

Filtration

Syringe Filters, Spin Filters, Well Filter Plates, Filter Vials,
Membrane Filter Disc and Vacuum Filtration Systems

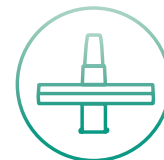


Different Filter Membrane Materials
(CA, CME, GF, NC, PA, PES, PP, PTFE,
PTFE Hydrophilic, PVDF, RC)
Pore sizes from 0.20 μm up to 5.00 μm

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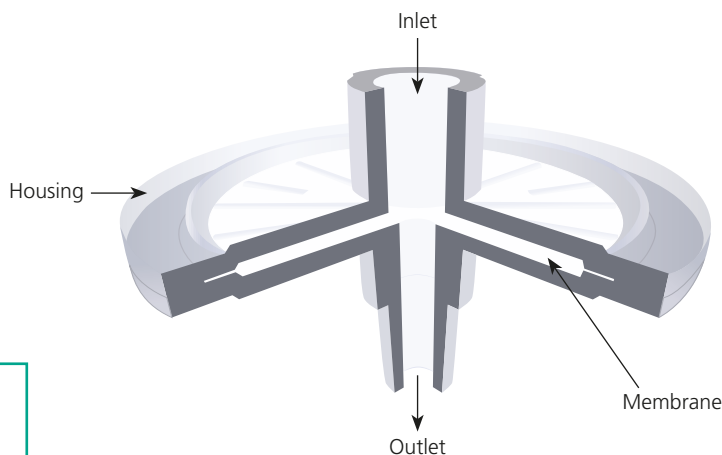
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Syringe Filters

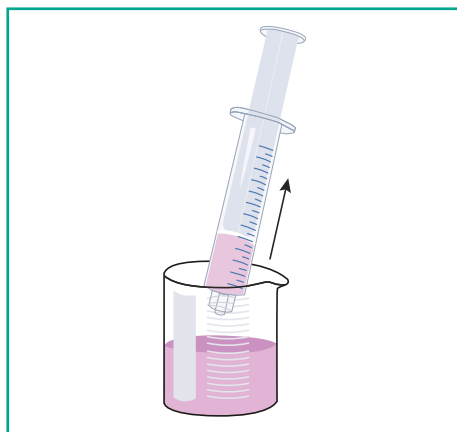


What is a Syringe Filter?

A syringe filter is a membraned single-use device used together with a disposable syringe to remove particulate impurities from liquid samples by pressure filtration. Especially in laboratories, syringe filters are used for fast and effective material purification, filtration or bacteria removal. A big advantage compared to other filtration methods is the low dead volume that remains in the syringe filter. The Syringe filter housings are manufactured from low-extractable and solvent-resistant polypropylene resins for a wide compatibility with common Chromatography solvents and sample matrices.

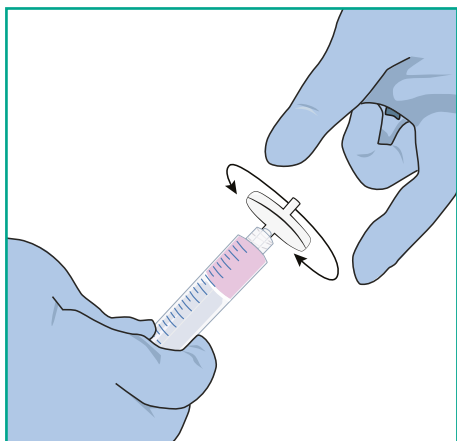


How to use a Syringe Filter



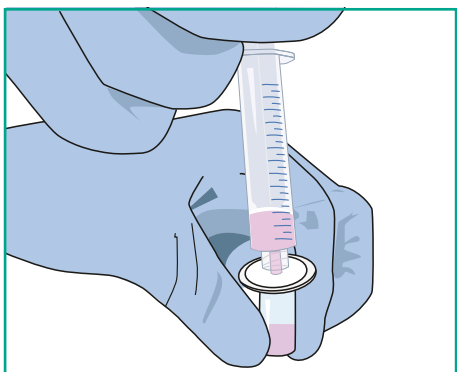
Load

When you have selected the appropriate syringe filter and syringe for your application, first draw the sample into the syringe.



Assemble

Attach the filter to the male luer/luer lock port of the syringe by twisting the female luer lock end of the filter. It is important to ensure that the filter is correctly attached to the syringe tip. After attaching the syringe filter, press a few drops of the sample into the filter.



Filter

Inject the sample into the vial by applying gentle pressure. If you want to empty the syringe filter to maximise sample throughput or for disposal, remove the syringe from the filter and fill the syringe with air. Reattach the filter to the air-filled syringe and push some of the air through the filter to empty the internal volume.

High Quality Syringe Filters



	Polypropylene (PP)	Polypropylene (PP)	Polypropylene (PP)
Housing	Polypropylene (PP)	Polypropylene (PP)	Polypropylene (PP)
Diameter	25 mm	13 mm	4 mm
Filtration Area	4.08 cm ²	1.09 cm ²	0.125 cm ²
Holdup Volume	<100 µl	<20 µl	<5 µl
Sample Volume	<100 ml	<10 ml	<1 ml
Inlet Connection	Luer Lock Female	Luer Lock Female	Luer Lock Female
Outlet Connection	Luer Tip Male	Luer Tip Male	Luer Tip Male
Max. Operating Pressure	6 bar (87 psi)	6 bar (87 psi)	6 bar (87 psi)

Membrane

Nylon

(Polyamide)

Part No.	Diameter	Pore Size	Qty.
SF2503-1	25 mm	0.22 µm	pk.100
SF2503-2	25 mm	0.45 µm	pk.100
SF2503-3	25 mm	1.00 µm	pk.100
SF2503-4	25 mm	5.00 µm	pk.100
SF1303-1	13 mm	0.22 µm	pk.100
SF1303-2	13 mm	0.45 µm	pk.100
SF1303-3	13 mm	1.00 µm	pk.100
SF1303-4	13 mm	5.00 µm	pk.100
SF0403-1	4 mm	0.22 µm	pk.200
SF0403-2	4 mm	0.45 µm	pk.200

Nylon + GF

(Polyamide with
1.00 µm Glass Fiber Prefilter)

SF2503-1G	25 mm	0.22 µm	pk.100
SF2503-2G	25 mm	0.45 µm	pk.100
SF1303-1G	13 mm	0.22 µm	pk.100
SF1303-2G	13 mm	0.45 µm	pk.100

PTFE (Hydrophobic)

(Polytetrafluoroethylene)

SF2504-1	25 mm	0.22 µm	pk.100
SF2504-2	25 mm	0.45 µm	pk.100
SF2504-3	25 mm	1.00 µm	pk.100
SF2504-4	25 mm	5.00 µm	pk.100
SF1304-1	13 mm	0.22 µm	pk.100
SF1304-2	13 mm	0.45 µm	pk.100
SF1304-3	13 mm	1.00 µm	pk.100
SF1304-4	13 mm	5.00 µm	pk.100
SF0404-1	4 mm	0.22 µm	pk.200
SF0404-2	4 mm	0.45 µm	pk.200

PTFE (Hydrophobic) + GF

(Polytetrafluoroethylene with
1.00 µm Glass Fiber Prefilter)

SF2504-1G	25 mm	0.22 µm	pk.100
SF2504-2G	25 mm	0.45 µm	pk.100
SF1304-1G	13 mm	0.22 µm	pk.100
SF1304-2G	13 mm	0.45 µm	pk.100

PTFE (Hydrophilic)

(Polytetrafluoroethylene)

SF2509-1	25 mm	0.22 µm	pk.100
SF2509-2	25 mm	0.45 µm	pk.100
SF1309-1	13 mm	0.22 µm	pk.100
SF1309-2	13 mm	0.45 µm	pk.100
SF0409-1	4 mm	0.22 µm	pk.200
SF0409-2	4 mm	0.45 µm	pk.200



HPLC Certified Plastic Disposable Syringes
see page 7

Membrane	Part No.	Diameter	Pore Size	Qty.
PP (Polypropylene)	SF2506-1	25 mm	0.22 µm	pk.100
	SF2506-2	25 mm	0.45 µm	pk.100
	SF1306-1	13 mm	0.22 µm	pk.100
	SF1306-2	13 mm	0.45 µm	pk.100
PP + GF (Polypropylene with 1.00 µm Glass Fiber Prefilter)	SF2506-1G	25 mm	0.22 µm	pk.100
	SF2506-2G	25 mm	0.45 µm	pk.100
	SF1306-1G	13 mm	0.22 µm	pk.100
	SF1306-2G	13 mm	0.45 µm	pk.100
PVDF (Polyvinylidene difluoride)	SF2505-1	25 mm	0.22 µm	pk.100
	SF2505-2	25 mm	0.45 µm	pk.100
	SF1305-1	13 mm	0.22 µm	pk.100
	SF1305-2	13 mm	0.45 µm	pk.100
	SF0405-1	4 mm	0.22 µm	pk.200
	SF0405-2	4 mm	0.45 µm	pk.200
PVDF + GF (Polyvinylidene difluoride with 1.00 µm Glass Fiber Prefilter)	SF2505-1G	25 mm	0.22 µm	pk.100
	SF2505-2G	25 mm	0.45 µm	pk.100
	SF1305-1G	13 mm	0.22 µm	pk.100
	SF1305-2G	13 mm	0.45 µm	pk.100
PES (Polyethersulfone)	SF2507-1	25 mm	0.22 µm	pk.100
	SF2507-2	25 mm	0.45 µm	pk.100
	SF1307-1	13 mm	0.22 µm	pk.100
	SF1307-2	13 mm	0.45 µm	pk.100
	SF0407-1	4 mm	0.22 µm	pk.200
	SF0407-2	4 mm	0.45 µm	pk.200
PES + GF (Polyethersulfone with 1.00 µm Glass Fiber Prefilter)	SF2507-1G	25 mm	0.22 µm	pk.100
	SF2507-2G	25 mm	0.45 µm	pk.100
	SF1307-1G	13 mm	0.22 µm	pk.100
	SF1307-2G	13 mm	0.45 µm	pk.100
CME (Cellulose Mixed Esters)	SF2501-1ME	25 mm	0.22 µm	pk.100
	SF2501-2ME	25 mm	0.45 µm	pk.100
	SF1301-1ME	13 mm	0.22 µm	pk.100
	SF1301-2ME	13 mm	0.45 µm	pk.100
CME + GF (Cellulose Mixed Esters with 1.00 µm Glass Fiber Prefilter)	SF2501-1MEG	25 mm	0.22 µm	pk.100
	SF2501-2MEG	25 mm	0.45 µm	pk.100
	SF1301-1MEG	13 mm	0.22 µm	pk.100
	SF1301-2MEG	13 mm	0.45 µm	pk.100
CA (Cellulose Acetate)	SF2502-1	25 mm	0.22 µm	pk.100
	SF2502-2	25 mm	0.45 µm	pk.100
	SF1302-1	13 mm	0.22 µm	pk.100
	SF1302-2	13 mm	0.45 µm	pk.100
	SF0402-1	4 mm	0.22 µm	pk.200
	SF0402-2	4 mm	0.45 µm	pk.200
GF (Glass Fiber)	SF2500-07	25 mm	0.70 µm	pk.100
	SF2500-10	25 mm	1.00 µm	pk.100
	SF1300-07	13 mm	0.70 µm	pk.100
	SF1300-10	13 mm	1.00 µm	pk.100

Chemical Compatibility Chart




see page 20–21

High Quality Syringe Filters



			
Housing	Polypropylene (PP)	Polypropylene (PP)	Polypropylene (PP)
Diameter	30 mm	25 mm	17 mm
Filtration Area	4.91 cm ²	3.7 cm ²	1.33 cm ²
Holdup Volume	<137 µl	<100 µl	<29 µl
Sample Volume	<100 ml	<100 ml	<10 ml
Inlet Connection	Luer Lock Female	Luer Lock Female	Luer Lock Female
Outlet Connection	Luer Tip Male	Luer Tip Male	Luer Tip Male
Max. Operating Pressure	6.2 bar (90 psi)	5 bar (72 psi)	7.9 bar (115 psi)







30 mm

				
Color	blue	yellow	grey	brown
Membrane	PTFE/ Glass Fiber Prefilter	PTFE/ Glass Fiber Prefilter	Regenerated Cellulose (RC)/ Glass Fiber Prefilter	Regenerated Cellulose (RC)/ Glass Fiber Prefilter
Pore Size	0.20 µm	0.45 µm	0.20 µm	0.45 µm
Miscellaneous	Hydrophobic	Hydrophobic	Hydrophilic	Hydrophilic
Part No.	30162086	30162087	30162088	30162089
Qty.	pk.100	pk.100	pk.100	pk.100

30 mm

					
Color	purple	green	black	red	orange
Membrane	Nylon (PA)/ Glass Fiber Prefilter	Nylon (PA)/ Glass Fiber Prefilter	PVDF/ Glass Fiber Prefilter	PVDF	Glass Fiber
Pore Size	0.20 µm	0.45 µm	0.20 µm	0.45 µm	1.2 µm
Miscellaneous	Hydrophilic	Hydrophilic	Hydrophilic	Hydrophilic	Hydrophilic
Part No.	30162090	30162091	30162092	30162093	30162094
Qty.	pk.100	pk.100	pk.100	pk.100	pk.100

25 mm

						
Color	green	natural	blue,	yellow,	bright blue	bright green
Membrane	PTFE	PTFE	regenerated Cellulose (RC)	regenerated Cellulose (RC)	Nylon (PA)	Nylon (PA)
Pore Size	0.20 µm	0.45 µm	0.20 µm	0.45 µm	0.20 µm	0.45 µm
Miscellaneous	Hydrophobic	Hydrophobic	Hydrophilic	Hydrophilic	Hydrophilic	Hydrophilic
Part No.	25160346	25160347	25160348	25160349	25160350	25160351
Qty.	pk.100	pk.100	pk.100	pk.100	pk.100	pk.100

17 mm HPLC

Color
Membrane
Pore Size
Miscellaneous

Part No.
Qty.



blue
PTFE
0.20 µm
Hydrophobic
17162076
pk.100



yellow
PTFE
0.45 µm
Hydrophobic
17162077
pk.100



grey
Regenerated Cellulose (RC)
0.20 µm
Hydrophilic
17162078
pk.100



brown
Regenerated Cellulose (RC)
0.45 µm
Hydrophilic
17162079
pk.100

17 mm HPLC

Color
Membrane
Pore Size
Miscellaneous

Part No.
Qty.



purple
Nylon (PA)
0.20 µm
Hydrophilic
17162080
pk.100



green
Nylon (PA)
0.45 µm
Hydrophilic
17162081
pk.100



black
PVDF/Glass Fiber Prefilter
0.20 µm
Hydrophilic
17162082
pk.100



red
PVDF/Glass Fiber Prefilter
0.45 µm
Hydrophilic
17162083
pk.100

Disposable Plastic Syringes

Polypropylene (PP), HPLC Certified

with Luer Tip

Volume
Connector

Part No.
Qty.



2 ml
Luer Tip
PP-EWS-2L
pk.100



5 ml
Luer Tip
PP-EWS-5L
pk.100



10 ml
Luer Tip
PP-EWS-10L
pk.100



20 ml
Luer Tip
PP-EWS-20L
pk.100

with Luer Lock

Volume
Connector

Part No.
Qty.



2 ml
Luer Lock Tip
PP-EWS-2LL
pk.100



5 ml
Luer Lock Tip
PP-EWS-5LL
pk.100



10 ml
Luer Lock Tip
PP-EWS-10LL
pk.100



20 ml
Luer Lock Tip
PP-EWS-20LL
pk.100

Spin Filters



What is a Spin Filter?

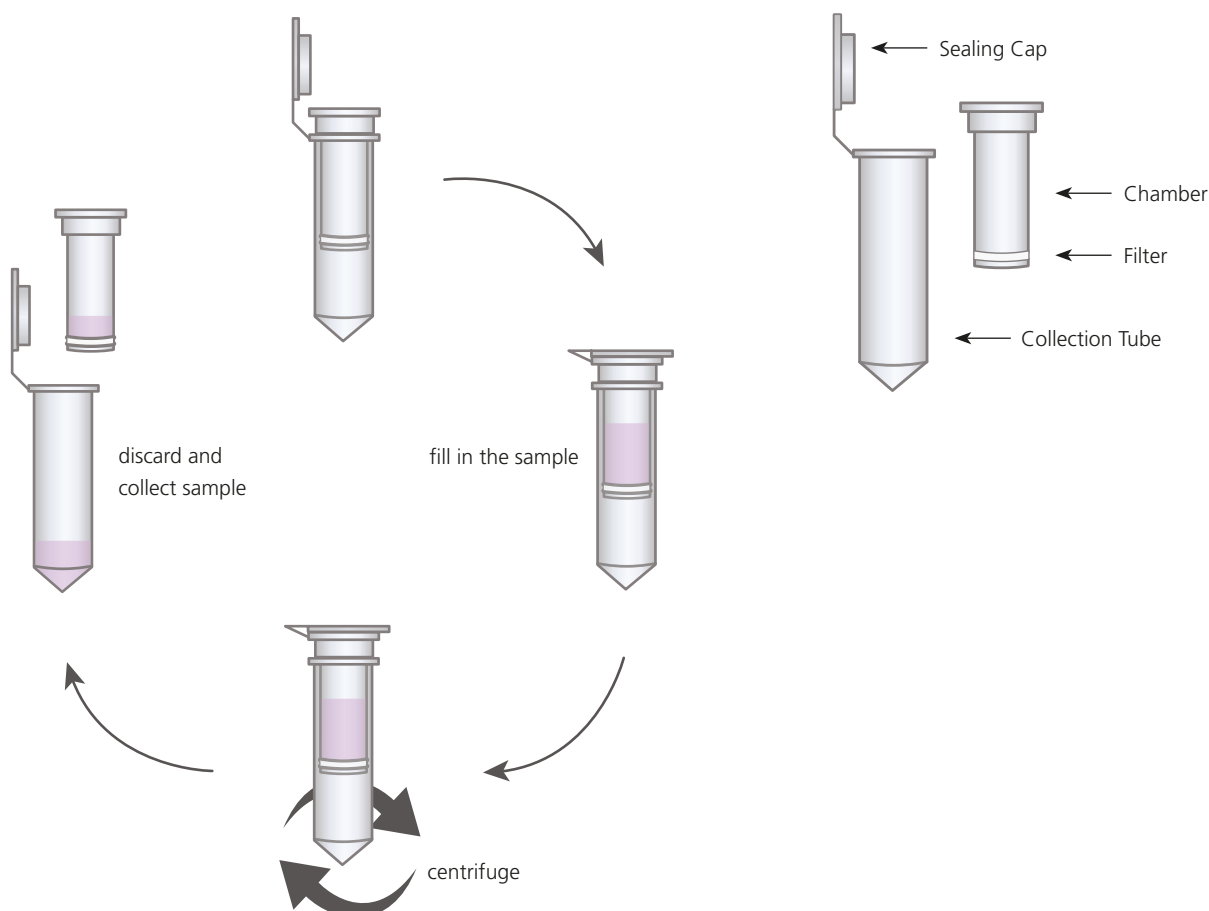
A spin filter is a membraned single-use device composed by a sample chamber and a receiver tube. Designed for use in centrifuges, spin filters are very useful for small volume sample filtration. Available with various membrane materials and pore sizes for HPLC sample preparation, bacteria removal, particle removal, etc. The tube has a marking area and is graduated. A cap serves the dual purpose of capping the sample chamber during the centrifugation and the receiver tube after the sample chamber has been removed.

	Nano Spin Filter	Micro Spin Filter	Midi Spin Filter	Maxi Spin Filter*
Housing	Polypropylene	Polypropylene	Polypropylene	Polypropylene
Sample size	up to 450 µl	up to 850 µl	up to 5 ml	up to 25 ml
Hold up volume	< 2 µl	< 5 µl	< 10 µl	< 20 µl
Max G force	10 000	10 000	5 000	2 500
Volume Receiver Tube	2.0 ml	2.0 ml	7 ml	50 ml

* Use with fixed-angle rotor centrifuge

Note: Centrifugal force, temperature and sample volume, concentration and viscosity affect filtration rate. Optimize centrifugal time for each application. Upon receipt store at room temperature.

How to use a Spin Filter



Nano Spin Filter, non sterile

400 µl capacity, with 2.0ml capples receiver tube



Part No.	Membrane	Pore Size	Qty.
SPFNANCA02	CA	0.20 µm	pk.100
SPFNANCA45	CA	0.45 µm	pk.100
SPFNANNC02	NC	0.20 µm	pk.100
SPFNANNC45	NC	0.45 µm	pk.100
SPFNANNL02	Nylon	0.20 µm	pk.100
SPFNANNL45	Nylon	0.45 µm	pk.100
SPFNANPS02	PES	0.20 µm	pk.100
SPFNANPS45	PES	0.45 µm	pk.100
SPFNANPP02	PP	0.20 µm	pk.100
SPFNANPP45	PP	0.45 µm	pk.100
SPFNANPT02	PTFE	0.20 µm	pk.100
SPFNANPT45	PTFE	0.45 µm	pk.100
SPFNANPV02	PVDF	0.20 µm	pk.100
SPFNANPV45	PVDF	0.45 µm	pk.100
SPFNANRC02	RC	0.20 µm	pk.100
SPFNANRC45	RC	0.45 µm	pk.100

Micro Spin Filter, non sterile

800 µl capacity, with 2.0ml receiver tube



Part No.	Membrane	Pore Size	Qty.
SPFMICCA02	CA	0.20 µm	pk.100
SPFMICCA45	CA	0.45 µm	pk.100
SPFMICNC02	NC	0.20 µm	pk.100
SPFMICNC45	NC	0.45 µm	pk.100
SPFMICNL02	Nylon	0.20 µm	pk.100
SPFMICNL45	Nylon	0.45 µm	pk.100
SPFMICPS02	PES	0.20 µm	pk.100
SPFMICPS45	PES	0.45 µm	pk.100
SPFMICPP02	PP	0.20 µm	pk.100
SPFMICPP45	PP	0.45 µm	pk.100
SPFMICPT02	PTFE	0.20 µm	pk.100
SPFMICPT45	PTFE	0.45 µm	pk.100
SPFMICPV02	PVDF	0.20 µm	pk.100
SPFMICPV45	PVDF	0.45 µm	pk.100
SPFMICRC02	RC	0.20 µm	pk.100
SPFMICRC45	RC	0.45 µm	pk.100

Midi Spin Filter, non sterile
4ml capacity, with 7 ml receiver tube



Part No.	Membrane	Pore Size	Qty.
SPFMIDCA02	CA	0.20 µm	pk.25
SPFMIDCA45	CA	0.45 µm	pk.25
SPFMIDNC02	NC	0.20 µm	pk.25
SPFMIDNC45	NC	0.45 µm	pk.25
SPFMIDNL02	Nylon	0.20 µm	pk.25
SPFMIDNL45	Nylon	0.45 µm	pk.25
SPFMIDPS02	PES	0.20 µm	pk.25
SPFMIDPS45	PES	0.45 µm	pk.25
SPFMIDPP02	PP	0.20 µm	pk.25
SPFMIDPP45	PP	0.45 µm	pk.25
SPFMIDPT02	PTFE	0.20 µm	pk.25
SPFMIDPT45	PTFE	0.45 µm	pk.25
SPFMIDPV02	PVDF	0.20 µm	pk.25
SPFMIDPV45	PVDF	0.45 µm	pk.25
SPFMIDRC02	RC	0.20 µm	pk.25
SPFMIDRC45	RC	0.45 µm	pk.25

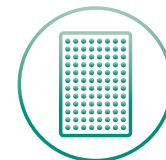
Maxi Spin Filter*, non sterile
25ml capacity, with 50ml receiver tube



Part No.	Membrane	Pore Size	Qty.
SPFMAXCA02	CA	0.20 µm	pk.50
SPFMAXCA45	CA	0.45 µm	pk.50
SPFMAXNC02	NC	0.20 µm	pk.50
SPFMAXNC45	NC	0.45 µm	pk.50
SPFMAXNL02	Nylon	0.20 µm	pk.50
SPFMAXNL45	Nylon	0.45 µm	pk.50
SPFMAXPS02	PES	0.20 µm	pk.50
SPFMAXPS45	PES	0.45 µm	pk.50
SPFMAXPP02	PP	0.20 µm	pk.50
SPFMAXPP45	PP	0.45 µm	pk.50
SPFMAXPT02	PTFE	0.20 µm	pk.50
SPFMAXPT45	PTFE	0.45 µm	pk.50
SPFMAXPV02	PVDF	0.20 µm	pk.50
SPFMAXPV45	PVDF	0.45 µm	pk.50
SPFMAXRC02	RC	0.20 µm	pk.50
SPFMAXRC45	RC	0.45 µm	pk.50

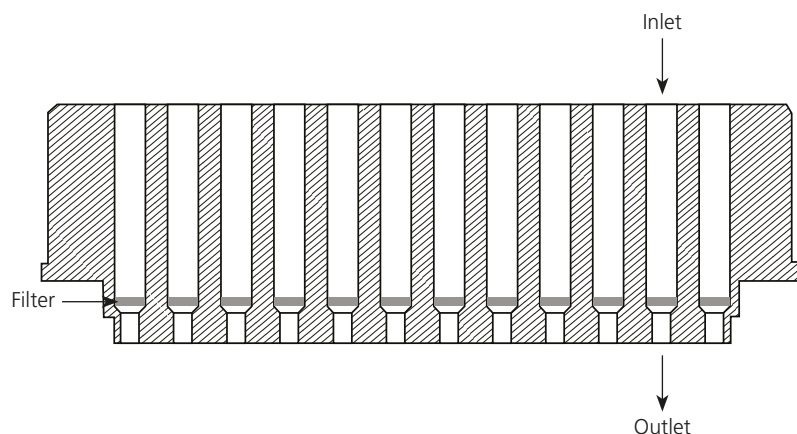
* Use with fixed-angle rotor centrifuge

Well Filter Plates



What is a Filter Plate?

A filter plate is a combination of an innovative membrane filter technology with a multi-wells plate design resulting in a fast, accurate and efficient filtration over a various number of life science and analytical applications. A comprehensive selection of membranes allows researchers to select the best filter plate that fits their specific application needs. Filter plates are especially designed for high throughput and rapid sample processing. Optimized well plate design is fully compatible with automation. Manufactured in accordance with SBS guidelines, filter plates can be run in manual, semi-automated, and automated processes.



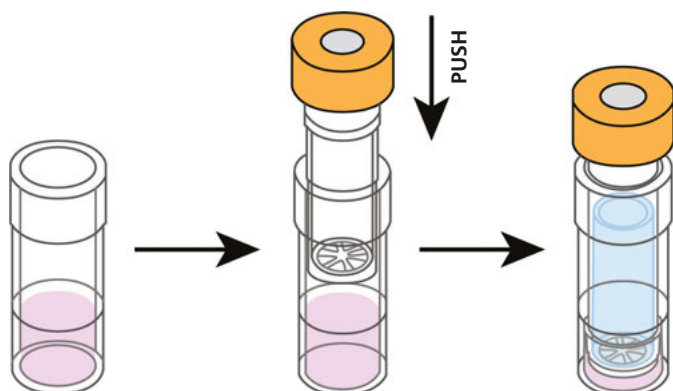
96 Well Filter Plate, non sterile
850 μ L capacity



Part No.	Membrane	Pore Size	Qty.
WFPCA02	CA	0.20 μ m	ea.
WFPCA45	CA	0.45 μ m	ea.
WFPNC02	NC	0.20 μ m	ea.
WFPNC45	NC	0.45 μ m	ea.
WFPNL02	Nylon	0.20 μ m	ea.
WFPNL45	Nylon	0.45 μ m	ea.
WFPPS02	PES	0.20 μ m	ea.
WFPPS45	PES	0.45 μ m	ea.
WFPPP02	PP	0.20 μ m	ea.
WFPPP45	PP	0.45 μ m	ea.
WFPPT02	PTFE	0.20 μ m	ea.
WFPPT45	PTFE	0.45 μ m	ea.
WFPPV02	PVDF	0.20 μ m	ea.
WFPPV45	PVDF	0.45 μ m	ea.
WFPRC02	RC	0.20 μ m	ea.
WFPRC45	RC	0.45 μ m	ea.

BGB Filter Vials

How to use a Filter Vial





Filter vials provide an efficient, single-step filtering sample preparation process that quickly and easily cleans up your samples. They increase sample integrity by retaining the complete sample inside the vial. The filter vials are compatible with most autosamplers; pre-slitted caps ensure that the autosampler needle can easily penetrate the vial. Filter vials are easy to press and can be used with a Multi-Vial Compressor System or manually.

Filter vials are an all-in-one filtration product that reduces waste by replacing the disposable syringes, syringe filters, glass vials and caps of the classic sample preparation process. They are available with 0.20 μm and 0.45 μm pore size Nylon, PES, PTFE, PVDF and regenerated cellulose (RC) membrane filters.

- For high-throughput chromatographic analysis
- Vial dimensions 32 mm x 12 mm (height x diameter)
- Polypropylene housing and piston
- Pre-slitted PP cap with PTFE/silicone septa
- 480 μL max. fill volume
- 30 μL dead volume
- 50°C (120°F) max. operating temperature
- 0.6 bar (8 psi) compression force



Pre-slitted PP cap with PTFE/silicone septa

Dimension 32 x 12mm
 Membrane Nylon
 Pore Size 0.20 µm
Part No. FV03-1
 Qty. pk.100




Dimension 32 x 12mm
 Membrane Nylon
 Pore Size 0.45 µm
Part No. FV03-2
 Qty. pk.100




Dimension 32 x 12mm
 Membrane PES
 Pore Size 0.20 µm
Part No. FV07-1
 Qty. pk.100






Dimension 32 x 12mm
 Membrane PES
 Pore Size 0.45 µm
Part No. FV07-2
 Qty. pk.100




Dimension 32 x 12mm
 Membrane PTFE
 Pore Size 0.20 µm
Part No. FV04-1
 Qty. pk.100




Dimension 32 x 12mm
 Membrane PTFE
 Pore Size 0.45 µm
Part No. FV04-2
 Qty. pk.100

Dimension 32 x 12mm
 Membrane PVDF
 Pore Size 0.20 µm
Part No. FV05-1
 Qty. pk.100




Dimension 32 x 12mm
 Membrane PVDF
 Pore Size 0.45 µm
Part No. FV05-2
 Qty. pk.100




Dimension 32 x 12mm
 Membrane RC
 Pore Size 0.20 µm
Part No. FV01-1
 Qty. pk.100




Dimension 32 x 12mm
 Membrane RC
 Pore Size 0.45 µm
Part No. FV01-2
 Qty. pk.100

Membrane Filter Disc



Microfiltration is one kind of physical filtration process where contaminated fluid is passed through a special pore size membrane to separate suspended particles from liquid. Membrane filter discs are available in different membranes, pore sizes and diameters.



Membrane

CA

(Cellulose Acetate)

Part No.	Diameter	Pore Size	Qty.
MFCA013022	13 mm	0.22 µm	pk.400
MFCA025022	25 mm	0.22 µm	pk.200
MFCA047022	47 mm *	0.22 µm	pk.200
MFCA090022	90 mm	0.22 µm	pk.50
MFCA142022	142 mm	0.22 µm	pk.50
MFCA013045	13 mm	0.45 µm	pk.400
MFCA025045	25 mm	0.45 µm	pk.200
MFCA047045	47 mm *	0.45 µm	pk.200
MFCA090045	90 mm	0.45 µm	pk.50
MFCA142045	142 mm	0.45 µm	pk.50

CME

(Cellulose Mixed Esters)

MFME013022	13 mm	0.22 µm	pk.400
MFME025022	25 mm	0.22 µm	pk.200
MFME047022	47 mm	0.22 µm	pk.200
MFME050022	50 mm	0.22 µm	pk.50
MFME090022	90 mm	0.22 µm	pk.50
MFME142022	142 mm	0.22 µm	pk.50
MFME013045	13 mm	0.45 µm	pk.400
MFME025045	25 mm	0.45 µm	pk.200
MFME047045	47 mm *	0.45 µm	pk.200
MFME050045	50 mm	0.45 µm	pk.50
MFME090045	90 mm	0.45 µm	pk.50
MFME142045	142 mm	0.45 µm	pk.50

CN

(Cellulose Nitrate)

MFCN013022	13 mm	0.22 µm	pk.400
MFCN025022	25 mm	0.22 µm	pk.200
MFCN047022	47 mm *	0.22 µm	pk.200
MFCN090022	90 mm	0.22 µm	pk.50
MFCN142022	142 mm	0.22 µm	pk.50
MFCN013045	13 mm	0.45 µm	pk.400
MFCN025045	25 mm	0.45 µm	pk.200
MFCN047045	47 mm *	0.45 µm	pk.200
MFCN090045	90 mm	0.45 µm	pk.50
MFCN142045	142 mm	0.45 µm	pk.50

* matches with
Vacuum Filtration
Systems on page 16



Membrane	Part No.	Diameter	Pore Size	Qty.
PTFE – Hydrophilic (Polytetrafluoroethylene)	MFPTFE013022L	13 mm	0.22 µm	pk.400
	MFPTFE090022L	90 mm	0.22 µm	pk.50
	MFPTFE013045L	13 mm	0.45 µm	pk.400
	MFPTFE025045L	25 mm	0.45 µm	pk.200
	MFPTFE047045L	47 mm *	0.45 µm	pk.200
	MFPTFE090045L	90 mm	0.45 µm	pk.50

PTFE – Hydrophobic (Polytetrafluoroethylene)	MFPTFE013022B	13 mm	0.22 µm	pk.400
	MFPTFE025022B	25 mm	0.22 µm	pk.200
	MFPTFE047022B	47 mm *	0.22 µm	pk.200
	MFPTFE090022B	90 mm	0.22 µm	pk.50
	MFPTFE142022B	142 mm	0.22 µm	pk.50
	MFPTFE025045B	25 mm	0.45 µm	pk.200
	MFPTFE047045B	47 mm *	0.45 µm	pk.200
	MFPTFE090045B	90 mm	0.45 µm	pk.50
MFPTFE142045B	142 mm	0.45 µm	pk.50	

Nylon (Polyamide)	MFNY013022	13 mm	0.22 µm	pk.400
	MFNY025022	25 mm	0.22 µm	pk.200
	MFNY047022	47 mm *	0.22 µm	pk.200
	MFNY050022	50 mm	0.22 µm	pk.100
	MFNY090022	90 mm	0.22 µm	pk.100
	MFNY142022	142 mm	0.22 µm	pk.50
	MFNY293022	293 mm	0.22 µm	pk.25
	MFNY013045	13 mm	0.45 µm	pk.400
	MFNY025045	25 mm	0.45 µm	pk.200
	MFNY047045	47 mm *	0.45 µm	pk.200
	MFNY050045	50 mm	0.45 µm	pk.100
	MFNY090045	90 mm	0.45 µm	pk.100
	MFNY142045	142 mm	0.45 µm	pk.50
	MFNY293045	293 mm	0.45 µm	pk.25

PES (Polyethersulfone)	MFPE013022	13 mm	0.22 µm	pk.400
	MFPE025022	25 mm	0.22 µm	pk.200
	MFPE047022	47 mm *	0.22 µm	pk.200
	MFPE090022	90 mm	0.22 µm	pk.50
	MFPE142022	142 mm	0.22 µm	pk.50
	MFPE013045	13 mm	0.45 µm	pk.400
	MFPE025045	25 mm	0.45 µm	pk.200
	MFPE047045	47 mm *	0.45 µm	pk.200
	MFPE090045	90 mm	0.45 µm	pk.50
	MFPE142045	142 mm	0.45 µm	pk.50

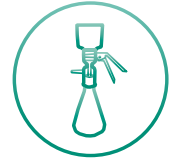
PVDF Hydrophilic (Polyvinylidene difluoride)	MFPVDF013022L	13 mm	0.22 µm	pk.400
	MFPVDF025022L	25 mm	0.22 µm	pk.200
	MFPVDF047022L	47 mm *	0.22 µm	pk.200
	MFPVDF013045L	13 mm	0.45 µm	pk.400
	MFPVDF025045L	25 mm	0.45 µm	pk.200
	MFPVDF047045L	47 mm *	0.45 µm	pk.200

PVDF Hydrophobic (Polyvinylidene difluoride)	MFPVDF013022	13 mm	0.22 µm	pk.400
	MFPVDF025022	25 mm	0.22 µm	pk.200
	MFPVDF047022	47 mm *	0.22 µm	pk.200
	MFPVDF090022	90 mm	0.22 µm	pk.50
	MFPVDF142022	142 mm	0.22 µm	pk.50
	MFPVDF013045	13 mm	0.45 µm	pk.400
	MFPVDF025045	25 mm	0.45 µm	pk.200
	MFPVDF047045	47 mm *	0.45 µm	pk.200
	MFPVDF090045	90 mm	0.45 µm	pk.50
	MFPVDF142045	142 mm	0.45 µm	pk.50

* matches with
Vacuum Filtration
Systems on page 16



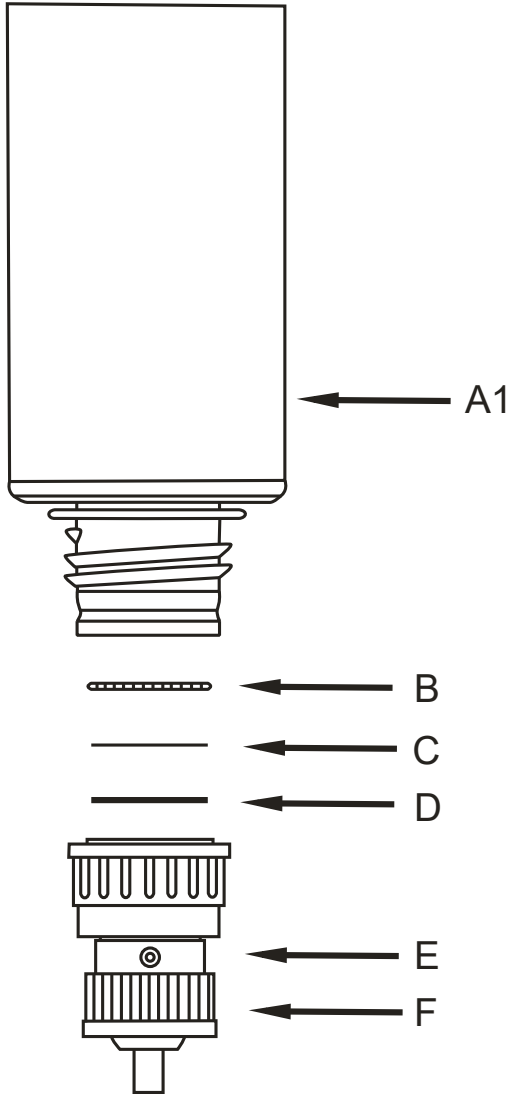
Vacuum Filtration Systems



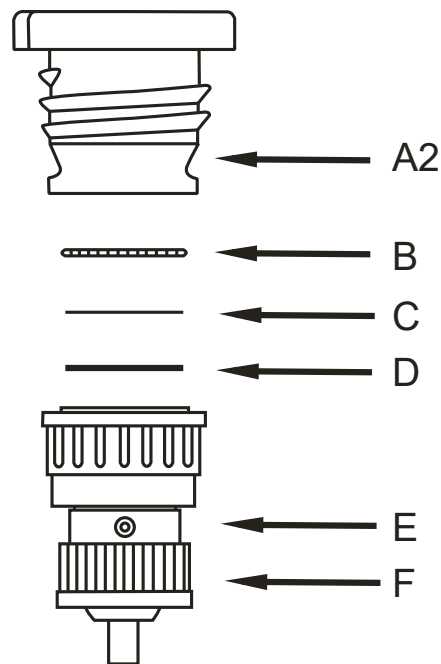
Assembly

BGB Filter Funnels and In-Line Systems are made of durable polypropylene and are therefore practically indestructible. All filter systems are available with a filter support in stainless steel (SS) as a standard version and with a filter support in PEEK as a Bio-compatible version. They are easy to set up and use.

Filter Funnel System



In-Line System



A1 = Funnel

A2 = In-Line Filter Adapter Cap

B = Filter Retainer Ring

C = Membrane Filter Disc

D = Filter Support

E = Base Unit with Vacuum Port

F = GL-45 Cap Closure

Vacuum Filter System In-Line

Container/Connection
Membrane Support

Part No.

Qty.



In-Line
Stainless Steel

BVFFSINLSS

ea.



In-Line
PEEK (Bio-compatible)

BVFFSINLPK

ea.

Vacuum Filter System with 1L Funnel

Container/Connection
Membrane Support

Part No.

Qty.



1L Funnel
Stainless Steel

BVFFS1LSS

ea.



1L Funnel
PEEK (Bio-compatible)

BVFFS1LPK

ea.

Vacuum Filter System with 2L Funnel

Container/Connection
Membrane Support

Part No.

Qty.



2L Funnel
Stainless Steel

BVFFS2LSS

ea.



2L Funnel
PEEK (Bio-compatible)

BVFFS2LPK

ea.

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Choosing the right membrane

Filter Membranes

Choosing the right membrane and pore size is the key to ensuring the integrity of your sample and the protection of your chromatography system. BGB syringe filters are available in different membrane types and pore sizes to meet the demands of a wide variety of applications. The following table shows the different membrane types with their recommended uses:

Membrane Types	Protein Binding	Properties	Recommended uses	Applications
Cellulose Acetate (CA)	very low	hydrophilic	Cellulose Acetate (CA) membranes show a very low binding affinity for biological macromolecules such as proteins. Cellulose acetate (CA) is a good alternative to polyvinylidene difluoride (PVDF) or polyethersulfone (PES) membranes in terms of protein binding. As a dual-layer filter in combination with a glass fiber prefilter, it is ideal for the filtration and clarification of tissue culture media and sensitive biological samples.	<ul style="list-style-type: none"> • Proteins and enzymes filtration • Tissue culture media filtration • Biological samples filtration • Filtration of aqueous buffers
Cellulose Mixed Esters (CME)	low	hydrophilic	Cellulose Mixed Esters (CME) membranes consist of a mixture of Cellulose Nitrate (CN) and Cellulose Acetate (CA). This membrane shows a high flow characteristic and is ideal for a wide range of applications.	<ul style="list-style-type: none"> • General laboratory filtration
Glass fiber (GF)		hydrophobic	Glas fiber (GF) membranes offer a good chemical resistance and have a higher flow characteristic with high particle loading capacity and are ideal for viscous and particle-laden samples or for prefiltration.	<ul style="list-style-type: none"> • Prefiltration • Particle-laden/viscous samples • High throughput filtration • General laboratory filtration
Nylon (PA)	low to moderate	hydrophilic	Nylon (PA) membranes offer a good chemical resistance and are suitable for general laboratory filtration and especially for HPLC samples and solvents with aqueous or aqueous-organic solutions. Due to the presence of protein binding, the Nylon (PA) membranes should not be used if maximum protein recovery is important. As a dual-layer filter in combination with a glass fiber prefilter, it is ideal for the filtration of particle-laden samples.	<ul style="list-style-type: none"> • HPLC solvents filtration • HPLC samples filtration • General laboratory filtration
Polyethersulfone (PES)	very low	hydrophilic	Polyethersulfone (PES) membranes show a very low binding affinity for proteins and a higher flow characteristic compared to Cellulose Acetate (CA) and Nylon (PA). Polyethersulfone (PES) membranes are recommended for the filtration and clarification of buffers and tissue culture media.	<ul style="list-style-type: none"> • Ion Chromatography samples • Tissue culture media filtration • Filtration of buffers • Proteins and enzymes filtration
Polypropylene (PP)	low	hydrophilic	Polypropylene (PP) membranes offer a very good chemical resistance together with a low non-specific adsorption. This makes them suitable for general laboratory filtration and especially for HPLC samples and solvents with aqueous or aqueous-organic solutions.	<ul style="list-style-type: none"> • HPLC solvents filtration • HPLC samples filtration • General laboratory filtration

Membrane Types	Protein Binding	Properties	Recommended uses	Applications
Polytetrafluoroethylene (PTFE)	n/a	hydrophobic	Polytetrafluoroethylene (PTFE) membranes have a broad chemical resistance, making them suitable for the filtration of aggressive solutions or chemicals where other membrane materials are not suitable. Due to the hydrophobicity of the PTFE membrane, the filtration of aqueous solutions requires a pre-wetting with methanol or ethanol.	<ul style="list-style-type: none"> Filtration of organic solvents Filtration of samples in organic HPLC and GC solvents Gas filtration
Polytetrafluoroethylene (PTFE) Hydrophilic	n/a	hydrophilic	Polytetrafluoroethylene (PTFE) hydrophilic membranes have broad chemical resistance, making them suitable for the filtration of aggressive solutions or chemicals where other membrane materials are not suitable. The hydrophilic PTFE membrane requires no pre-wetting for the filtration of aqueous solutions.	<ul style="list-style-type: none"> HPLC samples filtration HPLC solvents filtration Filtration of aqueous and organic solvents
Polyvinylidene difluoride (PVDF)	very low	hydrophobic	Polyvinylidene difluoride (PVDF) shows a very low binding affinity for proteins and offer broad chemical resistance. For general laboratory filtration of non-aggressive aqueous and mild organic solutions.	<ul style="list-style-type: none"> Proteins and enzymes filtration HPLC solvents filtration HPLC samples filtration General laboratory filtration
Regenerated Cellulose (RC)	low	hydrophilic	Regenerated Cellulose (RC) membranes offer a good chemical resistance together with low non-specific adsorption makes them suitable for general laboratory filtration and especially for HPLC samples and solvents.	<ul style="list-style-type: none"> HPLC solvents filtration HPLC samples filtration General laboratory filtration

Filter Pore Size

In addition to the membrane type, the right choice of pore size is important for the application.

- 0.45 µm pore size membranes are typically used for standard HPLC samples, general filtration and particle removal applications.
- 0.20 µm and 0.22 µm pore size membranes are mostly used for solution bacteria removal or UHPLC samples.
- 0.70 µm, 1.00 µm, 1.20 µm and 5.00 µm pore size membranes are for increased sample throughput, viscous samples or large particle removal of difficult samples.
- 0.22 µm and 0.45 µm dual layer filter with additional 1.00 µm glass fiber prefilter for fine filtration of difficult samples.

Sample particle size	< 0.5 µm	< 2.0 µm	> 5 µm and/or high particle load
LC column particle size	< 3.0 µm (UHPLC)	> 3.0 µm (HPLC)	
Recommended syringe filter pore size	0.20 µm 0.22 µm	0.45 µm	Dual layer filter with glass fiber prefilter or 0.70 µm, 1.00 µm, 1.20 µm and 5.00 µm

Chemical Compatibility Chart*

Chemical	Housing	Membrane								
	PP	CA	CME	GF	Nylon	PES	PP	PTFE	PVDF	RC
ACIDS										
Acetic acid (glacial)	+	-	-	+	+	++	+	++	++	++
Acetic acid (25%)	+	++	+	++	++	++	+	++	++	++
Hydrochloric acid (concentrated)	0	-	-	++	-	++	0	++	++	-
Hydrochloric acid (20%)	+	-	-	++	-	++	+	++	++	-
Sulfuric acid (concentrated)	+	-	-	++	-	-	+	++	-	-
Sulfuric acid (25%)	++	-	-	++	-	++	++	++	++	+
Nitric acid (concentrated)	-	-	-	+	-	-	-	++	++	-
Nitric acid (25%)	+	-	-	++	-	++	+	++	++	-
Phosphoric acid (25%)	+	++	++	0	-	0	+	++	0	+
Formic acid (25%)	++	+	+	++	-	0	++	++	0	++
Trichloroacetic acid (10%)	+	++	++	++	-	0	+	++	0	++
ALKALIES										
Ammonium hydroxide (25%)	+	++	+	+	++	++	+	++	+	+
Sodium hydroxide (1N)	++	-	-	+	++	++	++	++	++	+
ALCOHOLES										
Methanol (98%)	+	++	-	++	++	++	+	++	++	++
Ethanol (98%)	+	++	-	++	++	++	+	++	++	++
Ethanol (70%)	++	+	0	++	+	++	++	++	++	++
Isopropanol, n-propanol	++	++	+	++	++	++	++	++	++	++
Amyl alcohol, butanol	++	++	++	++	++	++	++	++	++	++
Benzyl alcohol	+	+	+	++	++	0	+	++	++	++
Ethylene glycol	++	++	+	++	++	++	++	++	++	++
Propylene glycol	++	+	-	++	++	++	++	++	++	++
Glycerol	++	++	++	++	++	++	++	++	++	++
HYDROCARBONS										
Hexane, xylene	+	++	++	++	++	-	-	++	++	++
Toluene, benzene	+	++	++	++	++	-	-	++	++	++
Kerosene, gasoline	+	++	++	++	++	+	+	++	++	++
Tetraclin, decalin	0	++	++	0	0	0	0	++	++	++
HALOGENATED HYDROCARBONS										
Methylene chloride	+	-	-	++	+	-	+	++	++	++
Chloroform	+	-	0	++	++	-	+	++	++	++
Trichloroethylene	+	++		++	++	-	+	++	++	++
Monochlorobenzene, freon	+	++	++	++	++	+	+	++	++	++
Carbontetrachloride	-	+	++	++	++	-	-	++	++	++
KETONES										
Acetone, cyclohexanone	++	-	-	++	++	-	++	++	-	++
Methyl ethyl ketone (MEK)	+	+	-	++	++	-	+	++	+	++
Isopropylacetone	0	++	+	++	++	-	0	++	-	++
Methyl isobutyl ketone	+	0	0	++	0	-	+	++	+	++

Chemical	Housing		Membrane							
	PP	CA	CME	GF	Nylon	PES	PP	PTFE	PVDF	RC
ESTERS										
Ethyl acetate, methyl acetate	+	+	-	++	++	-	+	++	++	++
Amyl, propyl & butyl acetate	+	-	-	++	++	-	+	++	0	++
Propylene glycol acetate	+	+	-	0	0	-	+	++	0	++
2-Ethoxyethyl acetate	0	-	-	0	0	-	0	++	0	++
Methyl cellosolve acetate	+	++	-	++	0	-	+	++	0	++
Benzyl benzoate	0	++	++	0	++	-	0	++	0	++
Isopropyl myristate	0	++	+	0	++	-	0	++	0	++
Tricresyl phosphate	0	++	+	0	0	-	0	++	0	++
ORGANIC OXIDES										
Ethyl ether	-	++	+	++	++	++	-	++	++	++
Dioxane & tetrahydrofuran (THF)	+	-	-	++	++	-	+	++	+	++
Dimethylsulfoxide (DMSO)	++	-	-	++	++	-	++	++	-	++
Isopropyl ether	+	++	+	0	0	++	+	++	++	++
SOLVENTS WITH NITROGEN										
Dimethyl formamide (DMF)	+	-	-	++	+	-	++	++	-	+
Diethylacetamid	++	-	-	++	++	0	0	++	0	++
Triethanolamine	0	++	++	0	++	0	0	++	0	++
Aniline	0	-	+	0	0	0	0	++	0	++
Pyridine	+	-	-	++	++	-	+	++	++	++
Acetonitrile (ACN)	++	-	0	++	++	-	+	++	++	++
MISCELLANEOUS										
Phenol, aqueous (10%)	0	-	-	++	0	-	0	++	+	-
Formaldehyde solution (30%)	++	++	++	++	++	++	++	++	++	+
Hydrogene peroxide (30%)	0	++	-	0	++	0	0	++	0	++
Silicone oil & mineral oil	++	++	++	++	0	++	++	++	++	++
STERILIZATION										
Autoclaving 121 °C, 30 min	++	-	-	-	++	-	0	++	0	++

LEGEND

++ = Compatible
+ = Limited Compatible (testing before use, material may stress crack, swell and/or shrink)
- = Not Compatible
0 = No Data Available

CA = Cellulose Acetate
CME = Cellulose Mixed Esters
GF = Glass Fiber
Nylon = Polyamide (PA)
PES = Polyethersulfone
PP = Polypropylene
PTFE = Polytetrafluoroethylene
PVDF = Polyvinylidene Diflорide
RC = Regenerated Cellulose

*The information on chemical compatibility only relates to short-term contact at room temperature for the normal filtration process and does not indicate long-term stability of the membrane or the housing against these chemicals. We recommend that you always confirm compatibility with the liquid you want to filter by performing a test.

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