0 mL | 4. mL | .2 mL | 10 | 400 |
| 7078B-25 | 25.0 mL | 5.0 mL | .2 mL | 5 | 400 |
| 7078B-50 | 50.0 mL | 3.0 mL | .5 mL | 5 | 50 |

### PYREX Disposable Glass Serological Pipets, Disposable, TD, Bulk Pack, Non-Sterile, Unplugged Ordering Information

| Cat. No. | Capacity | Negative Grad. | Grad. Interval | Qty/ Pk | Approx. Qty/Cs |
|---|---|---|---|---|---|
| 7079-5X | 0.5 mL | 0.2 mL | .01 mL | 125 | 500 |
| 7079-1N | 1.0 mL | 0.2 mL | .01 mL | 50 | 1000 |
| 7079-2N | 2.0 mL | 0.2 mL | .01 mL | 35 | 700 |
| 7079-5N | 5.0 mL | 1.0 mL | .1 mL | 30 | 960 |
| 7079-10N | 10.0 mL | 2.0 mL | .1 mL | 20 | 720 |

## PYREX Disposable Bacteriological Pipets, Multi-Pack, Sterile, Plugged



These PYREX borosilicate glass pipets meet the requirements recommended by the American Public Health Association as shown in "Standard Methods for the Examination of Dairy Products."

- Both sizes are designed for gravity feed (blow-out is not required)
- These cotton-plugged pipets are packaged in sterile bags
- New I.S.O. color-coding is printed directly on the tear strip for easy identification by size

### PYREX Disposable Bacteriological Pipets, Multi-Pack, Sterile, Plugged Ordering Information

| Cat. No. | Capacity | Grad. Interval | Qty/Bag | Qty/Cs |
|---|---|---|---|---|
| 7058-1X | 1.1 mL | 0.5, 1, 1.1 | 25 | 500 |
| 7058-2X | 2.2 mL | 1, 2, 2.1, 2.2 | 25 | 500 |

## Corning® and PYREX® Disposable Pasteur Pipets

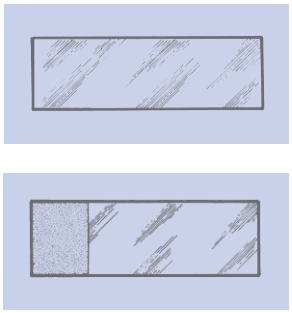
These disposable glass Pasteur unplugged pipets are available in convenient bulk-packs.

- Corning Pasteur pipets are made from economical soda lime glass
- PYREX Pasteur pipets are made from heat resistant borosilicate Code 7800 glass
- One-time use eliminates the danger of cross-contamination of valuable specimens or laboratory reagents
- Pipets have a constriction one inch below the top to facilitate plugging
- Ideal for rapid nonvolumetric transfer work

### Corning and PYREX Disposable Pasteur Pipets Ordering Information

| Cat. No. | Glass Type | Length | Qty/Pk | Qty/Cs |
|---|---|---|---|---|
| 7095D-5X | Borosilicate | 14.6 cm (5.75 inches) | 200 | 1000 |
| 7095D-9 | Borosilicate | 22.9 cm (9 inches) | 200 | 1000 |
| 7095B-5X | Soda lime | 14.6 cm (5.75 inches) | 200 | 1000 |
| 7095B-9 | Soda lime | 22.9 cm (9 inches) | 200 | 1000 |
| 7095B-NMR | Soda lime | 33.0 cm (13 inches) | 100 | 100 |

## Corning Microscope Slides



Corning microscope slides are made from water-white glass to maximize clarity.

- Corning frosted slides are frosted at one end on either one or both sides.
- Frosted slides are highly legible and easy to write on because they are sandblasted instead of etched.
- To minimize waste, all slides are inspected for chips and rough edges before being packaged.
- Products are packaged in one-half gross boxes (approx. 72 slides each)
- 5 gross = 10 boxes (720 slides total)
- 10 gross = 20 boxes (1440 slides total)

### Corning Plain Microscope Slides Ordering Information

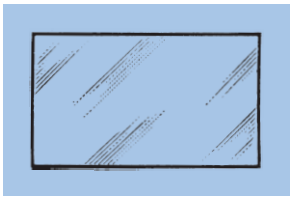
| Cat. No. | Approx. Size | Thickness | Qty/Pk | Qty/Cs |
|---|---|---|---|---|
| 2947-3x1 | 3 x 1 inch | 0.90 - 1.10 mm | 72 | 1440 |
| 2947-75x25 | 75 x 25 mm | 0.90 - 1.10 mm | 72 | 1440 |
| 2947-75x38 | 75 x 38 mm | 0.90 - 1.10 mm | 72 | 720 |
| 2947-75x50 | 75 x 50 mm | 0.90 - 1.10 mm | 72 | 720 |

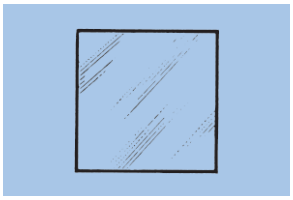
### Corning Frosted One Side Microscope Slides Ordering Information

| Cat. No. | Approx. Size | Thickness | Qty/Pk | Qty/Cs |
|---|---|---|---|---|
| 2948-3x1 | 3 x 1 inch | 0.90 - 1.10 mm | 72 | 1440 |
| 2948-75x25 | 75 x 25 mm | 0.90 - 1.10 mm | 72 | 1440 |

### Corning Frosted Both Sides Microscope Slides Ordering Information

| Cat. No. | Approx. Size | Thickness | Qty/Pk | Qty/Cs |
|---|---|---|---|---|
| 2949-75x25 | 75 x 25 mm | 0.90 - 1.10 mm | 72 | 1440 |





## Corning® Cover Glass

Corning cover glasses are made from optically clear water-white No. 0211 zinc titania glass.

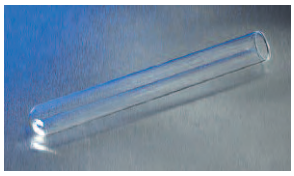
- Resistant to surface attack or weathering
- Available in both rectangular and square formats in several thicknesses
- Packed in 1 ounce plastic boxes, 10 boxes/case

### Corning Rectangular Cover Glasses Ordering Information

| Cat. No. | Approx. Size | Thickness | Approx. Qty/Box | Boxes/Cs |
|---|---|---|---|---|
| 2935-223 | 22 x 30 mm | #1 (0.13 - 0.16 mm) | 118 | 10 |
| 2940-223 | 22 x 30 mm | #11/2 (0.16 - 0.19 mm) | 97 | 10 |
| 2935-224 | 22 x 40 mm | #1 (0.13 - 0.16 mm) | 88 | 10 |
| 2940-224 | 22 x 40 mm | #11/2 (0.16 - 0.19 mm) | 73 | 10 |
| 2935-225 | 22 x 50 mm | #11/2 (0.16 - 0.19 mm) | 72 | 10 |
| 2940-225 | 22 x 50 mm | #11/2 (0.16 - 0.19 mm) | 58 | 10 |
| 2935-243 | 24 x 30 mm | #1 (0.13 - 0.16 mm) | 108 | 10 |
| 2940-243 | 24 x 30 mm | #11/2 (0.16 - 0.19 mm) | 89 | 10 |
| 2935-244 | 24 x 40 mm | #1 (0.13 - 0.16 mm) | 81 | 10 |
| 2940-244 | 24 x 40 mm | #11/2 (0.16 - 0.19 mm) | 67 | 10 |
| 2935-245 | 24 x 50 mm | #1 (0.13 - 0.16 mm) | 65 | 10 |
| 2940-245 | 24 x 50 mm | #11/2 (0.16 - 0.19 mm) | 54 | 10 |
| 2935-246 | 24 x 60 mm | #1 (0.13 - 0.16 mm) | 54 | 10 |
| 2940-246 | 24 x 60 mm | #11/2 (0.16 - 0.19 mm) | 45 | 10 |

### Corning Square Cover Glasses Ordering Information

| Cat. No. | Approx. Size | Thickness | Approx. Qty/Box | Boxes/Cs |
|---|---|---|---|---|
| 2865-18 | 18 x 18mm | #1 (0.13 - 0.16 mm) | 240 | 10 |
| 2870-18 | 18 x 18mm | #11/2 (0.16 - 0.19 mm) | 198 | 10 |
| 2875-18 | 18 x 18mm | #2 (0.19 - 0.25 mm) | 159 | 10 |
| 2865-22 | 22 x 22mm | #1 (0.13 - 0.16 mm) | 160 | 10 |
| 2870-22 | 22 x 22mm | #11/2 (0.16 - 0.19 mm) | 135 | 10 |
| 2875-22 | 22 x 22mm | #2 (0.19 - 0.25 mm) | 106 | 10 |
| 2865-25 | 25 x 25mm | #1 (0.13 - 0.16 mm) | 124 | 10 |
| 2870-25 | 25 x 25mm | #11/2 (0.16 - 0.19 mm) | 102 | 10 |
| 2875-25 | 25 x 25mm | #2 (0.19 - 0.25 mm) | 82 | 10 |



## PYREX® Disposable Culture Tubes

These PYREX culture tubes are made from borosilicate glass to reduce pH changes and contaminants potentially leached from soda-lime glass.

- Choice of round bottom or flat bottom
- Available with or without a white marking spot
- Designed for both tissue culture and general bacteriological work.
- Available with or without cap threads
- Caps are sold separately; see back page

### PYREX Disposable Glass Round Bottom Rimless Culture Tubes, Bulk Pack Ordering Information

| Cat. No. | Approx. Capacity | Approx. O.D. x Length | G.P.I. Thread Finish | Qty/ Pk | Qty/ Cs |
|---|---|---|---|---|---|
| 99445-10 | 4.0 mL | 10 x 75 mm | No threads | 250 | 1000 |
| 99445-12 | 6.0 mL | 12 x 75 mm | No threads | 250 | 1000 |
| 99445-13 | 10.0 mL | 13 x 100 mm | No threads | 250 | 1000 |
| 99445-15 | 11.0 mL | 15 x 85 mm | No threads | 250 | 1000 |
| 99445-16 | 15.0 mL | 16 x 100 mm | No threads | 250 | 1000 |
| 99445-16X | 19.0 mL | 16 x 125 mm | No threads | 250 | 1000 |
| 99445-16XX | 23.0 mL | 16 x 150 mm | No threads | 250 | 1000 |
| 99445-18 | 28.5 mL | 18 x 150 mm | No threads | 250 | 500 |
| 99445-20 | 36.0 mL | 20 x 150 mm | No threads | 250 | 500 |

### PYREX Disposable Glass Round Bottom Screw Cap* Culture Tubes, White Marking Spot, Bulk Pack Ordering Information

| Cat. No. | Approx. Capacity | Approx. O.D. x Length | G.P.I. Thread Finish | Qty/ Pk | Qty/ Cs |
|---|---|---|---|---|---|
| 99447-13 | 7.5 mL | 13 x 100 mm | 13-415 | 250 | 1000 |
| 99447-16 | 15.5 mL | 16 x 125 mm | 15-415 | 250 | 1000 |
| 99447-16X | 19.0 mL | 16 x 150 mm | 15-415 | 250 | 1000 |
| 99447-161 | 11.5 mL | 16 x 100 mm | 15-415 | 250 | 1000 |
| 99447-20 | 24.0 mL | 20 x 125 mm | 18-415 | 250 | 500 |
| 99447-20X | 30.0 mL | 20 x 150 mm | 18-415 | 250 | 500 |

### PYREX Disposable Glass Round Bottom Screw Cap* Culture Tubes, Bulk Pack Ordering Information

| Cat. No. | Approx. Capacity | Approx. O.D. x Length | G.P.I. Thread Finish | Qty/ Pk | Qty/ Cs |
|---|---|---|---|---|---|
| 99449-13 | 7.5 mL | 13 x 100 mm | 13-415 | 250 | 1000 |
| 99449-16 | 11.5 mL | 16 x 100 mm | 15-415 | 250 | 1000 |
| 99449-16X | 15.0 mL | 16 x 125 mm | 15-415 | 250 | 1000 |
| 99449-16XX | 19.0 mL | 16 x 150 mm | 15-415 | 250 | 1000 |
| 99449-20 | 24.0 mL | 20 x 125 mm | 18-415 | 250 | 500 |
| 99449-20X | 30.0 mL | 20 x 150 mm | 18-415 | 250 | 500 |

### PYREX Disposable Glass Flat Bottom Screw Cap* Culture Tubes Ordering Information

| Cat. No. | Approx. Capacity | Approx. O.D. x Length | G.P.I. Thread Finish | Qty/ Pk | Qty/ Cs |
|---|---|---|---|---|---|
| 99448-16X | 11.5 mL | 16 x 100 mm | 15-415 | 250 | 1000 |
| 99448-16 | 17.0 mL | 16 x 125 mm | 15-415 | 250 | 1000 |
| 99448-19 | 29.5 mL | 19.5 x 145 mm | 18-415 | 250 | 500 |

*Caps are sold separately, see Cat. No. 99999.

## PYREX® Disposable Glass Centrifuge Tubes

PYREX disposable glass centrifuge tubes are manufactured from Type I borosilicate glass.

- Available in four sizes: 5, 10, 15 and 50 mL
- Choice of cap styles: either threaded tops for disposable phenolic screw caps or with a tooled rim for secure snap cap sealing
- Caps must be purchased separately; see back page

### PYREX Disposable Glass Snap Cap Centrifuge Tubes Ordering Information

| Cat. No. | Approx. Capacity | Snap Cap† Part. No. | Approx. O.D. x Length | Max. RCF | Qty/ Cs |
|---|---|---|---|---|---|
| 99501-5 | 5 mL | 99500-1 | 13 x 110 mm | 3,000 | 125 |
| 99501-10 | 10 mL | 99500-2 | 16 x 114 mm | 3,000 | 125 |
| 99501-15 | 15 mL | 99500-2 | 17 x 126 mm | 3,000 | 125 |
| 99501-50 | 50 mL | Tooled Rim* | 29 x 137 mm | 3,000 | 72 |

*Snap cap not available in the 50 mL size.
†Snap caps are sold separately.

### PYREX Disposable Glass Screw Cap Centrifuge Tubes Ordering Information

| Cat. No. | Approx. Capacity | Snap Cap† Part. No. | Approx. O.D. x Length | Max. RCF | Qty/ Cs |
|---|---|---|---|---|---|
| 99502-5 | 5 mL | 9998-13<br>99999-13 | 13 x 110 mm | 3,000 | 125 |
| 99502-10 | 10 mL | 9998-15<br>99999-15 | 16 x 114 mm | 3,000 | 125 |
| 99502-15 | 15 mL | 9998-15<br>99999-15 | 17 x 126 mm | 3,000 | 125 |
| 99502-50 | 50 mL | 9999-24<br>9998-24 | 29 x 137 mm | 3,000 | 72 |

†Screw caps are sold separately.

## Caps for PYREX Disposable Glass Centrifuge Tubes

Corning offers the following caps that fit the disposable glass centrifuge tubes.

### Caps for PYREX Disposable Glass Centrifuge Tubes Ordering Information

| Cat. No. | Description | G.P.I. Thread Style | Qty/ Cs |
|---|---|---|---|
| 99500-1 | Polyethylene Snap cap - fits 5mL Tube | n/a | 500 |
| 99500-2 | Polyethylene Snap cap - fits 10 mL and 15 mL Tube | n/a | 500 |
| 9998-13 | Reusable Phenolic Caps with Teflon® Liners - fits 5 mL Tube | 13-415 | 288 |
| 9999-132 | Reusable Phenolic Caps with Rubber Liners - fits 5mL Tube | 13-415 | 288 |
| 99999-13 | Disposable Phenolic Caps with Rubber Liners - fits 5mL Tube | 13-415 | 1000 |
| 9998-15 | Reusable Phenolic Caps with Teflon Liners - fits 10 and 15 mL Tube | 15-415 | 288 |
| 9999-152 | Reusable Phenolic Caps with Rubber Liners - fits 10 and 15 mL Tube | 15-415 | 288 |
| 99999-15 | Disposable Phenolic Caps with Rubber Liners - fits 10 and 15 mL Tube | 15-415 | 1000 |
| 9998-24 | Reusable Phenolic Caps with Teflon Liners - fits 50 mL Tube | 24-400 | 12 |
| 9999-24 | Reusable Phenolic Caps with Rubber Liners - fits 50mL Tube | 24-400 | 12 |

# Digital Stirring Hot Plates

PC-400D

PC-410D

Model PC-420D

Hot Plate Accessories
From left to right:
440129 - Support Rod
440141 - Holding Rod
440140 - Boss Head Clamp
6970SR - Stir Bar Retriever
6795PR - Temperature Controller

The new Corning® digital hot plates and stirrers are made with the same durability and quality Corning has been putting into Pyroceram® top products since 1964. Digital displays are only available on 5" x 7" and 10" x 10" models. All models include Pyroceram top and a two year warranty.

- **Twin display stirring hot plate** – Truly affordable unit shows both temperature and stirring speed on separate digital displays to ensure accuracy time and time again.
- **Precise liquid temperatures and stirring speeds** – Temperature accuracy within ±2°C and stirring speeds at ±5% of the speed setting you choose
- **Digital displays** – Indicate when set temperature and stirring speeds are reached. Facilitiate repeatability of standard operating procedures.
- **Safety indicators** – Power button and hot top indicators warn if unit is plugged in or is too hot to touch. Products have been independently tested and evaluated for compliance to product safety standards.
- **Angled front panel and large knobs** – Minimizes damage from spills and puts controls right at your fingertips

## Corning Digital Hot Plates, Stirrers, and Stirring Hotplates Ordering Information

All models include Pyroceram® top and a two year warranty.

### *Hot Plates*

| Cat. No. | Model Number | Voltage | Temp. Range | Top Plate Size |
|---|---|---|---|---|
| 6796-400D | PC-400D | 230V/50Hz | 5-550°C | 5" x 7" (12.7 x 17.8 cm) |
| 6796-600D | PC-600D | 230V/50Hz | 5-550°C | 10" x 10" (25.4 x 25.4 cm) |

### *Stirrers*

| Cat. No. | Model Number | Voltage | Stir Range | Top Plate Size |
|---|---|---|---|---|
| 6796-410D | PC-410D | 230V/50Hz | 60-1150 RPM | 5" x 7" (12.7 x 17.8 cm) |
| 6796-610D | PC-610D | 230V/50Hz | 60-1150 RPM | 10" x 10" (25.4 x 25.4 cm) |

### *Stirring Hot Plates*

| Cat. No. | Model Number | Voltage | Temp./Stir Range | Top Plate Size |
|---|---|---|---|---|
| 6796-420D | PC-420D | 230V/50Hz | 5-550°C/60-1150 RPM | 5" x 7" (12.7 x 17.8 cm) |
| 6796-620D | PC-620D | 230V/50Hz | 5-550°C/60-1150 RPM | 10" x 10" (25.4 x 25.4 cm) |

### *Accessories*

| Cat. No. | Description |
|---|---|
| 6795PR* | Temperature Controller for digital hot plates and stirring hot plates |
| 6970SR | Stir Bar Retriever |
| 6795KIT | Accessory Kit (includes 6795PR - External temperature controller, 440129 – Support rods, 18," 6970SR - Stir bar retriever) |
| 440129 | Stainless Steel Support Rod – two 9" (45.7 cm) rods, 5/16" diameter. Rods can be screwed together to 18" |
| 400084 | Stainless Steel Support Rod – 12" (30.5 cm), 5/16" diameter. |
| 440140† | Boss Head Clamp for use with 5/16" support rod and holding rod |
| 440141 | Holding Rod – thermocouple, stainless steel |
| 400430 | Stir Bar, 3/8" x 2," for use with models PC-610/620 |
| 401435 | Stir Bar, 3/8" x 1," for use with models PC-210/220/410/420 |
| 409000 | Stir Bar, 3/4" x 3," for use with model PC-611 stirrers |
| 409021 | Stir Bar, 5/16" x 1," for use with model PC-171 stirrers |

*Temperature controllers are not available for use with stirrer only units.
†Bosshead clamps to support rod, holding rod connects to bosshead. Temperature controller slides into holding rod.

CE

# Alphabetical Index

# Alphabetical Index (CONTINUED)

## R



## S



## T



## U



## V

# Catalog Number Index

# Catalog Number Index (CONTINUED)



## 4010-4975



## 6509-6970



## 7000-7610



## 8160-8950



## 9017-9999

# Notes