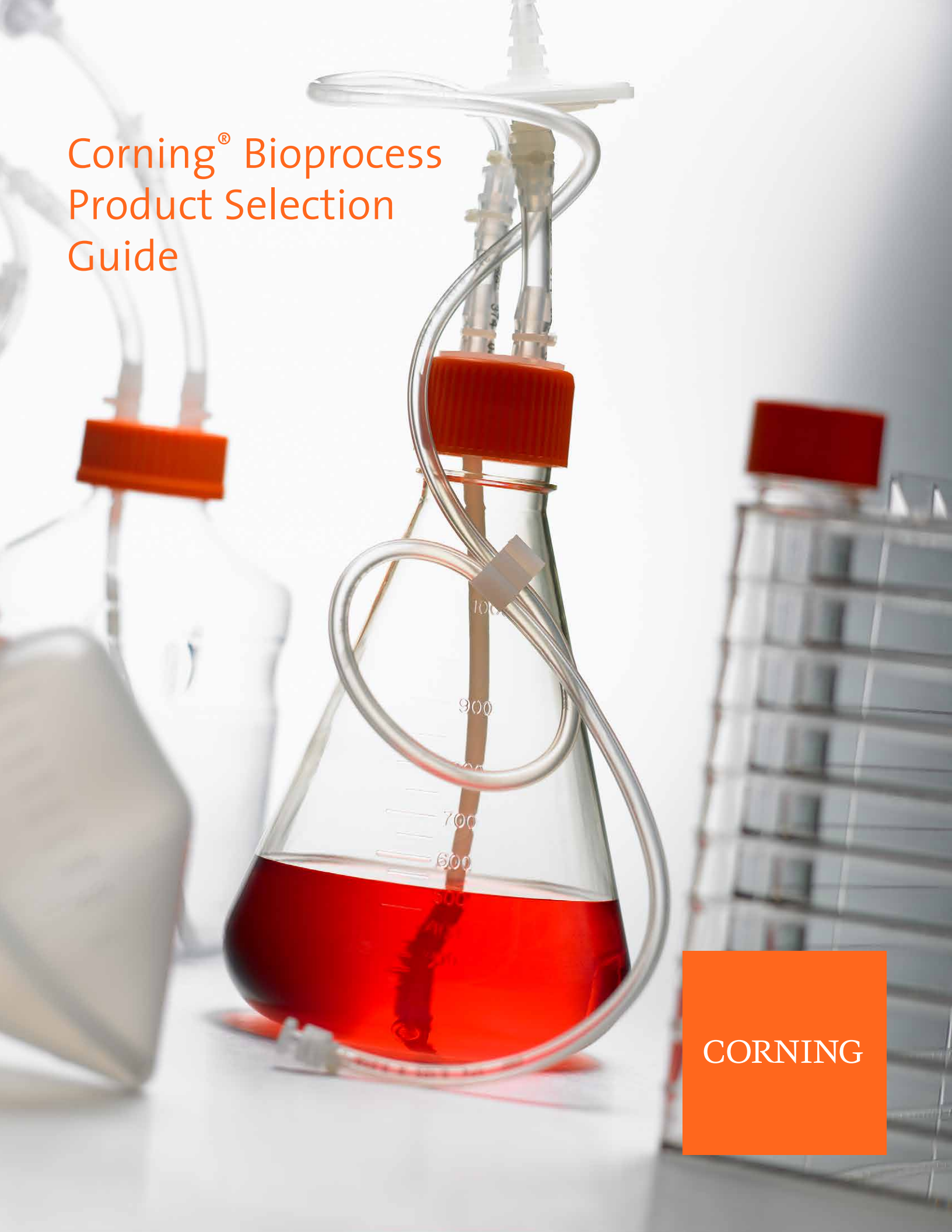


Corning® Bioprocess Product Selection Guide



CORNING



Bioprocess

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Ordering Products Direct from Corning

For information on Purchasing Options, Terms and Conditions of Sale, Return and Repair Policies, and Warranty/Guarantee Registration, visit our website at www.corning.com/how-to-buy.

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. In addition, customers can request a Certificate of Quality 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.

Stackable Cell Culture



Corning® CellSTACK® Culture Chambers

- ▶ Available in five sizes:
 - 1-Stack with 636 cm² cell growth area
 - 2-Stack with 1,272 cm² cell growth area
 - 5-Stack with 3,180 cm² cell growth area
 - 10-Stack with 6,360 cm² cell growth area
 - 40-Stack with 25,440 cm² cell growth area
- ▶ Choice of traditional tissue culture treatment, Corning CellBIND® surface for enhanced cell attachment, or Ultra-Low Attachment surface for reduced cell attachment on select CellSTACK products.
 - Corning CellBIND surface
 - Great for reducing serum levels
 - Better attachment increases cell yields
 - Ultra-Low Attachment surface
 - Maintains cells in an unattached state
 - Prevents stem cells from attachment-mediated differentiation
 - Reduces binding of attachment and serum proteins to the substrate
- ▶ Greater chamber durability
 - Superior mechanical strength and structural integrity
 - Standard 33 mm vented caps offer larger openings with threaded closures
 - 100% leak-tested prior to shipping
- ▶ Sterility Assurance Level (SAL) 10⁻⁶
- ▶ Nonpyrogenic
- ▶ Continuous supply reliability – manufactured under cGMP conditions

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



Corning CellSTACK stacking device (Cat. No. 3331)

Corning® CellSTACK® Accessories

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

Better Filling

Optional filling caps allow direct aseptic transfer of media and cells via pumping or gravity feed. Coupling devices are available with or without integrally sealed, chemically resistant, heat-sealable flexible tubing. Optional filling caps with attached hydrophobic membrane filters provide for gas exchange and faster aseptic venting during liquid transfers. Additional sterile vented or unvented 33 mm replacement caps are also available (see table below).

Better Options

For additional filling and fluid management options for our CellSTACK vessels, consider Corning's suite of closed system solutions. These solutions provide sterile, easy-to-use options that are available as stand-alone manifolds or accessories, or pre-integrated on the CellSTACK vessel. Contact your Corning Bioprocess Specialist for available closed system products or to configure one specifically for your process (see page 13 for Closed System Solutions for Corning CellSTACK vessels).

Cat. No.	Description	Qty/Pk	Qty/Cs
3331	Stacking device, ABS, nonsterile	1	5
3732	Universal cap*, 33 mm, with vented overcap, double-bagged, sterile	1	4
3969	Solid cap, sterile	1	6
3968	Vent cap, 0.2 µm membrane, sterile	1	6

*All caps are 33 mm thread caps.



33 mm polyethylene solid cap, not vented (Cat. No. 3969)



33 mm polyethylene universal cap with vented overcap (Cat. No. 3732)



33 mm polyethylene vented cap (Cat. No. 3968)

Corning® HYPERStack® Cell Culture Vessels



2 Sizes Available

(cm² = surface area)

12-layer = 6,000 cm²

36-layer = 18,000 cm²



Disposable tubing set for roller bottle (Cat. No. 10043)

Closed System for High Yield Cell Growth

Corning's High Yield PERFORMANCE (HYPER) platform – the Corning HYPERStack cell culture vessel – combines the best of two Corning products: the Corning CellSTACK® culture chamber and the Corning HYPERFlask® vessel. The utilization of the proprietary gas-permeable film technology provided in the format of the CellSTACK culture chamber allows the HYPERStack vessel to be the most efficient, scalable cell culture vessel for adherent cell culture available today.

Features and Benefits

- ▶ **More cells** – 2.5x more cells per volumetric footprint
- ▶ **Closed system** – no open fluid manipulations
- ▶ **Scalable product** – multiple size offerings
- ▶ **Automation compatible** – enables easier manipulation
- ▶ **Fixed media volume** – 0.2 mL/cm² fills vessel for optimal handling
- ▶ **Innovative assembly** – no adhesives, low particulate
- ▶ **Less volumetric waste** – less waste per growth area

Protocol Guides

Select HYPERStack video protocols available at www.corning.com/lifesciences.

Cat. No.	Description	Growth Area (cm ²)	Qty/ Pk	Qty/ Cs
10012	HYPERStack 12-layer cell culture vessel, Corning CellBIND® surface	6,000	1	4
10013	HYPERStack 12-layer cell culture vessel, non-treated surface	6,000	1	4
10036	HYPERStack 36-layer cell culture vessel, Corning CellBIND surface	18,000	1	2
10037	HYPERStack 36-layer cell culture vessel, non-treated surface	18,000	1	2

Accessories

10042	Disposable tubing set for use with glass bottle, 3/8" ID x 1/2" OD, animal component-free, chemically resistant, heat sealable flexible tubing, 18" in length, sterile		1	2
10043	Disposable tubing set for use with 850 cm ² polystyrene roller bottle, 3/8" ID x 1/2" OD, animal component-free, chemically resistant, heat sealable flexible tubing, 0.2 µm filter, MPC quick connect		1	2
431644	Corning 850 cm ² polystyrene bottle, Easy Grip cap, not treated, sterile		1	40

MPC = medical plastic coupler.

Corning Automated Manipulator Rack for Corning CellSTACK and HYPERStack Cell Culture Vessels



The Corning Automated Manipulator Platform is an effective solution for automating the scale-up of your adherent cell culture process. The automated manipulator platform is designed to save time, reduce cost, and reduce process variability by automating the handling of multiple large stacked vessels during critical fluid handling steps. Optimized for use with Corning CellSTACK and HYPERStack cell culture vessels, the platform consists of a fully programmable manipulator, a manipulator cart, and multiple rack options designed for specific vessel configurations.

Features and Benefits

- ▶ Greatly simplifies CellSTACK and HYPERStack processing by automating filling, equilibration, and harvest
- ▶ Enables consistent and scalable process performance
- ▶ Improves safety by reducing manual manipulations with safeguards include intrusion sensors, fixed guards, and interlocks
- ▶ Intuitive, programmable touch-screen operator panel, full motion control capability, low-maintenance electric motor drive system

Specifications

Dimensions (W x D x H)	62 x 82 x 74 in. (1,580 x 2,080 x 1,880 mm)
Weight	2,205 lbs (1,000 kg)
Pivot	-2° (right) to 130° (left)
Tilting speed	1° to 60°/second (except for acceleration or deceleration range)
Required power supply	3 phase AC 200-230V, 50/60Hz, 7kVA (AC 380-440V option available)
Mountable vessels	Corning CellSTACK: Three 40-layer vessels Corning CellSTACK: Six 10-layer vessels Corning HYPERStack: Six 36-layer vessels
Installation Environment	Temperature: 0°C to 30°C Humidity: 35% to 85% relative humidity or less (no condensation) Air cleanliness: Grade B recommended Floor: Withstand load of 1000 kg/m ² , no slope recommended
Surface Material	Type 304 stainless steel
System meets applicable FCC, CE, UL and CSA Electrical Safety and EMC standards	

Cat. No. Description

6650	Corning Automated Manipulator platform, 180-254V, standard power supply
6651	Corning Automated Manipulator platform, 380-440V, standard power supply
6652	Corning Automated Manipulator Cart
6653	Corning Automated Manipulator rack for Corning CellSTACK-10, holds six CellSTACK-10 vessels, compatible with Manipulator cart (Cat. No. 6652)
6654	Corning Automated Manipulator rack for Corning CellSTACK-40, holds three CellSTACK-40 vessels, compatible with Manipulator cart (Cat. No. 6652)
6655	Corning Automated Manipulator rack for Corning HYPERStack-36, holds six HYPERStack-36 vessels, compatible with Manipulator cart (Cat. No. 6652)
6656	Attachment for Automated Manipulator cart (Cat. No. 6652). Enables the use of Corning Automated Manipulator carts with Thermo Scientific™ Nunc™ Cell Factory™ incubators



Corning CellCube 25-Stack module (Cat. No. 3201)



Corning CellCube 100-Stack module (Cat. No. 3264)



E-Cube system with Corning CellCube module (Cat. Nos. 3286 and 3200)

Corning® CellCube® Systems

The Corning CellCube system provides a fast, simple, and compact method for the mass culture of attachment-dependent cells. It uses a Tissue Culture (TC)-treated growth surface for cell attachment, and continually perfuses the cells with fresh medium for increased cell productivity. The CellCube system provides an environment that simulates in vivo conditions and reliably distributes nutrients and oxygen with low differential gradients across all cells within the modules. The CellCube modules provide a traditional TC-treated surface or Corning CellBIND® surface for the growth of attachment dependent cells.

Cat. No.	Description	Qty/Cs
3136	CellCube single module system with stainless steel stand	1
3200	CellCube 10-Stack module (8,500 cm ²), TC-treated	2
3201	CellCube 25-Stack module (21,250 cm ²), TC-treated	1
3304	CellCube 25-Stack module (21,250 cm ²), Corning CellBIND surface	1
3264	CellCube 100-Stack module (85,000 cm ²), TC-treated	1
3032	CellCube 100-Stack module (85,000 cm ²), Corning CellBIND surface	1
92341	CellCube culture system clean room cart with tray	1

E-Cube™ Culture System

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

Cat. No.	Description	Qty/Pk	Qty/Cs
3286	E-Cube system kit (without CellCube module)	1	1
3200	CellCube module, 10-Stack	1	2

Accessories

430518	1L storage bottle with cap	2	24
401654	45 mm cap with 2 stainless steel ports	1	1
3287	E-Cube fittings	1	1

Corning® Roller Bottles



Roller Bottle Application Tips

- ▶ Corning recommends 0.2 mL 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.

Ideal for a variety of rolling applications, Corning Roller Bottles are made of USP Class VI Polystyrene. They are single-use, sterile, feature laser-etched graduations, and are available in 490 cm², 850 cm², 1700 cm² pleated, and 1750 cm² sizes. Caps are available in solid High Density Polyethylene (HDPE) or vented HDPE with a 0.2 mm micro-porous PTFE membrane.

- ▶ Treated for optimal cell attachment
- ▶ One piece seamless construction
- ▶ All bottles have printed lot numbers to aid in product traceability
- ▶ Sterility Assurance Level (SAL) 10⁻⁶
- ▶ Nonpyrogenic

Expected Cell Yields and Recommended Medium Volumes

Description	Approximate Growth Area (cm ²)	Average Cell Yield*	Recommended Medium Volume (mL)
490 cm ² roller bottle	490	4.9 x 10 ⁷	100 - 150
850 cm ² roller bottle	850	8.5 x 10 ⁷	170 - 255
1,700 cm ² roller bottle	1,700	1.7 x 10 ⁸	340 - 510
1,750 cm ² roller bottle	1,750	1.75 x 10 ⁸	350 - 525

*Assumes an average yield of 1 x 10⁵ cells/cm² from a 100% confluent culture. Yields from many cell types can be lower than this.

Standard Roller Bottles

Cat. No.	Surface	Surface Area (cm ²)	Cap Style	Graduations	Qty/Pk	Qty/Cs
430195	TC-treated	490	Plug seal	No	2	40
430849	TC-treated	850	Easy grip	Yes	2	40
431133	TC-treated	850	Easy grip	Yes	20	20
431198	TC-treated	850	Easy grip vent	Yes	2	40
430851	TC-treated	850	Easy grip	Yes	5	40
431321	TC-treated	850	Easy grip	Yes	22	44
3907	Corning CellBIND®	850	Easy grip	Yes	2	40
431329	Corning CellBIND	850	Easy grip vent	Yes	2	40
431344	Corning CellBIND	850	Easy grip	Yes	22	44
431644	Untreated	850	Easy grip	Yes	1	40
430699	TC-treated	1,750	Easy grip	Yes	10	20

Expanded Surface Roller Bottles

Ribbed design provides twice the surface area with the same exterior dimensions

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

Polyethylene Roller Bottle Caps

Caps are available separately and are individually wrapped.

Cat. No.	Cap Style	Qty/Pk	Qty/Cs
431132	Easy grip vent cap	1	300



Easy grip vent cap is designed for applications requiring consistent gas exchange.

Corning® Erlenmeyer Shaker Flasks



Corning Polycarbonate (PC) and Polyethylene terephthalate glycol-modified (PETG) Erlenmeyer flasks are ideal for all shaker culture applications. These flasks are single-use, sterile, individually packaged, and constructed of USP Class VI PC or PETG. Molded graduations are standard, and the vented threaded caps feature a 0.2 µm hydrophobic membrane to provide continuous gas exchange while ensuring sterility with a liquid-tight seal. Choose the flask that best suits your application and cell line.

- ▶ Sterility Assurance Level (SAL) of 10⁻⁶
- ▶ RNase-/DNase-free
- ▶ Nonpyrogenic

Shaker Flask Application Tip

Corning recommends starting with a shaking rate of 75 rpm to 125 rpm (orbital shaker). For flasks up to 3L, a medium volume of 30% to 40% of the nominal flask capacity is recommended. For the 5L flasks, a medium volume of 50% to 70% of nominal capacity is recommended.

Cat. No.	Description	Material	Qty/Cs
431405	Erlenmeyer flask, 125 mL, vent cap, baffled bottom	PC	50
431404	Erlenmeyer flask, 125 mL, flat cap, baffled bottom	PC	50
431143	Erlenmeyer flask, 125 mL, vent cap, plain bottom	PC	50
430421	Erlenmeyer flask, 125 mL, flat cap, plain bottom	PC	50
431407	Erlenmeyer flask, 250 mL, vent cap, baffled bottom	PC	50
431406	Erlenmeyer flask, 250 mL, flat cap, baffled bottom	PC	50
431144	Erlenmeyer flask, 250 mL, vent cap, plain bottom	PC	50
430183	Erlenmeyer flask, 250 mL, flat cap, plain bottom	PC	50
431401	Erlenmeyer flask, 500 mL, vent cap, baffled bottom	PC	25
431408	Erlenmeyer flask, 500 mL, flat cap, baffled bottom	PC	25
431145	Erlenmeyer flask, 500 mL, vent cap, plain bottom	PC	25
430422	Erlenmeyer flask, 500 mL, flat cap, plain bottom	PC	25
431403	Erlenmeyer flask, 1L, vent cap, baffled bottom	PC	25
431402	Erlenmeyer flask, 1L, flat cap, baffled bottom	PC	25
431147	Erlenmeyer flask, 1L, vent cap, plain bottom	PC	25
431146	Erlenmeyer flask, 1L, flat cap, plain bottom	PC	25
431256	Erlenmeyer flask, 2L, vent cap, baffled bottom	PC	6
431255	Erlenmeyer flask, 2L, vent cap, plain bottom	PC	6
431280	Erlenmeyer flask, 2L, vent cap, plain bottom	PETG	6
431281	Erlenmeyer flask, 2L, vent cap, baffled bottom	PETG	6
431253	Erlenmeyer flask (Fernbach design), 3L, vent cap, baffled bottom	PC	4
431252	Erlenmeyer flask (Fernbach design), 3L, vent cap, plain bottom	PC	4
431282	Erlenmeyer flask, 3L, vent cap, plain bottom	PETG	4
431283	Erlenmeyer flask, 3L, vent cap, baffled bottom	PETG	4
431684	Erlenmeyer flask (Fernbach design), 5L, vent cap, baffled bottom	PC	4
431685	Erlenmeyer flask (Fernbach design), 5L, vent cap, plain bottom	PC	4
431284	Erlenmeyer flask, 5L, vent cap, plain bottom	PETG	4
431285	Erlenmeyer flask, 5L, vent cap, baffled bottom	PETG	4
431686*	Erlenmeyer flask (Fernbach design), 5L, flat cap, plain bottom	PC	4

*Made to order only

Replacement Erlenmeyer Flask Caps

Corning polypropylene Erlenmeyer flask caps are also available separately. They are sterile, individually packaged, and available for the 500 mL, 1L, 2L, 3L, and 5L flask sizes, and fit both PC and PETG flasks.



70 mm vent cap (Cat. No. 431340)

Cat. No.	Description	Qty/Cs
431372*	43 mm vent cap for 500 mL and 1L Erlenmeyer flask	50
431339	48 mm vent cap for 2L Erlenmeyer flask	24
431364	48 mm flat cap for 2L Erlenmeyer flask	24
431340	70 mm vent cap for 3L Erlenmeyer flask	24
431363	70 mm flat cap for 3L Erlenmeyer flask	24
431682	100 mm vent cap for 5L Erlenmeyer flask	24

*Made to order only

Mini Bioreactor



Corning® Mini Bioreactors are ideal for high throughput process optimization for suspension cell culture. The product consists of the Corning 50 mL centrifuge tube with a vented cap. This product is used in cell line development, clone selection, media optimization, and recombinant protein development. Tube has large marking spot to clearly identify tube contents and experimental parameters. Polyethylene cap has 4 vents, and the hydrophobic membrane provides gas exchange.

- ▶ Sterility Assurance Level (SAL) of 10^{-6}
- ▶ RNase-/DNase-free
- ▶ Nonpyrogenic

Corning Disposable Spinner Flasks



Disposable spinner flasks
(Cat. Nos. 3152 and 3153)

Cat. No.	Description	Qty/Pk	Qty/Cs
431720	Mini bioreactor, 50 mL with polypropylene vented caps, hydrophobic membrane	25	300

- ▶ The Corning disposable spinner flask system comes ready-to-use with a paddle and integrated magnet, reducing the need for time-consuming assembly, cleaning, or reassembly.
- ▶ Molded from virgin polystyrene and sterilized, each spinner flask system assures a clean unit, free of detergent residues and contamination.
- ▶ The Corning disposable spinner flask system is ideal for both suspension and microcarrier cell culture applications. Vessels are designed for optimal mixing across the range of vessel sizes. A unique integrated magnet provides smooth, even paddle rotation at required speeds.
- ▶ The paddle size and height are optimized for each vessel size. A unique integrated magnet provides smooth, even rotation at required speeds on slow-speed stirrers.

Disposable Spinner Flask Specifications

Parameter	125 mL (Cat. No. 3152)	500 mL (Cat. No. 3153)	1L (Cat. No. 3561)	3L (Cat. No. 3563)
Vessel height	145 mm	203.2 mm	245 mm	259 mm
Vessel diameter	63.5 mm	87.3 mm	137 mm	188 mm
Vessel width	114.8 mm	139.7 mm	203 mm	256 mm
Sidearm opening (ID)	18.8 mm	38.1 mm	39 mm	39 mm
Sidearm cap diameter (OD)	25 mm (GL 25 threads)	45 mm (GL 45 threads)	54 mm (GL 45 threads)	54 mm (GL 45 threads)
Paddle size (W x H)	39.9 x 50.0 mm	50.3 x 61.0 mm	69 x 215 mm	105 x 227 mm
Maximum drive speed			150 rpm	150 rpm
Magnet	ALNICO	ALNICO	ALNICO	ALNICO



Disposable spinner flasks
(Cat. Nos. 3561 and 3563)

Corning 125 mL and 500 mL Disposable Spinner Flasks

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
3578	Disposable spinner flask, vent cap	500	100	45	12

Corning 1L and 3L Disposable Spinner Flasks

Cat. No.	Description	Capacity (L)	Qty/Cs
3561	Disposable spinner flask	1	6
3580	Disposable spinner flask, vent cap	1	6
3563	Disposable spinner flask	3	4
3581	Disposable spinner flask, vent cap	3	4



Replacement Disposable Spinner Flask Caps

Corning disposable spinner flask replacement caps are available separately. Each are provided sterile and individually doubled-bagged. Caps are available for 500 mL, 1L, and 3L flask sizes.

Cat. No.	Description	Compatible with Cat. No.	Qty/Cs
3567	Vent cap, 0.2 µm pore	3153, 3561, 3580, 3563, 3581	4

Corning® Polystyrene Microcarriers for Bioprocess Scale-up



Corning Polystyrene microcarriers are designed to simplify your scale-up processes. The microcarriers are sterile, ready-to-use, and available with closed systems packaging for aseptic transfer. Additionally, the microcarriers are available with a variety of surface treatments and coatings to enhance cell attachment, maximizing cell yield and viability.

Features

- ▶ Consistency – USP Class VI polystyrene material provides a reliable platform
- ▶ Performance – Corning microcarriers are offered with a wide variety of surface treatment and coating options to enhance cell performance and yields:
 - Corning untreated surface is available for difficult to detach cell types or where self-coating is required.
 - Corning Synthemax™ II substrate creates a synthetic surface on the microcarriers ideal for stem cell expansion.
 - Corning CellBIND® surface treatment for enhanced cell attachment
 - Collagen Type I coating provides extracellular matrix protein to promote cell attachment and growth.
- ▶ Sterility Assurance Level (SAL) of 10⁻⁶
- ▶ Nonpyrogenic
- ▶ Available as closed system solutions

Product Specifications

- ▶ Bead size: 125 µm to 212 µm
- ▶ Density: 1.026 ± 0.004 g/cm³
- ▶ cm²/gram: 360

Vials and Closed System Packaging

Corning Polystyrene microcarriers are available sterile and ready to use in various vial and bottled formats. Corning Polystyrene microcarriers are also available in off-the-shelf and custom closed systems packaging. Tubing, connectors, and materials are customizable based on individual needs through our Closed Systems Solutions process.

Cat. No.	Description	Size	Qty/Cs
3779	Corning CellBIND surface microcarriers, PS	10 g	1
4620	Corning CellBIND surface microcarriers, PS	100 g	1
4621	Corning CellBIND surface microcarriers, PS	500 g	1
3781	Low concentration Corning Synthemax II microcarriers, PS	10 g	1
4622	Low concentration Corning Synthemax II microcarriers, PS	100 g	1
4623	Low concentration Corning Synthemax II microcarriers, PS	500 g	1
3786	Corning Collagen-coated microcarriers, PS	10 g	1
3772	Corning untreated microcarriers, PS	10 g	1
4624	Corning untreated microcarriers, PS	100 g	1
4625	Corning untreated microcarriers, PS	500 g	1



Scientific Support

Corning strives to provide the highest scientific support for all our products. Please contact your Corning Account Manager or Bioprocess Specialist for ideas on how to optimize Corning Polystyrene microcarrier culture to meet your scale-up needs.



Aseptic Transfer Caps for Corning Polystyrene Microcarriers (100 g and 500 g sizes)

Cat. No.	Description	Tubing	Tubing Length with Connector	Tubing Connection	Qty/ Cs
4626	Aseptic transfer cap for 100 g bottles – Male Luer lock	Chemically resistant, heat sealable flexible tubing, 1/8" ID, 1/4" OD	30"	Male Luer lock	1
4627	Aseptic transfer cap for 100 g bottles – Male MPC	Chemically resistant, heat sealable flexible tubing, 1/8" ID, 3/8" OD	30"	Male MPC	1
4628	Aseptic transfer cap for 500 g bottles – Male Luer lock	Chemically resistant, heat sealable flexible tubing, 1/8" ID, 1/4" OD	30"	Male Luer lock	1
4629	Aseptic transfer cap for 500 g bottles – Male MPC	Chemically resistant, heat sealable flexible tubing, 1/8" ID, 3/8" OD	30"	Male MPC	1

MPC = medical plastic coupler.

Corning® Closed System Solutions

Many of the Corning products you rely on for cell culture are now offered as closed system solutions

Closed cell culture systems help reduce the risk of adventitious contamination during drug development and manufacturing.

Corning closed system solutions arrive sterile and ready to use. They decrease the risk of contamination, reduce the time and expense of sourcing and assembly, and improve productivity.

Corning closed systems are:

- ▶ Compliant with USP Class VI
- ▶ Sterility Assurance Level (SAL) of SAL 10^{-6}
- ▶ Animal-free or BSE/TSE compliant
- ▶ Nonpyrogenic

Choose from Two Types of Closed System Solutions

Catalog Product

Standard offerings are available in our catalog including aseptic transfer cap accessories or vessels with pre-attached aseptic accessories.

Configure-to-Order

Corning has a portfolio of over 200 qualified components in our library that can be assembled to meet your specifications.

Designing Your Customized Order is Easy

1. Select your vessel or bag and desired surface treatment.
2. Select your components.
3. Contact your Corning Account Manager or Bioprocess Specialist.



Vent cap with tubing
(Cat. No. 3281)



Fill cap, male MPC, 3/8"
(9.5 mm) ID (Cat. No. 3339)



Aseptic transfer caps, MLL
(Cat. Nos. 431444, 431446,
and 431448)



Aseptic transfer caps, MPC
(Cat. Nos. 431445, 431447,
and 431449)

Aseptic Transfer Caps for Corning® CellSTACK® Culture Chambers

Cat. No.	Description	Tubing/Cap Inside Diam.	Tubing Length	Tubing Connection	Qty/ Pk	Qty/ Cs
3282	Fill cap with tubing, FLL	1/8"	18"	FLL	1	5
3333	Fill cap with Male MPC	1/4"	28"	Male MPC	1	4
3328	Fill cap with Female MPC	1/4"	N/A	Female MPC	1	4
3334	Fill cap with Male MPC	1/4"	N/A	Male MPC	1	4
3283	Fill cap with tubing and barbed fittings	3/8"	18"	Barbed fitting	1	5
3339	Fill cap with Male MPC	3/8"	N/A	Male MPC	1	4
3329	Fill cap with Female MPC coupling	3/8"	N/A	Female MPC	1	4
11902	Fill cap with tubing and Female MPC	3/8"	28"	Female MPC	1	4
3284	Vent cap with tubing and 37 mm hydrophobic glass laminate 1.0 µm vent filter	1/4"	2 3/4"	N/A	1	4
3281	Vent cap with tubing and 50 mm hydrophobic PVDF 0.2 µm vent filter	3/8"	2 3/4"	N/A	1	5
3324	Two (2) vented over caps and one (1) solid over cap	N/A	N/A	N/A	5	100

FLL = female Luer lock, MPC = medical plastic coupler, MLL = male Luer lock.

Aseptic Transfer Caps for Corning Erlenmeyer Flasks

Cat. No.	Description	Tubing	Tubing Length with Connector	Tubing Connection	Qty/ Pk	Qty/ Cs
431444	43 mm cap, 1L, dip tube with 0.2 µm vent	Chemically resistant, heat sealable flexible tubing, 1/8" ID, 1/4" OD	12"	MLL	1	5
431445	43 mm cap, 1L, dip tube with 0.2 µm vent	Chemically resistant, heat sealable flexible tubing, 1/4" ID, 3/8" OD	12"	Male MPC	1	5
431446	48 mm cap, 2L, dip tube with 0.2 µm vent	Chemically resistant, heat sealable flexible tubing, 1/8" ID, 1/4" OD	12"	MLL	1	6
431447	48 mm cap, 2L, dip tube with 0.2 µm vent	Chemically resistant, heat sealable flexible tubing, 1/4" ID, 3/8" OD	12"	Male MPC	1	6
431448	70 mm cap, 3L, dip tube with 0.2 µm vent	Chemically resistant, heat sealable flexible tubing, 1/8" ID, 1/4" OD	12"	MLL	1	4
431449	70 mm cap, 3L, dip tube with 0.2 µm vent	Chemically resistant, heat sealable flexible tubing, 1/4" ID, 3/8" OD	12"	Male MPC	1	4
11500	100 mm cap, 5L, dip tube with 0.2 µm vent	Chemically resistant, heat sealable flexible tubing, 1/4" ID, 3/8" OD	36"	Male MPC	1	4

FLL = female Luer lock, MPC = medical plastic coupler, MLL = male Luer lock.

Please contact your local Corning Bioprocess Specialist to discuss individual components.

Preassembled Closed System Solutions for Erlenmeyer Flasks

Polycarbonate and plain-bottom



Corning Erlenmeyer flasks for closed systems solutions, MPC (Cat. Nos. 431518 and 431520)



125 mL Corning Erlenmeyer flask with dip tube and 0.2 µm filter, MLL/FLL (Cat. No. 11405)



1L Corning Erlenmeyer flask with dip tube and 0.2 µm filter, MLL/FLL (Cat. No. 11440)



5L Corning Erlenmeyer flask with dip tube and 0.2 µm filter, MPC (Cat. No. 11501)

Cat. No.	Description	Tubing	Tubing Length with Connector	Tubing Connection	Qty/ Pk	Qty/ Cs
11405	125 mL flask with dip tube with 0.2 µm filter, MLL/FLL	Chemically resistant, heat sealable flexible tubing, 1/8" ID, 1/4" OD	36"	MLL	1	6
11410	250 mL flask with dip tube with 0.2 µm filter, MLL/FLL	Chemically resistant, heat sealable flexible tubing, 1/8" ID, 1/4" OD	21"	MLL	1	4
11415	250 mL flask with dip tube with 0.2 µm filter, MLL/FLL	Chemically resistant, heat sealable flexible tubing, 1/8" ID, 1/4" OD	36"	MLL	1	4
11425	500 mL flask with dip tube with 0.2 µm filter, MLL/FLL	Chemically resistant, heat sealable flexible tubing, 1/8" ID, 1/4" OD	38"	MLL	1	2
431510	1L flask with dip tube with 0.2 µm vent, MLL	Chemically resistant, heat sealable flexible tubing, 1/8" ID, 1/4" OD	12"	MLL	1	4
431516	1L flask with dip tube with 0.2 µm vent, MPC	Chemically resistant, heat sealable flexible tubing, 1/4" ID, 3/8" OD	12"	Male MPC	1	4
11440	1L flask with dip tube with 0.2 µm filter, MLL/FLL	Chemically resistant, heat sealable flexible tubing, 1/8" ID, 1/4" OD	38"	MLL	1	4
431512	2L flask with dip tube with 0.2 µm vent, MLL	Chemically resistant, heat sealable flexible tubing, 1/8" ID, 1/4" OD	12"	MLL	1	3
431518	2L flask with dip tube with 0.2 µm vent, MPC	Chemically resistant, heat sealable flexible tubing, 1/4" ID, 3/8" OD	12"	Male MPC	1	3
11460	2L flask with dip tube with 0.2 µm filter, MLL/FLL	Chemically resistant, heat sealable flexible tubing, 1/8" ID, 1/4" OD	24"	MLL	1	2
11465	2L flask with dip tube with 0.2 µm filter, MLL/FLL	Chemically resistant, heat sealable flexible tubing, 1/4" ID, 3/8" OD	36"	MLL	1	2
431514	3L flask with dip tube with 0.2 µm vent, MLL	Chemically resistant, heat sealable flexible tubing, 1/8" ID, 1/4" OD	12"	MLL	1	2
431520	3L flask with dip tube with 0.2 µm vent, MPC	Chemically resistant, heat sealable flexible tubing, 1/4" ID, 3/8" OD	12"	Male MPC	1	2
11495	3L flask with dip tube with 0.2 µm filter, MLL/FLL	Chemically resistant, heat sealable flexible tubing, 1/4" ID, 3/8" OD	36"	MLL	1	2
11501	5L flask with dip tube with 0.2 µm filter, MPC	Chemically resistant, heat sealable flexible tubing, 1/4" ID, 3/8" OD	36"	Male MPC	1	2
11502	5L flask, baffled, with dip tube with 0.2 µm filter, MPC	Chemically resistant, heat sealable flexible tubing, 1/4" ID, 3/8" OD	36"	Male MPC	1	2

MLL = male Luer lock, MPC = medical plastic coupler, FLL = female Luer lock.

Please contact your local Corning Bioprocess Specialist to discuss individual components.



Aseptic transfer cap, MPC quick connect (Cat. Nos. 3528, 3545, and 3558)



Aseptic transfer cap, MLL quick connect (Cat. Nos. 3565, 3562, and 3564)



1L and 3L Disposable spinner flasks, MPC quick connect (Cat. Nos. 3546 and 3559)

Aseptic Transfer Caps for Disposable Spinner Flasks

Cat. No.	Description	Tubing	Tubing Length with Connector	Tubing Connection	Qty/Pk	Qty/Cs
3565	500 mL, 1/8" dip tube with 0.2 µm filter, vent	Chemically resistant, heat sealable flexible tubing, 1/8" ID, 1/4" OD	24"	MLL	1	2
3528	500 mL, 1/4" dip tube with 0.2 µm filter, vent	Chemically resistant, heat sealable flexible tubing, 1/4" ID, 3/8" OD	24"	Male MPC	1	2
3562	1L, 1/8" dip tube with 0.2 µm filter, vent	Chemically resistant, heat sealable flexible tubing, 1/8" ID, 1/4" OD	24"	MLL	1	2
3545	1L, 1/4" dip tube with 0.2 µm filter vent	Chemically resistant, heat sealable flexible tubing, 1/4" ID, 3/8" OD	24"	Male MPC	1	2
3564	3L, 1/8" dip tube with 0.2 µm filter, vent	Chemically resistant, heat sealable flexible tubing, 1/8" ID, 1/4" OD	24"	MLL	1	2
3558	3L, 1/4" dip tube with 0.2 µm filter, vent	Chemically resistant, heat sealable flexible tubing, 1/4" ID, 3/8" OD	24"	Male MPC	1	2

MPC = medical plastic coupler, MLL = male Luer lock.

Preassembled Closed System Solutions for Disposable Spinner Flasks

Cat. No.	Description	Tubing	Tubing Length with Connector	Tubing Connection	Qty/Pk	Qty/Cs
3546	1L, preassembled with 3545 transfer cap	Chemically resistant, heat sealable flexible tubing, 1/4" ID, 3/8" OD	24"	Male MPC	1	6
3569	1L, preassembled with 3562 transfer cap	Chemically resistant, heat sealable flexible tubing, 1/8" ID, 1/4" OD	24"	MLL	1	6
3559	3L, preassembled with 3558 transfer cap	Chemically resistant, heat sealable flexible tubing, 1/4" ID, 3/8" OD	24"	Male MPC	1	4
3579	3L, preassembled with 3564 transfer cap	Chemically resistant, heat sealable flexible tubing, 1/8" ID, 1/4" OD	24"	MLL	1	4

MPC = medical plastic coupler, MLL = male Luer lock.

Please contact your local Corning Bioprocess Specialist to discuss individual components.



50 mL centrifuge tubes with MLL dip tube and 0.2 µm filter (Cat. Nos. 11705 and 11706)



500 mL centrifuge tube with MLL dip tube and 0.2 µm filter (Cat. No. 11750)



Transfer cap for roller bottle (Cat. No. 10043)

Preassembled Closed System Solutions for Centrifuge Tubes

Cat. No.	Description	Tubing	Tubing Length with Filter	Tubing Length with Connector	Tubing Connection	Qty/ Pk	Qty/ Cs
11705	50 mL centrifuge tube with dip tube and 0.2 µm filter with MLL/FLL end	Chemically resistant, heat sealable flexible tubing, 1/8" ID, 1/4" OD	4"	18"	MLL	1	2
11706	50 mL centrifuge tube with dip tube and 0.2 µm filter with MLL/FLL end	Chemically resistant, heat sealable flexible tubing, 1/8" ID, 1/4" OD	4"	18"	MLL	1	2
11750	500 mL centrifuge tube with dip tube and 0.2 µm filter with MLL/FLL end	Chemically resistant, heat sealable flexible tubing, 1/8" ID, 1/4" OD and 1/4" ID, 3/8" OD	6"	20"	MLL	1	2

MLL = male Luer lock, FLL = female Luer lock.

Aseptic Transfer Caps for Roller Bottles

Cat. No.	Description	Tubing	Tubing Length with Connector	Tubing Connection	Qty/ Pk	Qty/ Cs
10043	Disposable aseptic transfer cap for roller bottle with 0.2 µm filter	Chemically resistant, heat sealable flexible tubing, 3/8" ID, 5/8" OD	6"	Male MPC	1	2

MPC = medical plastic coupler.

Please contact your local Corning Bioprocess Specialist to discuss individual components.

Corning® Polystyrene Storage Bottles



150 mL Easy Grip storage bottle with dip tube and filter, MPC (Cat. No. 11651)



150 mL Easy Grip storage bottle with dip tube and filter, MLL (Cat. No. 11650)



500 mL Easy Grip storage bottle with dip tube and filter, MPC (Cat. No. 11666)



500 mL Easy Grip storage bottle with dip tube and filter, MLL (Cat. No. 11665)

Cat. No.	Description	Tubing	Tubing Length with Filter	Tubing Length with Connector	Length of the Dip Tube	Tubing Connection	Qty/ Pk	Qty/ Cs
11650	150 mL Easy Grip polystyrene storage bottles with dip tube, with 0.2 µm filter, MLL/FLL	Chemically resistant, heat sealable flexible tubing, 1/8" ID, 1/4" OD and 1/4" ID, 3/8" OD	6"	24"	4.25"	MLL	1	8
11651	150 mL Easy Grip polystyrene storage bottles with dip tube, with 0.2 µm PTFE filter	Chemically resistant, heat sealable flexible tubing, 1/4" ID, 3/8" OD	4"	20"	4.25"	Male MPC	1	8
11655	250 mL Easy Grip polystyrene storage bottles with dip tube, with 0.2 µm filter, MLL/FLL	Chemically resistant, heat sealable flexible tubing, 1/8" ID, 1/4" OD and 1/4" ID, 3/8" OD	6"	24"	5"	MLL	1	6
11656	250 mL Easy Grip polystyrene storage bottles with dip tube, with 0.2 µm PTFE filter	Chemically resistant, heat sealable flexible tubing, 1/4" ID, 3/8" OD	4"	20"	5"	Male MPC	1	6
11665	500 mL Easy Grip polystyrene storage bottles with dip tube, with 0.2 µm filter, MLL/FLL	Chemically resistant, heat sealable flexible tubing, 1/8" ID, 1/4" OD and 1/4" ID, 3/8" OD	6"	24"	5.5"	MLL	1	4
11666	500 mL Easy Grip polystyrene storage bottles with dip tube, with 0.2 µm PTFE filter	Chemically resistant, heat sealable flexible tubing, 1/4" ID, 3/8" OD	4"	20"	5.5"	Male MPC	1	4
11680	1,000 mL Easy Grip polystyrene storage bottles with dip tube, with 0.2 µm filter, MLL/FLL	Chemically resistant, heat sealable flexible tubing, 1/8" ID, 1/4" OD and 1/4" ID, 3/8" OD	6"	24"	7"	MLL	1	4
11681	1,000 mL Easy Grip polystyrene storage bottles with dip tube, with 0.2 µm PTFE filter	Chemically resistant, heat sealable flexible tubing, 1/4" ID, 3/8" OD	4"	20"	7"	Male MPC	1	4

MPC = medical plastic coupler, MLL = male Luer lock, FLL = female Luer lock, PTFE = polytetrafluoroethylene.

Please contact your local Corning Bioprocess Specialist to discuss individual components.

Corning® Single-use Technology

Corning single-use technologies are designed to be practical and cost-effective alternatives to rigid-walled containers. They are fabricated to match your specific application with a variety of sizes and tubing/connector configurations. These containment and delivery systems preserve the physical, chemical, and functional characteristics of sterile and process fluids. All components can be customized to match your requirements



Features and Benefits

- ▶ High quality barrier films
- ▶ Sterile
- ▶ Gas and moisture barriers to minimize transmission of oxygen, carbon dioxide, and water vapor
- ▶ Universal connection systems
- ▶ Reduces costs associated with washing, sterilization, and SIP/CIP validations
- ▶ Reduces the risks associated with cross-contamination
- ▶ Minimal setup time
- ▶ Wide variety of standard configurations
- ▶ Easily integrated in automated systems



Industry Recognized Manufacturing Standards

- ▶ cGMP – is manufactured under a quality system that conforms to the current ISO 13485 and Quality System Regulation (21 CFR 820)
- ▶ Complete documentation and traceability
- ▶ Animal-free manufacturing process

Custom Configuration Options

- ▶ 50 mL to 500L sizes
- ▶ 2D and 3D configurations (pillow and gusseted)
- ▶ Hanging designs
- ▶ Manifold systems
- ▶ Custom tubing and filter assemblies
- ▶ Cryopreservation bags
- ▶ Single-use bags for Corning *HYPERStack*® vessels



Applications

- ▶ Bioreactor and fermentation
- ▶ Media storage and delivery
- ▶ Seed/culture/harvest/recovery
- ▶ Separation
- ▶ Downstream processing
- ▶ Filtration
- ▶ Storage of high purity water
- ▶ Waste containment

Custom Fabrication and Assembly Services

Corning offers extensive custom design services for single-use technologies.



Film Materials

- ▶ Ethyl vinyl acetate (EVA)
- ▶ Ultra-low density polyethylene (ULDPE)
- ▶ ULDPE/Ethylene Vinyl Alcohol (EVOH)
- ▶ Polyethylene (PE)
- ▶ Polyolefin (PO)



Fittings

- ▶ Luer locks
- ▶ CPC connectors
- ▶ Sanitary fitting
- ▶ Hose barbs
- ▶ Spike components
- ▶ Steam-in-place (SIP) connectors



Tubing

- ▶ Chemically resistant, heat sealable flexible tubing
- ▶ Platinum or peroxide cured silicone
- ▶ PVC

Configuration

- ▶ Custom sizes
- ▶ Bottom ports
- ▶ 2D and 3D options
- ▶ Dip tube
- ▶ Recirculation tube

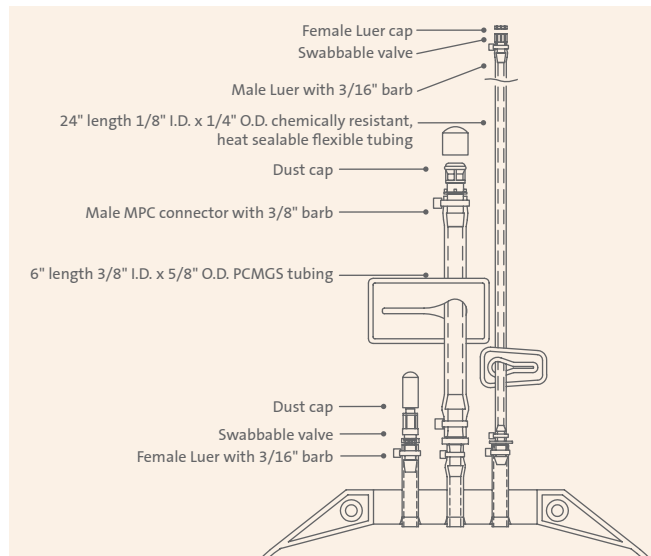


Bag Types Available

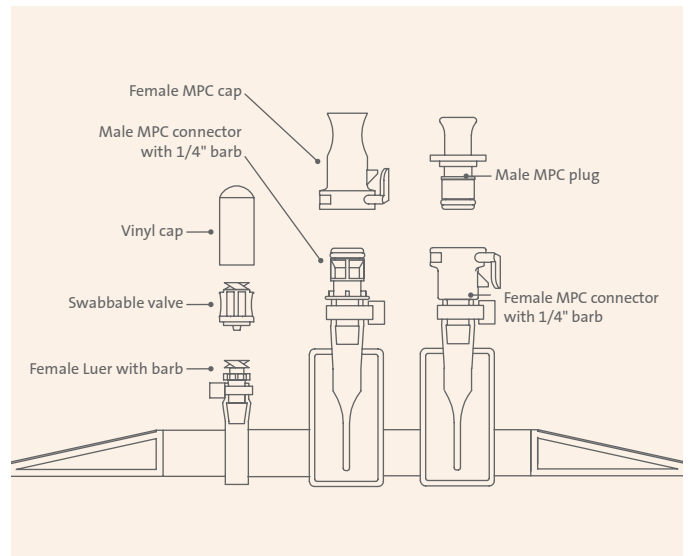
- ▶ Collection bags
- ▶ Tank liners
- ▶ Cryopreservation bags
- ▶ Cell expansion bags
- ▶ Bags for Corning® HYPERStack® vessels
- ▶ Rocker cell culture bags

COLLECTION BAGS

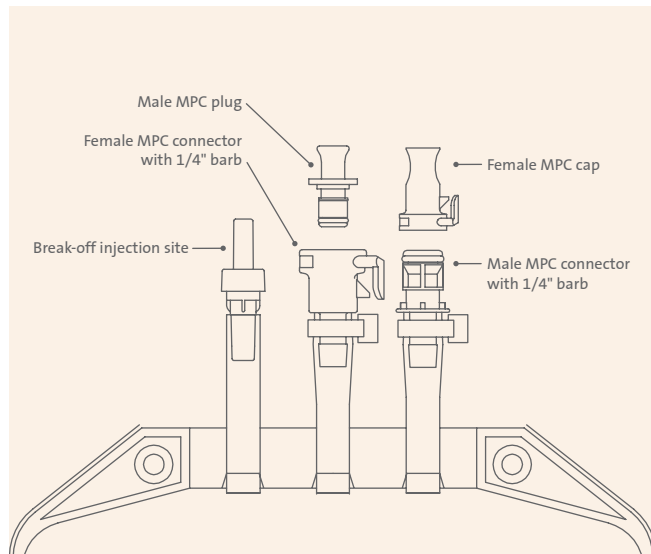
Corning® collection bags are available in 2D hanging configurations with multiple bag volumes and connector configurations.



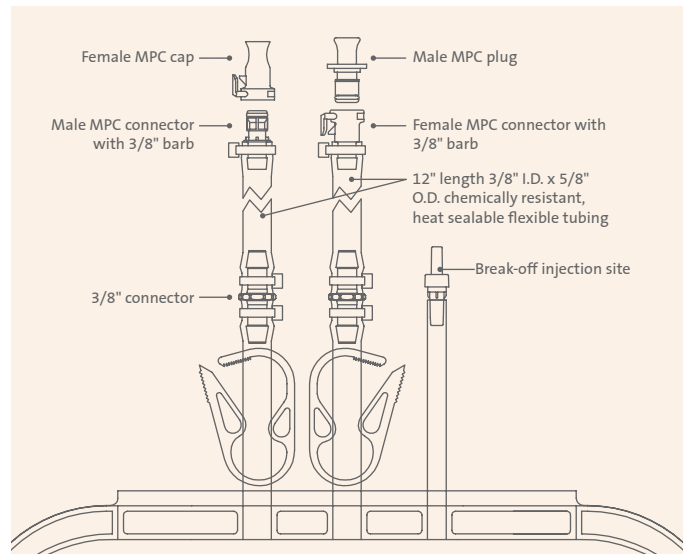
Cat. No.	Film Type	Size	Qty/Pk
91-200-01	EVA	1L	1
91-200-02	EVA	2L	1
91-200-05	EVA	5L	1
91-200-10	EVA	10L	1
91-200-20	EVA	20L	1



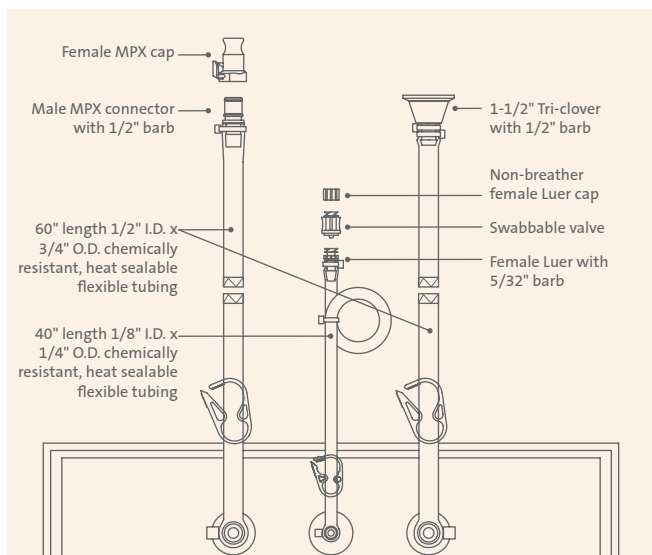
Cat. No.	Film Type	Size	Qty/Pk
91-200-36	EVA	10L	1
91-200-39	EVA	20L	1



Cat. No.	Film Type	Size	Qty/Pk
91-200-41	EVA	500 mL	1
91-200-42	EVA	1L	1



Cat. No.	Film Type	Size	Qty/Pk
91-200-43	EVA	5L	1
91-200-45	EVA	10L	1
91-200-47	EVA	20L	1
91-200-48	EVA	50L	1



Cat. No.	Film Type	Size	Qty/Pk
91-200-82	ULDPE	100L	1
91-200-83	ULDPE	200L	1

CELL EXPANSION BAGS

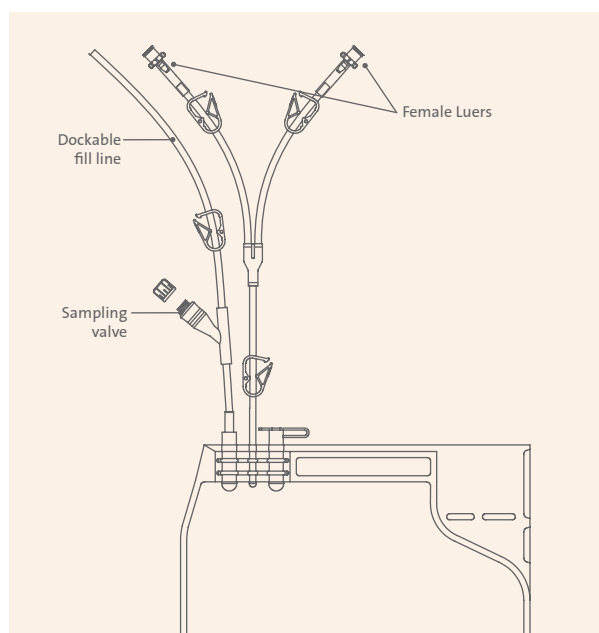
Cell expansion bags are intended for the expansion and culture of non-adherent cells. The bags are made from single-web polyolefin, gas permeable film. The integrated tubing allows for functionally closed system filling, feeding, and sampling.

Features and Benefits

- ▶ Cell expansion observed with multiple cell models
- ▶ Gas permeable film
- ▶ Reusable sampling valve for in-process testing
- ▶ Tubing for sterile weld connections
- ▶ Scalable, user friendly design

Biocompatibility Tests	Result	Test Protocol
USP Class VI	Pass	USP <88>
Toxicity	Nontoxic	USP <87>
Heavy metals	<2 ppm	ISO 3826-1
Buffering capacity	1.22 mL	USP <661>
Non-volatile residue	8.6 mg	USP <661>
Residue on ignition (polyolefins)	<1 mg	ISO 3826-1
Acidity and alkalinity	Pass	ISO 3826-1
Oxidizable constituents	<1.5 mL	ISO 3826-1
Absorbance	<0.2 abs unit	ISO 3826-1
Reducing substances	0.34 mL	EP 3.1.14
Local effects after implantation	Pass	ISO 10993-6
Irritation and delayed-type sensitivity	Pass	ISO 10993-10
Systemic toxicity	Pass	ISO 10993-11

Physical Properties	Result	Test Protocol
O ₂ transmission (cm ³ /100 in ² /24 hrs) at (25°C; 0% RH)	153	ASTM D-3985
CO ₂ transmission (cm ³ /100 in ² /24 hrs) at (25°C; 0% RH)	1183	MOCON Test Method
Moisture vapor transmission (g/100 in ² /24 hrs)	0.94	ASTM D-1249
Transmittance (%)	83	ASTM D-1003
Tensile strength (psi)	3,400/3,700	ASTM D-638
Elastic modulus (E)	540/480	ASTM D-638



Cat. No.	Size	Fill Volume	Qty/Pk
91-200-84	500 mL	190 mL	1
91-200-85	1L	381 mL	1
91-200-86	3 L	633 mL	1
91-200-87	5L	1,252 mL	1

CRYOPRESERVATION BAGS

Cryopreservation bags are designed for storage, preservation, and transfer of cells.

Design Offers

- ▶ Unique bag film material remains flexible at low temperatures (-196°C).
- ▶ Proprietary membrane port design offers thinner walls for increased flexibility and attached cap minimizes membrane exposure during freezing.
- ▶ Industry standard label pocket design offers ease-of-use and traceability in labeling.

Features and Benefits

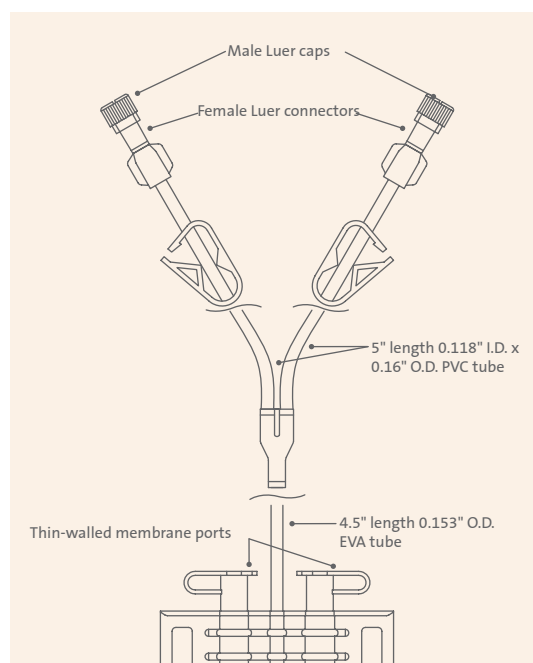
- ▶ Polyolefin film – Proprietary EVA blend specifically selected for its low temperature properties while maintaining flexibility and clarity when filled with liquid.
- ▶ Membrane port – The attached cap snaps into place to protect the contents and minimizes membrane exposure during use.
- ▶ Label pocket – Supports use of computer-generated labels; product information can be viewed quickly by simply opening the freezing cassette
- ▶ Integral fill tube – The unique manufacturing method used to secure the fill tube to the container body eliminates the need for PVC interfaces with the liquid nitrogen storage section of the container.
- ▶ Interface/Connectors – Compatible with sterile connection technology and smart seal technology (Sebra® Model 1100 tube welder); fits in a variety of freezing cassette systems.

Physical Integrity

The physical integrity of the containers were evaluated for their ability to withstand temperature variations experienced during routine storage of hematopoietic progenitor cell products. All containers passed the physical integrity tests performed, which included initial pressure, leak, microbial challenge, and dye immersion tests.

Cell Quality

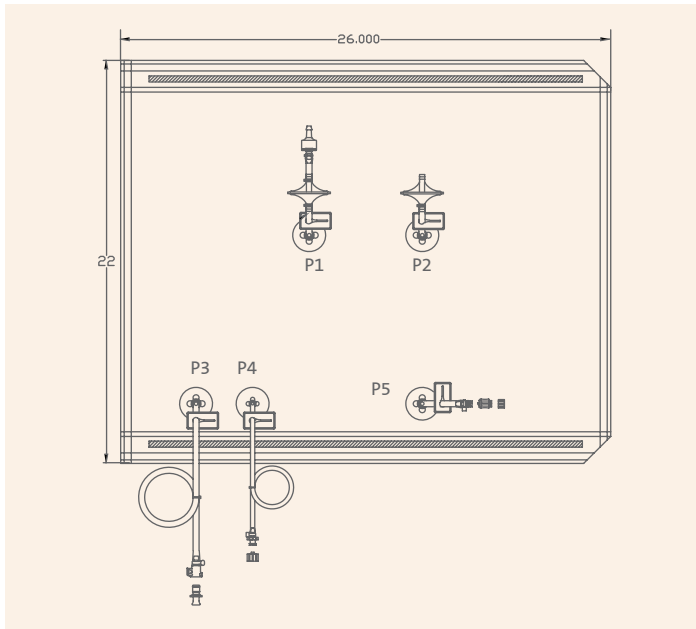
Cell quality was assessed on our cryogenic storage containers using diluted HPC with 10% DMSO. All containers met the acceptance requirement for MNC and CD34+ cell recovery of $\geq 70\%$ relative to cell counts of the sample prior to cryopreservation. The average MNC and CD34+ cell recoveries were 81% and 84%, respectively. All containers met ≥ 1 CFU acceptance criteria with an average of 78% recovery.



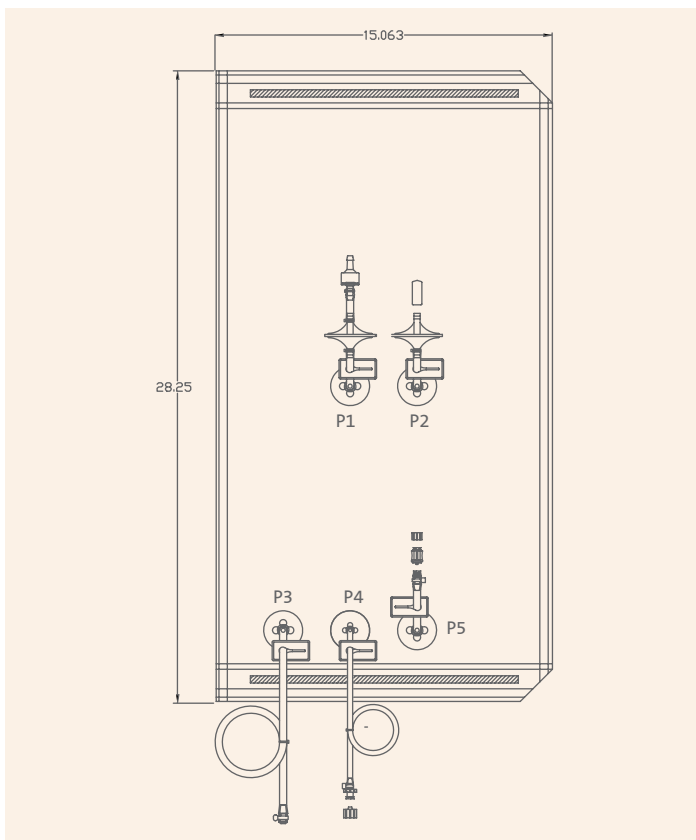
Cat. No.	Size	Fill Volume	Qty/Pk
91-200-88	50 mL	10 - 20 mL	1
91-200-89	250 mL	30 - 70 mL	1
91-200-90	500 mL	55 - 100 mL	1
91-200-91	750 mL	80 - 190 mL	1

ROCKER CELL CULTURE BAGS

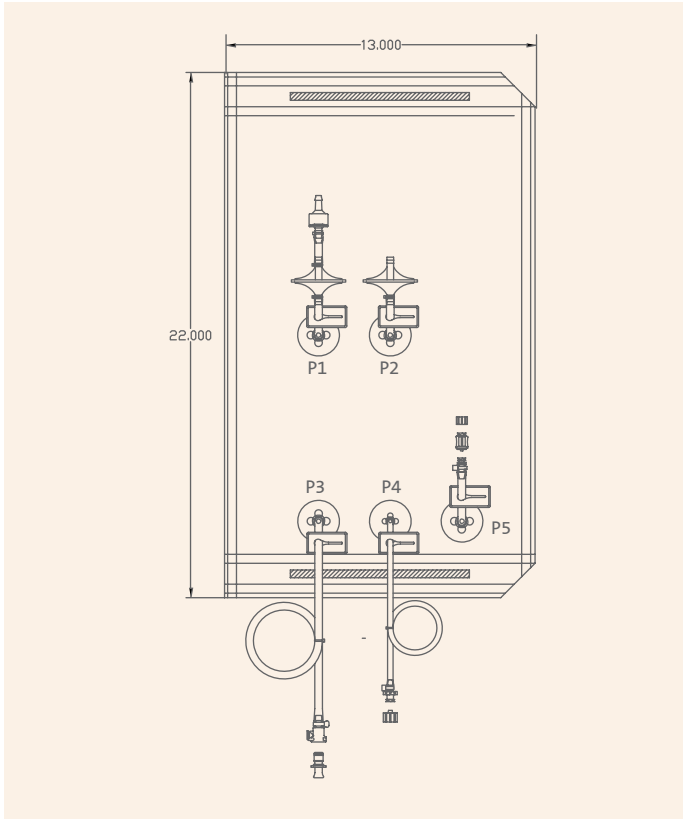
Rocker cell culture bags are designed for use with commercial rocking-motion bioreactor chambers. They feature ethylene vinyl alcohol (EVOH)/ultra-low density polyethylene (ULDPE) 9101 film and stability bars on each side. These sterile, single-use cell culture bags are ideal for applications from basic research to large-scale biopharmaceutical manufacturing.



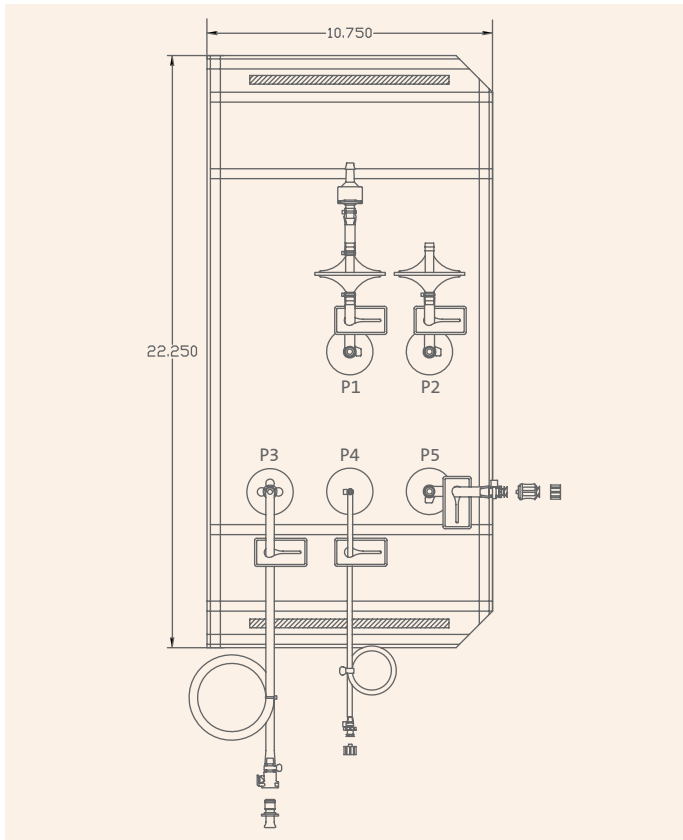
Cat. No.	Size	Qty/Pk
91-200-78	20L	1
P1	Check valve with 1/4" barb PVDF 8004022 filter 2" length 3/16" I.D. x 3/8" O.D. PCMGS tube	
P2	PVDF 8004022 filter 2" length 3/16" I.D. x 3/8" O.D. PCMGS tube	
P3	Female MPC connector with 1/4" barb Male MPC plug 40" length 1/4" I.D. x 7/16" O.D. chemically resistant, heat sealable flexible tube	
P4	Female Luer with 1/4" barb Male Luer plug 40" length 1/8" I.D. x 1/4" O.D. chemically resistant, heat sealable flexible tube	
P5	Female Luer with 1/4" barb Swabbable valve Male Luer plug without stem	



Cat. No.	Size	Qty/Pk
91-200-92	22L	1
P1	Check valve with 1/4" barb PVDF 8004022 filter 2" length 3/16" I.D. x 3/8" O.D. PCMGS tube	
P2	PVDF 8004022 filter 2" length 3/16" I.D. x 3/8" O.D. PCMGS tube	
P3	Plug with 1/4" barb 48" length 1/4" I.D. x 7/16" O.D. chemically resistant, heat sealable flexible tube	
P4	Female Luer with 1/4" barb Male Luer plug 48" length 1/8" I.D. x 1/4" O.D. chemically resistant, heat sealable flexible tube	
P5	Female Luer with 1/4" barb Swabbable valve Male Luer plug without stem	

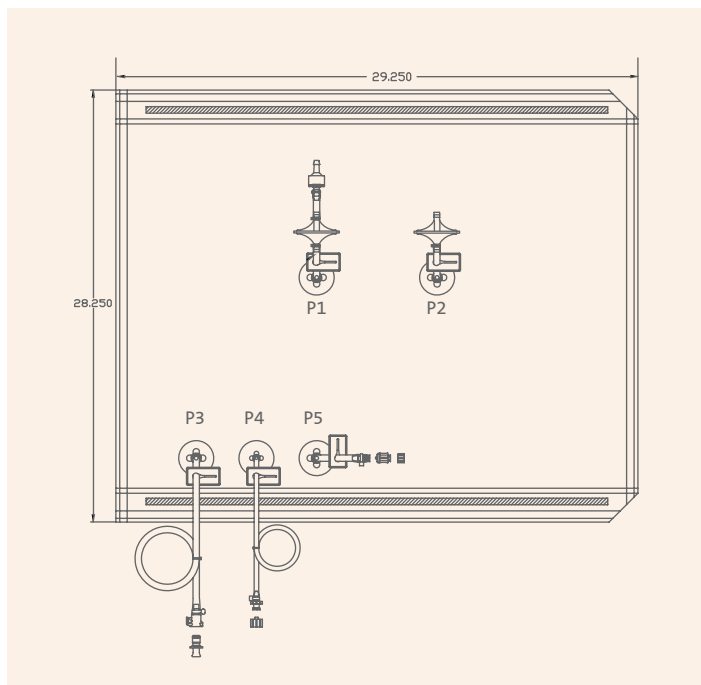


Cat. No.	Size	Qty/Pk
91-200-79	10L	1
P1	Check valve with 1/4" barb PVDF 8004022 filter 2" length 3/16" I.D. x 3/8" O.D. PCMGS tube	
P2	PVDF 8004022 filter 2" length 3/16" I.D. x 3/8" O.D. PCMGS tube	
P3	Female MPC connector with 1/4" barb and plug 40" length 1/4" I.D. x 7/16" O.D. chemically resistant, heat sealable flexible tube	
P4	Female Luer with 1/4" barb and plug 40" length 1/8" I.D. x 1/4" O.D. chemically resistant, heat sealable flexible tube	
P5	Female Luer with 1/4" barb Swabbable valve Male Luer plug without stem	



Cat. No.	Size	Qty/Pk
91-200-80	2L	1
P1	Check valve with 1/4" barb PVDF 8004022 filter 2" length 3/16" I.D. x 3/8" O.D. PCMGS tube	
P2	PVDF 8004022 filter 2" length 3/16" I.D. x 3/8" O.D. PCMGS tube	
P3	Female MPC connector with 1/4" barb Male MPC plug 40" length 1/4" I.D. x 7/16" O.D. chemically resistant, heat sealable flexible tube	
P4	Female Luer with 1/4" barb Male Luer plug 40" length 1/8" I.D. x 1/4" O.D. chemically resistant, heat sealable flexible tube	
P5	Female Luer with 1/4" barb Swabbable valve Male Luer plug without stem	

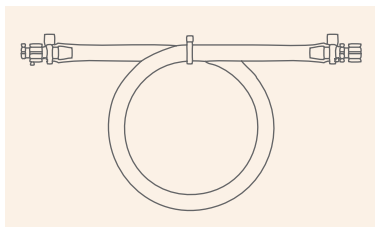
ROCKER CELL CULTURE BAGS (CONTINUED)



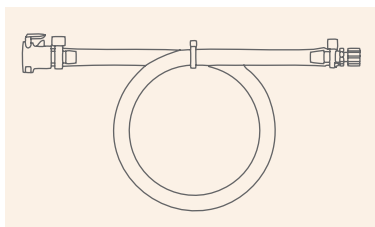
Cat. No.	Size	Qty/Pk
91-200-81	50L	1
Check valve with 1/4" barb P1 PVDF 8004022 filter 2" length 3/16" I.D. x 3/8" O.D. PCMGS tube		
P2 PVDF 8004022 filter 2" length 3/16" I.D. x 3/8" O.D. PCMGS tube		
Female MPC connector with 1/4" barb P3 Male MPC plug 40" length 1/4" I.D. x 7/16" O.D. chemically resistant, heat sealable flexible tubing		
Female Luer with 1/4" barb P4 Male Luer plug 40" length 1/8" I.D. x 1/4" O.D. chemically resistant, heat sealable flexible tubing		
Female Luer with 1/4" barb P5 Swabbable valve Male Luer plug without stem		

TUBING SETS

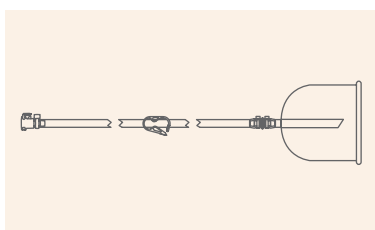
Optional tubing sets are available in combination with all single-use bag options.



Cat. No.	Description	Qty/Pk
91-700-00	36" length 1/4" I.D. clear, chemically resistant, heat sealable, flexible tubing Male Luer and female Luer cap Female Luer and male Luer cap	1



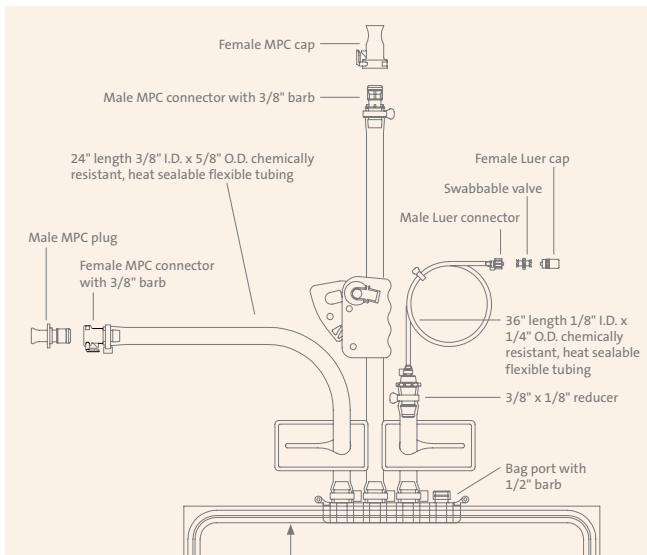
Cat. No.	Description	Qty/Pk
91-700-04	36" length 1/4" I.D. clear, chemically resistant, heat sealable, flexible tubing Female MPC connector Female Luer and male Luer cap	1



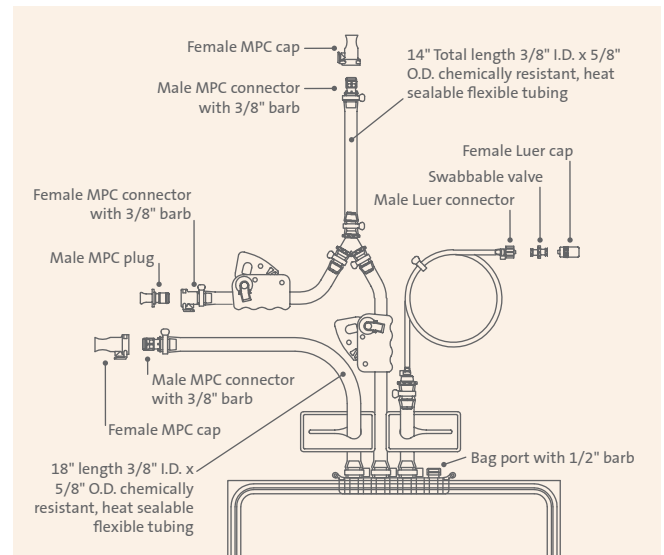
Cat. No.	Description	Qty/Pk
91-700-12	24" length 1/4" I.D. clear, chemically resistant, heat sealable, flexible tubing Female MPC connector with 1/4" barb Pinch clamp Filling bell	1

SINGLE-USE BAGS FOR CORNING® HYPERSTACK® VESSELS

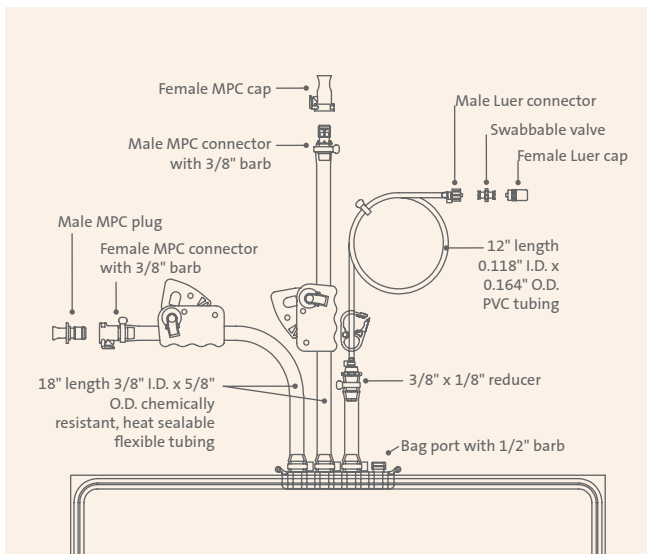
These single-use bags can be connected to tubing by tube welding or by using the pre-assembled multipurpose connectors. They can be used to add media, trypsin, or quenching substrates to culture cells in an entirely closed environment.



Cat. No.	Description	Film Type	Size	Qty/Pk
91-200-75	Trypsin bag	ULDPE	5L	1



Cat. No.	Description	Film Type	Size	Qty/Pk
91-200-76	Quench bag	ULDPE	5L	1



Cat. No.	Description	Film Type	Size	Qty/Pk
91-200-77	Media bag	ULDPE	20L	1

TANK LINERS

Corning's portfolio of sterile tank liners are designed to fit cylindrical tanks. Tank liners are manufactured with ultra-low density polyethylene (ULDPE) and are available in a range of sizes.

Features and Benefits

- ▶ Sterile, individually packaged
- ▶ Animal-free components
- ▶ Reduce costs associated with the cleaning and validation of tanks
- ▶ Reduce labor costs and increase turnaround time
- ▶ Reduce the risks associated with cross-contamination
- ▶ Help extend the life of reusable tanks, resulting in lower capital expenditures
- ▶ Wide variety of sizes

Gusseted Tank Liners (3D)

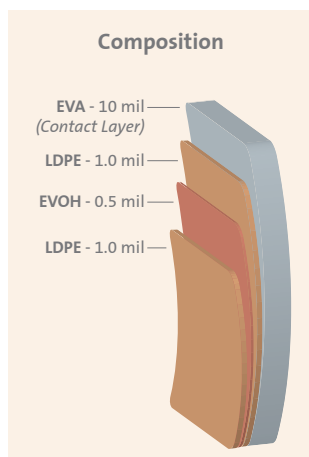
Cat. No.	Max. Volume	Diameter	Approx. Depth	Qty/Pk
91-300-15	50L	13"	27"	1
91-300-25	100L	18"	30"	1
91-300-35	200L	22"	36"	1

Non-gusseted Tank Liners (2D)

Cat. No.	Max. Volume	Diameter	Approx. Depth	Qty/Pk
91-300-20	130L	18"	30"	1
91-300-30	200L	22.5"	36"	1
91-300-80	1090L	42"	49"	1

Ethyl Vinyl Acetate (EVA) Film

12.5 mil co-extrusion film — Collection bags.

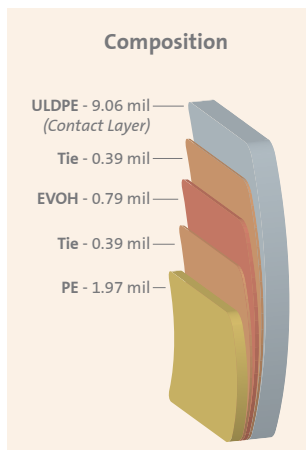


Biocompatibility Tests	Result	Test Protocol
USP intracutaneous reactivity test	Pass	USP <88>
USP acute systemic injection test	Pass	USP <88>
USP intramuscular implantation test	Pass	USP <88>
Toxicity	Nontoxic	USP <87>
Hemolysis	Non-hemolytic	ISO 10993-4
Bacterial endotoxin	<0.015 EU/mL	USP <85>

Physical Properties	Result	Test Protocol
H ₂ O transmission (g/100 in ² /24 hrs)	0.011	ASTM F-1249
CO ₂ transmission (cm ³ /100 in ² /24 hrs)	0.58	MOCN Test Method
O ₂ transmission (cm ³ /100 in ² /24 hrs)	0.28	ASTM F-3985
Ultimate tensile	3,100 psi	ASTM D-638
Ultimate elongation	>650%	ASTM D-638
100% modulus	1,000 psi	ASTM D-638
Tear strength	550 lbs/in.	ASTM D-1004
Low pressure brittleness	>-75°F	ASTM D-1290
Puncture resistance	22.4 lbs.	FTMS 101 B

Ultra-Low Density Polyethylene (ULDPE)/Ethylene Vinyl Alcohol (EVOH) Film

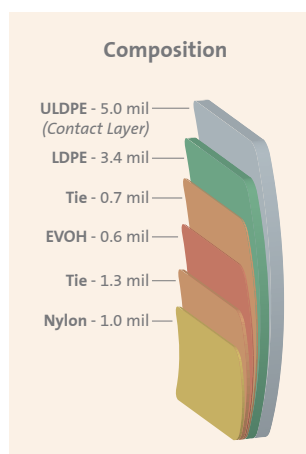
Single-ply multilayer structure with inert PE fluid contact layer.
Film is animal-free—Rocker cell culture bags.



Physical Properties	Result	Test Protocol
Haze (%)	5	ASTM D-1003
Clarity (%)	98	ASTM D-1003
Transmittance (%)	93	ASTM D-1003
Tensile strength at break (Mpa)	14	ASTM D-882
Elongation at break (%)	280	ASTM D-882
Elastic modulus (Mpa)	370	ASTM D-882
Break at cold temperature (°C)	below -45°C	ISO 8570
Density (g/cm ³)	0.9	ASTM D-792
H ₂ O transmission rate g/m ² /24 hrs	0.4 (23°C)	ASTM F-1249
O ₂ permeability cm ³ /m ² /24 hrs	0.1 (23°C, 0% RH)	ASTM D-3985
CO ₂ permeability cm ³ /m ² /24 hrs	<0.2 (23°C, 0% RH)	MOCON Permatran C-IV

Ultra-Low Density Polyethylene (ULDPE) Film

Fluid contact layer is 5.0 mil, ultra-low density polyethylene. Outer film is 5-layer, 7 mil co-extrusion film—Bags for Corning® HYPERStack® vessels, collection bags.

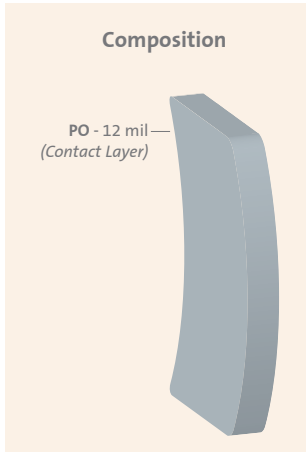


Biocompatibility Tests	Result	Test Protocol
USP intracutaneous reactivity test	Pass	USP <88>
USP acute systemic injection test	Pass	USP <88>
USP intramuscular implantation test	Pass	USP <88>
USP MEM elution method	Nontoxic	USP <87>
Physiochemical test for plastics	Pass	USP <661>

Physical Properties	Result	Test Protocol
H ₂ O transmission (g/100 in ² /24 hrs.)	0.017	ASTM F-1249
CO ₂ transmission (cm ³ /100 in ² /24 hrs.)	0.129	ASTM F-2476
O ₂ transmission (cm ³ /100 in ² /24 hrs.)	0.043	ASTM F-1927

	Average Force	Average MOE	Average Elongation	Test Protocol
Tensile strength	32.73 lbs.	25,110 psi	1,080%	ASTM D 882-02

	Min. Force	Average Force	Max. Force	Test Protocol
Tear resistance	6.77 lbs.	7.21 lbs.	7.74 lbs.	ASTM D1004-07
Puncture resistance	16.42 lbs.	18.61 lbs.	19.51 lbs.	FTMS 101C

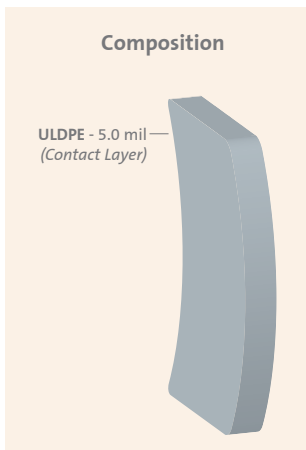


Polyolefin (PO) Film

Single-web, 12 mil polyolefin monolayer designed for extremely low temperatures—Cell expansion bags.

Biocompatibility Tests	Result	Test Protocol
USP Class VI	Pass	USP <88>
Toxicity	Nontoxic	USP <87>
Hemolysis	Non-hemolytic	ISO 10993-4
Heavy metals	Pass	ISO 3826-1; USP <661>
Buffering capacity	Pass	USP <661>
Non-volatile residue	Pass	USP <661>
Residue on ignition	Pass	ISO 3826-1; USP <661>
Local effects after implantation	Pass	ISO 10993-6
Irritation and delayed-type sensitivity	Pass	ISO 10993-10
Systemic toxicity	Pass	ISO 10993-11
Bacterial endotoxin	<20 EU/device	USP <85>

Physical Properties	Result	Test Protocol
H ₂ O transmission g/100 in ² /24 hrs at 25°C	1.1	ASTM F1249
CO ₂ transmission cm ³ /100 in ² /24 hrs at 25°C, 0% RH	1,477	ASTM F2476
O ₂ transmission cm ³ /100 in ² /24 hrs at 25°C, 0% RH	180	ASTM D3985
Tensile strength (Mpa)	17	ASTM D882
Elongation at break, MD/TD (%)	560/700	ASTM D882
Elastic modulus (Mpa)	17	ASTM D882
Break at cold temperature (°C)	Below -80°C	ISO 8570
Glass transition temperature (T _g)	-48°C	DSC
Density (g/cm ³)	0.92	ASTM D792
Low temperature, (remains flexible)	-196°C	--



Tank Liner Film

Biocompatibility Tests	Result	Test Protocol
USP intracutaneous reactivity	Pass	USP <88>
USP acute systemic injection	Pass	USP <88>
USP intramuscular implantation	Pass	USP <88>
Toxicity	Nontoxic	USP <87>
Physiochemical test for plastics	Pass	USP <661>

Physical Properties	Result	Test Protocol
H ₂ O transmission (g/100 in ² /24 hrs)	0.017	ASTM F-1249
CO ₂ transmission (cm ³ /100 in ² /24 hrs)	0.129	ASTM F-2476
O ₂ transmission (cm ³ /100 in ² /24 hrs)	0.043	ASTM F-1927

	Average MOE	Average Elongation	Test Protocol
Tensile strength	5756 psi	710%	ASTM D 882
	Average Force		
Impact strength	2.52 lbs	7.74 lbs.	ASTM D 1709

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