Sterile filtration you can trust.

The life science business of Merck KGaA, Darmstadt, Germany operates as MilliporeSigma in the U.S. and Canada.

Millipore®

Preparation, Separation, Filtration & Monitoring Products

Millipore® – the name you trust for sterile filtration

Millipore® is the brand of choice for sterile filters–for everything from media preparation for your cell culture, to sterilization of critical drug compounds:

Selection

From 1 mL to 20 L, we offer an array of both vacuum- and pressure-driven devices that incorporate our long-trusted membrane technology.

Expertise

With over 50 years of expertise in the sterile filtration business, we set the industry standard for high performance membrane technology and application in sterile filtration.

Innovation

As protocols requiring sterile filtration evolve, we continually qualify our filter systems to provide application-specific data.

Improving on Excellence

Finding ways to enhance the Stericup® bench filter devices that have been trusted in labs worldwide for more than three decades wasn't obvious — but our engineers conceived ingenious ways to make these lab essentials easier to use, and more convenient. We are proud to introduce Stericup® Quick Release filters, refined with you in mind. (see p. 6)

To learn more, please visit:
EMDMillipore.com/sterilefiltration

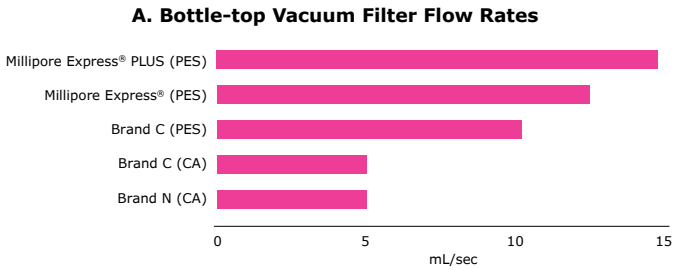
Membrane Technology

Sterile filtration performance is based on the quality of the membranes used. Our Millipore Express® PLUS, Durapore®, MF-Millipore™ and Fluoropore™ brand membranes set the industry standard for their respective properties.

To learn more, please visit:
EMDMillipore.com/membranes

Fit-for-Application Membrane Chemistries

- Fastest flow, low protein-binding of aqueous solutions with Millipore Express® and Express® Plus polyethersulfone (PES) membrane devices
- Fast flow and low protein-binding Mixed Cellulose Esters (MCE)
- Broad chemical compatibility and very low protein-binding polyvinylidene fluoride (PVDF)



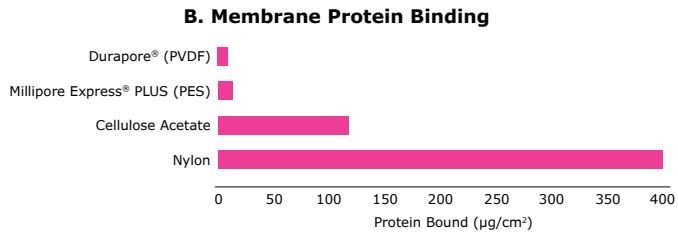


Figure 1.

A. Faster flow with Millipore Express® PLUS membrane. 500 mL of DMEM with 10% FBS was filtered through various vacuum-driven cup devices. CA, cellulose acetate. PES, polyethersulfone.

B. Lowest protein binding with Durapore® PVDF membrane. Membrane disks with a 0.22 µm pore size were offered a 1 mg/mL solution of ^{125}I labeled IgG. The chart shows protein binding after incubation (normalized to membrane surface area).

Table of Contents

What people are saying...

"For over 40 years we've trusted MilliporeSigma to provide the quality filtration tools we need."

James T. Voss, NRRPT, CHP Fellow, Health Physics Society, President of Voss Associates.

"Trusted partners like MilliporeSigma are rare but central to our success."

Dr. Michael West, CEO, BioTime, Inc., Renowned thought leader in stem cell therapeutics

Summary of Sterile Filtration Products

Vacuum filtration devices for cell culture media preparation

Description	Pore Size (µm)	Membrane	Maximum Process Volume	
Stericup® Quick Release Filtration and Storage Units	0.22 0.45	Millipore Express® PLUS (PES), Durapore® (PVDF)	150 mL 250 mL 500 mL 1000 mL	
Stericup® Filtration and Storage Units	0.1 0.22 0.45	Millipore Express® PLUS (PES), Durapore® (PVDF)	150 mL 250 mL 500 mL 1000 mL	
Steritop® Quick Release Bottle-top Filtration Units	0.22	Millipore Express® PLUS (PES)	150 mL 250 mL 500 mL 1000 mL	
Steritop® Bottle-top Filtration Units	0.22	Millipore Express® PLUS (PES), Durapore® (PVDF)	150 mL 250 mL 500 mL 1000 mL	
Steriflip® Filtration Units	0.22 0.45	Millipore Express® PLUS (PES), Durapore® (PVDF), Nylon Net	50 mL	

Syringe filters for cell culture media preparation and small volume filtration

Description	Pore Size (µm)	Membrane	Maximum Process Volume	
Millex® Syringe Filters (4, 13, 25 mm)	0.2 0.22 0.45 0.5	Millipore Express® (PES), Durapore® (PVDF), MCE	1 – 100 mL	
Millex® Syringe Filters (33 mm)	0.1 0.22 0.45 0.8	Millipore Express® PLUS (PES), Durapore® (PVDF), MCE	100 – 200 mL	

Large-scale sterile filtration devices

Description	Pore Size (µm)	Membrane	Maximum Process Volume	
Stericap™ PLUS Vacuum-driven Filters	0.22	Millipore Express® PLUS (PES)	2 – 10 L	
Sterivex® Pressure-driven Filters	0.22 0.45	Millipore Express® PLUS (PES), Durapore® (PVDF)	Up to 2 L	
Millex®-GP 50 mm Pump-driven Filters	0.22	Millipore Express® (PES)	Up to 4 L	
Steripak™ Pump-driven Filters	0.22	Millipore Express® (PES)	10 L 20 L	

Hydrophobic filters for gas filtration

Description	Pore Size (µm)	Inlet-Outlet Fittings	Membrane	
Millex®-FG 25 mm Syringe Filters	0.22	FLL-MLS, FLL-MLL, FLS-MLS, FLL-Spike	Hydrophobic PTFE, Hydrophobic PVDF	
Millex®-FG 50 mm Pump-driven Filters	0.2 0.45 1.0	Stepped Hose Barb with FLS – 1/8 in. NPTM	Hydrophobic PTFE	

FLL = Female Luer-Lok®
FLS = Female Luer slip
MLL = Male Luer-Lok®
MLS = Male Luer slip

Bench-scale Filters

Stericup® & Steritop® Filter Units

Stericup® and Steritop® sterile filtration devices combine superior flow rates and throughput with low non-specific binding and a stable, no-tip design.

Fast flow, low-binding membranes

Membranes with low protein binding ensure that key growth factors and proteins won't be absorbed onto the filter. Millipore Express® PLUS membranes feature low protein binding and faster flow than other membranes. For applications that require ultra-low protein binding, use a device with a Durapore® PVDF membrane.

Designed with the user in mind

The classic Stericup® vacuum filtration system can process and store volumes from 150 mL to 1 L. The reliable filtration, and design features that made Stericup® filters a staple in labs around the world are at the core of our new Stericup® Quick Release filter devices. Novel design features inspired by feedback from cell culture scientists include:

- 'Quick release' filter funnel disconnects from bottle with just a quarter-turn
- Frosted writing surface on the bottle and lighter cap color make labeling easier
- Click-seal cap features a tactile stop, signaling proper closure to protect sterile contents
- Clear labeling on funnel collar and overwrap ensures rapid, accurate filter selection

SigmaAldrich.com/stericupquickrelease

EMDMillipore.com/stericup-quick-release

Applications

- Tissue culture media +/- additives
- Buffers
- Biological solutions

Stericup® Filter Units

Stericup® Filter Units — combine a filter unit with a receiver flask and cap for processing and storage.

Description	Membrane/Application	Pore Size (µm)	Funnel Capacity (mL)	Receiver Bottle (mL)	Qty/Pk	Cat No.
Stericup®-GP Quick Release Filter Units†	Millipore Express® PLUS (PES)/fast filtration of tissue culture media and buffers	0.22	150	150	12	**S2GPU01RE**
			250	250	12	**S2GPU02RE**
			500	500	12	**S2GPU05RE**
			500	1000	12	**S2GPU10RE**
			1000	1000	12	**S2GPU11RE**
Stericup®-HV Quick Release Filter Units	Durapore®(PVDF)/filtration of high value biomolecules, lowest protein binding		150	150	12	**S2HVU01RE**
			250	250	12	**S2HVU02RE**
			500	500	12	**S2HVU05RE**
			500	1000	12	**S2HVU10RE**
			1000	1000	12	**S2HVU11RE**
Stericup®-VP Filter Units	Millipore Express® (PES) / removal of mycoplasma*	0.1	250	250	12	**SCVPU02RE**
			1000	1000	12	**SCVPU11RE**
Stericup®-GV Filter Units	Durapore® (PVDF) / filtration of high value biomolecules, lowest protein binding	0.22	150	150	12	**SCGVU01RE**
			250	250	12	**SCGVU02RE**
			500	500	12	**SCGVU05RE**
			500	1000	12	**SCGVU10RE**
			1000	1000	12	**SCGVU11RE**

* 0.10 µm pore size is designed to enhance maximum filtration of tissue culture media but it is not a guarantee of complete mycoplasma removal.

† Selected stem cell research publications citing Stericup® or Steritop® device for sterile filtration of medium:

1. Feeder independent culture of human embryonic stem cells. Teneille E. Ludwig et al. Nature Methods Vol. 3 No. 8 August 2006 637-646.
2. Roelandt P et al. Differentiation of rat multipotent adult progenitor cells to functional hepatocyte-like cells by mimicking embryonic liver development. Nat Protoc. 2010 Jul;5(7):1324-36.
3. Hu BY et al. Differentiation of human oligodendrocytes from pluripotent stem cells. Nat Protoc. 2009;4(11):1614-22. Epub 2009 Oct 15.
4. Hu BY, Zhang SC. Differentiation of spinal motor neurons from pluripotent human stem cells. Nat Protoc. 2009;4(9):1295-304.
5. Bigdeli N et al. Adaptation of human embryonic stem cells to feeder-free and matrix-free culture conditions directly on plastic surfaces. J Biotechnol. 2008 Jan 1;133(1):146-53.
6. Dravid G et al. Culture of human embryonic stem cells on human and mouse feeder cells. Methods Mol Biol. 2006;331:91-104.

Steritop® Filter Units

Steritop® bottle-top filter units can be used on bottles with 33 mm or 45 mm openings.

Description	Membrane/Application	Pore Size (µm)	Funnel Capacity (mL)	Receiver Bottle (mL)	Qty/Pk	Cat No.
Steritop® QR Quick Release Filter Units†	Millipore Express® PLUS (PES)/fast filtration of tissue culture media and buffers	0.22	150	45	12	**S2GPT01RE**
			250	45	12	**S2GPT02RE**
			500	45	12	**S2GPT05RE**
			1000	45	12	**S2GPT10RE**
Steritop®-GP Filter Units	Millipore Express® PLUS (PES) / filtration of high value biomolecules, lowest protein binding	0.22	150	33	12	**SCGPS01RE**
			250	33	12	**SCGPS02RE**
			500	33	12	**SCGPS05RE**
Steritop®-GV Filter Units	Durapore® (PVDF) / filtration of high value biomolecules, lowest protein binding	0.22	500	45	12	**SCGVT05RE**
Click Seal Receiver Bottles and Caps			250	45	12	**S200B02RE**
			500	45	12	**S200B05RE**
			1000	45	12	**S200B10RE**

* 0.10 µm pore size is designed to enhance maximum filtration of tissue culture media but it is not a guarantee of complete mycoplasma removal.

† Selected stem cell research publications citing Stericup® or Steritop® device for sterile filtration of medium:

1. Feeder independent culture of human embryonic stem cells. Teneille E. Ludwig et al. Nature Methods Vol. 3 No. 8 August 2006 637-646.
2. Roelandt P et al. Differentiation of rat multipotent adult progenitor cells to functional hepatocyte-like cells by mimicking embryonic liver development. Nat Protoc. 2010 Jul;5(7):1324-36.
3. Hu BY et al. Differentiation of human oligodendrocytes from pluripotent stem cells. Nat Protoc. 2009;4(11):1614-22. Epub 2009 Oct 15.
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6. Dravid G et al. Culture of human embryonic stem cells on human and mouse feeder cells. Methods Mol Biol. 2006;331:91-104.

Steriflip® Filter Units

For filtering 10 mL to 50 mL volumes without sample transfer steps.

Filter up to 50 mL directly into a centrifuge tube

- Attach the device to a standard 50 mL centrifuge tube containing your sample, flip it over, and apply vacuum
- Filtrate collects in the attached 50 mL tube
- Available with optional funnel accessory

Description	Membrane	Pore Size (µm)	Qty/Pk	Cat No.
Steriflip®-GP Filter Unit	Millipore Express® PLUS (PES)	0.22	25	**SCGP00525**
Steriflip®-GV Filter Unit	Durapore® (PVDF)	0.22	25	**SE1M179M6**
Steriflip®-HV Filter Unit	Durapore® (PVDF)	0.45	25	**SE1M003M00**
Steriflip® Steri-Strainer	Nylon Net	100	25	**SCNY00100**
		60	25	**SCNY00060**
		40	25	**SCNY00040**
		20	25	**SCNY00020**
Accessory				
Steriflip® Funnel Attachment	25			**SC50FL025**

Millex® Syringe Filters

Millex® syringe filters provide convenient sterilization of small volumes and are ideal for solutions such as antibiotics and tissue culture additives. Their unsurpassed quality and consistency of results has led to the development of many sample preparation methods that specify Millex® filters.

Manufactured for reliable performance

Manufacturing occurs in a controlled environment using an automated process. Sterile devices are provided with a certificate of quality.

Faster flow rate

33 mm Millex® filters have 20% more filter surface than 25 mm filters for significantly higher flow rate and throughput.

Higher operating pressure

With a maximum housing pressure of 150 psig (10 bar), solutions can be filtered faster.

Low extractables, low binding

A variety of membranes and housings ensure chemical compatibility with a range of samples and solvents.

Millex® Syringe Filters — Sterilized and individually packaged.

Description	Pore Size (µm)	Type	Process Volume	Hold-up Volume (after air purge)	Sterilization Method?	Qty/Pk	Cat No.
4 mm Diameter							
Durapore® (PVDF) Membrane	0.22	GV	1 mL	< 10 µL	EO	100	**SLGV004SL**
	0.45	HV	1 mL	< 10 µL	EO	100	**SLHV004SL**
13 mm Diameter							
Hydrophilic PTFE Membrane	0.2	LG	10 mL	< 25 µL	EO	100	**SLLG013SL**
Durapore® (PVDF) Membrane	0.22	GV	10 mL	< 25 µL	EO	100	**SLGV013SL**
	0.45	HV	10 mL	< 25 µL	EO	100	**SLHV013SL**
25 mm Diameter							
Durapore® (PVDF) Membrane	5	SV	100 mL	< 100 µL	EO	50	**SLSV025LS**
Millipore Express® (PES) Membrane	0.22	GP	100 mL	< 100 µL	EO	50	**SLMP025SS**
Millipore Express® (PES) Membrane with male Luer-Lok® outlet	0.22	GP	100 mL	< 100 µL	EO	50	**SLMPL25SS**
Mixed Cellulose Esters (MCE) Membrane with male Luer-Lok® outlet	0.22	OR	100 mL	< 100 µL	EO	50	**SLGL0250S**
Mixed Cellulose Esters (MCE) Membrane with vented inlet	0.22	GS	100 mL	< 100 µL	EO	50	**SLGSV255F**
Mixed Cellulose Esters (MCE)	0.8	AA	100 mL	<100 µL	EO	50	**SLAAV255F**
Hydrophilic PTFE Membrane	0.2	LG	100 mL	< 100 µL	EO	50	**SLLG025SS**
Glass Filter for Prefiltration	NA	AP	100 mL	<100 µL	Autoclavable	50	**SLAP02550**
33 mm Diameter							
Millipore Express® PLUS (PES) Membrane	0.22	GP	200 mL	< 100 µL	RS	50	**SLGP033RS**
Fast flow and low binding for cell culture media preparation						250	**SLGP033RB**
						1000	**SLGP033RK**
	0.45	GP	200 mL	< 100 µL	RS	50	**SLHP033RS**
						250	**SLHP033RB**
Durapore® (PVDF) Membrane	0.1	VV	100 mL	< 100 µL	RS	50	**SLVV033RS**
Lowest binding membrane for protein rich solutions	0.22	GV	100 mL	< 100 µL	RS	50	**SLGV033RS**
						250	**SLGV033RB**
						1000	**SLGV033RK**
	0.45	HV	100 mL	< 100 µL	RS	50	**SLHV033RS**
						250	**SLHV033RB**
						1000	**SLHV033RK**
Mixed Cellulose Esters (MCE) Membrane	0.22	GS	100 mL	< 100 µL	EO	50	**SLGS033SS**
Most referenced general purpose membrane						250	**SLGS033SB**
	0.45	HA	100 mL	< 100 µL	EO	50	**SLHA033SS**
						250	**SLHA033SB**
	0.8	AA	100 mL	< 100 µL	EO	50	**SLAA033SS**
						250	**SLAA033SB**

†EO = ethylene oxide; RS = radiosterilized

Large-scale Sterile Filtration Devices

Sterivex® Filters

Pressure-driven devices for filtering up to 2 L

Sterivex® filter units work with syringes, peristaltic pumps, or pressure vessels, and are designed to dispense into any storage container.

Description	Process Volume	Membrane	Pore Size (µm)	Fitting Outlet	Qty/Pk	Cat No.
Sterivex®-GP Filter Units						
Sterivex®-GP Filter Unit	2000 mL	Millipore Express® PLUS (PES)	0.22	Filling Bell	10	SVGPB1010
				Male Luer-Lok®	15	SVGPL10RC
				Male Nipple	15	SVGP01015
					50	SVGP01050
Sterivex®-GV Filter Units						
Sterivex®-GV Filter Unit	1000 mL	Durapore® (PVDF)	0.22	Filling Bell	10	SVGVB1010
				Male Luer-Lok®	15	SVGVL10RC
				Male Nipple	15	SVGV01015
					50	SVGV010RS
Sterivex®-HV Filter Units						
Sterivex®-HV Filter Unit	1000 mL	Durapore® (PVDF)	0.45	Filling Bell	10	SVHVB1010
				Male Luer-Lok®	15	SVHVL10RC
				Male Nipple	15	SVHV01015
					50	SVHV010RS

Stericap™ PLUS Filters

Universal bottle-top devices for filtering 2 to 10 L

- Fits on any vacuum-rated bottle, 20 to 67 mm in diameter
- Vented to help prevent filter air lock
- Features fast-flowing, low protein binding Millipore Express® PLUS membrane
- Ideal for fast sterilization of tissue culture media, serum, buffers, or other biological solutions

Description	Membrane	Pore Size (µm)	Qty/Pk	Cat No.
Stericap™ PLUS Filter	Millipore Express® PLUS (PES)	0.22	10	**SCGPCAPRE**

Millex®-GP 50 mm Pump-Driven Filters

Sterilized and individually packed

Description	Pore Size (µm)	Type	Process Volume	Hold-up Volume (after air purge)	Sterilization Method?	Qty/Pk	Cat No.
50 mm Diameter							
Millipore Express® (PES) Membrane	0.22	GP50	4000 mL	< 1 mL	RS	10	SLGP05010
		GP50 with filling bell				10	SLGPB5010
Glass Filter for Prefiltration	NA	AP	4000 mL	<1 mL	Autoclavable	10	SLAP05010

†EO = ethylene oxide

Steripak™ Filters

Pump-driven filters for volumes up to 20 L

Steripak™ filters are designed for larger scale pressure-driven filtration of tissue culture media, with or without serum. The units are single-use and come in two volume sizes. They are supplied sterile and ready to connect to a pump or pressure vessel.

Description	Membrane	Pore Size (µm)	Filter area, cm^2	Qty/Pk	Cat No.
Steripak™-GP10 Filter	Millipore Express® (PES)	0.22	100	3	**SPGPM10RJ**
Steripak™-GP20 Filter	Millipore Express® (PES)	0.22	200	3	**SPGPM20RJ**

Hydrophobic Filters for Gas Filtration

Description	Application	Pore Size (µm)	Sterility	Inlet-Outlet Fitting	Qty/Pk	Cat No.
25 mm Diameter Filters						
Hydrophobic PTFE	Vacuum line protection and gas filtration	0.2	Ethylene oxide	FLL-MLS	50	**SLFG025LS**
				FLL-MLL	50	**SLFGL25BS**
			Non-Sterile	FLL-MLS	50	**SLFG02550**
Hydrophobic PVDF	Transducer protector	0.22	Ethylene oxide	FLL-MLS	50	**SLGVS25PS**
				FLL-MLL	50	**SLGVS25US**
				FLL-MLL	50	**SLGVS25XS**
				FLL-Spike	50	**SLGVS25LS**
Pump-driven Millex®-FG50 50 mm Diameter Filters						
Hydrophobic PTFE	Vacuum line protection and gas filtration	0.2	Non-Sterile	Stepped Hose Barb with FLS	10	**SLFG05010**
					100	**SLFG05000**
				Stepped Hose Barb with FLS – 1/8 in. NPTM	10	**SLFG55010**
					100	**SLFG65000**
				1/8 in. NPTM	10	**SLFG75010**
					100	**SLFG75000**
		0.45	Non-Sterile	Stepped Hose Barb with FLS	10	**SLFH05010**
					100	**SLFH05000**
		1.0	Non-Sterile	Stepped Hose Barb with FLS	100	**SLFA05000**

FLL = Female Luer-Lok®
FLS = Female Luer slip
MLL = Male Luer-Lok®
MLS = Male Luer slip

Related Products: Multiwell Plates

Microporous Membrane-Based Cell Culture

Millicell® products promote natural cell growth and incorporate unique design features to improve flexibility in today's laboratories. Unlike cells grown on plastic plates, membrane-supported cell cultures are able to access media from both their apical and basolateral sides, resulting in cell morphology that mimics cells grown *in vivo*.

Description	Membrane	Pore Size (µm)	Device Size	Qty/Pk	Cat No.
Millicell® 24-Well Cell Culture Plate Assemblies	PCF	0.4	24-well cell culture plate, single-well feeder tray, 24-well receiver tray, and lid	1	**PSHT010R1**
	PET	1			**PSRP010R1**
	PCF	3			**PSST010R1**
	PCF	5			**PSMT010R1**
	PCF	8			**PSET010R1**
	PCF	3	24-well cell culture plate, 24-well receiver tray, and lid	5	**PSST010R5**
	PCF	5			**PSMT010R5**
	PCF	8			**PSET010R5**
	PCF	0.4	24-well cell culture plate, single-well feeder tray, and lid	5	**PSHT010R5**
	PET	1			**PSRP010R5**
Millicell® 96-Well Cell Culture Plate Assemblies	PCF	0.4	96-well cell culture plate, single-well feeder tray, 96-well receiver tray, and lid	1	**PSHT004R1**
	PET	1			**PSRP004R1**
	PCF	0.4	96-well cell culture plate, 96-well receiver tray, and lid	5	**PSHT004S5**
	PCF	0.4	96-well cell culture plate, single-well feeder tray, and lid	5	**PSHT004R5**
	PET	1			**PSRP004R5**
Accessories					
24-Well Receiver Trays with Lids				5	**PSMW010R5**
Single-Well Receiver Trays with Lids				5	**PSSW010R5**
96-Well Receiver Trays with Lids				5	**MACAC0RS5**
Millicell® ERS-2 Voltohmmeter				1	**MERS00002**
Replacement Electrodes				1 pair	**MERSSTX01**

Everything from media preparation for your cell culture to sterilization of critical drug compounds

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Filtration & Monitoring Products

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For other countries across Europe and the world, please visit: **EMDMillipore.com/offices**
For Technical Service, please visit: **EMDMillipore.com/techservice**

PB3166EN00 Ver. 2.0
2018-15241
09/2018