Filtration for HPLC sample preparation

Efficient sample filtration for HPLC, helping labs save time.

cytiva

Quality, consistency and safety

Cytiva is committed to quality. Our Whatman™ brand products are manufactured from high-purity raw materials, and our factories all operate to the latest version of ISO 9001 standards. Our filter selection recommendations are built on the combination of expertise in modern methods and almost 300 years of history in the paper and membrane filtration business.

Cytiva's Whatman™ filtration products bring efficient sample filtration for High-Performance Liquid Chromatography (HPLC), helping labs save time when processing numerous HPLC samples and reducing the number of filtration devices and associated costs and waste, while protecting valuable instruments to deliver consistent and accurate analytical testing results.

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Importance of sample prep prior to HPLC

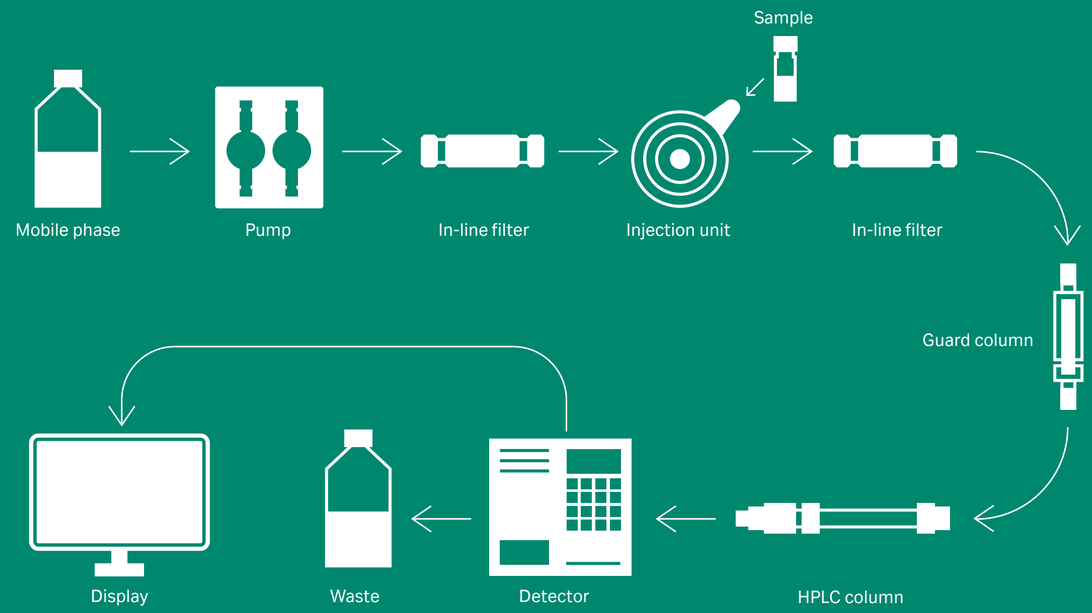
HPLC can be demanding in both high pressure in the workflow and results. Accurate results depend on various steps throughout the process. An analytical lab may process hundreds of samples per week, each requiring fast analysis generating reliable results. Therefore, the analyst needs to find and maintain the optimum balance between pace and quality.

Two key reasons for using filtration during HPLC sample and mobile phase preparation are to:

1. Protect the instrument's pump, valves, and tubing from damage or clogging due to particulate introduced by unfiltered samples or mobile phase.
2. Prevent particulates from building up on the delicate HPLC column and affecting data quality and reducing column life.

As the need for quality and throughput ever-increases, there is a trend towards automated HPLC sample preparation. Selecting a supplier who can offer options to streamline workflow, minimize waste, provide automation-compatible devices, or recycle used devices becomes increasingly important.

Chromatography, specifically HPLC, is a key focus area for many customers, and that focus drives filtration performance requirements. The need for consistency, is considered to be the most valuable factor in sample analysis.



Simplify sample preparation with the Whatman™ syringe filter portfolio

A filtration solution to suit your application

High performance

Broad selection of membranes, sizes and formats to meet most analytical needs, from basic to advanced

Puradisc™ syringe filters
Anotop™ syringe filters

Difficult filtration

Use for heavy particulate samples

Whatman GD/X™ syringe filters
GD/XP
Anotop Plus™ syringe filters

Automated systems

Use in high throughput and/or dissolution systems

Roby
850-DS

Application specific

Dedicated uses: HPLC, IC and LC with certification; bioethanol and protein purification production; environmental samples prior to COD/DOC analysis

Puradisc™ Aqua syringe filters
SPARTAN™ Certified syringe filters
Protein Prep
Anotop™ IC syringe filters
Anotop™ LC syringe filters

All in One

Integrated devices include the collection receptacle to save time, reduce waste and reduce sample handling

Autovial™ syringeless filter
UniPrep™ syringeless filters
Mini-UniPrep™ syringeless filters
Mini-UniPrep™ G2 syringeless filters

Advantage

Reliable quality, economical portfolio for basic applications

Whatman™ Uniflo™ syringe filters

Mobile phase

Inline filter devices for degassing solutions used as the carrier phase in analytical equipment

Aqueous IFD
Solvent IFD

Whatman™ filtration device decision chart

		Solvents											
		Aqueous											
		Hydrophilic									Hydrophobic		
		CN	CA	PES	GMF	NYL	PVDF	ANP	RC	H-PTFE	DpPP*	PP*	PTFE†
High performance The workhorse of the lab, these syringe filters deliver premium quality with efficiency to meet most analytical needs, from basic to advanced.	**Anotop™ syringe filters**							✓					
	Puradisc™ syringe filters	✓	✓	✓	✓	✓	✓		✓	✓	✓	✓	✓
Difficult filtration For use with high-particulate and viscous samples, these syringe filters contain two or more filter layers to allow efficient filtration without blockage for a cost-effective and efficient solution.	**Anotop™ Plus syringe filters**							✓					
	Whatman GD/X™ syringe filters		✓	✓	✓	✓	✓		✓		✓	✓	✓
	GD/XP			✓		✓	✓				✓	✓	✓
Automated systems These sturdy syringe filters are compatible with most high throughput and/or dissolution systems.	**Roby**				✓	✓			✓				
	850-DS			✓	✓	✓	✓						✓
Application specific Dedicated uses: HPLC, IC and LC with certification; bioethanol and protein purification production; environmental samples prior to COD/DOC analysis.	**Anotop™ IC syringe filters**							✓					
	Anotop™ LC syringe filters							✓					
	Puradisc™ Aqua syringe filters		✓										
	SPARTAN™ Certified syringe filters								✓				
	Protein Prep								✓				
All-in-One Integrated devices include the collection receptacle to save time, reduce waste and reduce sample handling	**Autovial™ syringeless filters**		✓	✓	✓	✓	✓					✓	✓
	UniPrep™ syringeless filters				✓	✓	✓						✓
	Mini-UniPrep™ syringeless filters			✓	✓	✓	✓		✓		✓	✓	✓
	Mini-UniPrep™ G2 syringeless filters				✓	✓	✓		✓			✓	✓
Advantage Reliable quality, economical portfolio for basic applications.	**Whatman™ Uniflo™ syringe filters**			✓	✓	✓	✓			✓			✓
Mobile phase Inline filter devices for degassing solutions used as the carrier phase in analytical equipment.	**Aqueous IFD**					✓							
	Solvent IFD											✓	

ANP = Anopore™
CA = Cellulose acetate
CN = Cellulose nitrate
DpPP = Polypropylene depth filter
GMF = Glass microfiber
NYL = Nylon
PES = Polyethersulfone
PP = Polypropylene
H-PTFE = Hydrophilic Polytetrafluoroethylene
PTFE = Polytetrafluoroethylene
PVDF = Polyvinylidene difluoride
RC = Regenerated cellulose

* *Mildly Hydrophobic can be used for aqueous sample but exhibits elevated water breakthrough*
† *Select PTFE for applications where prevention of water intrusion is critical*

1

Mobile phase filtration

Mobile phase filtration

Whatman™ inline filters feature high-purity polypropylene housings to maintain sample purity and are available with a choice of filtration media to suit a range of aqueous and organic samples.

Whatman™ Inline Filter/Degassers (IFD) connect directly into a HPLC line to simultaneously filter and degas the mobile phase as it is being used. The Aqueous IFD has 0.2 µm nylon media designed to be used with mobile phase containing at least 20% aqueous component. The Solvent IFD contains 0.2 µm polypropylene filter media for mobile phase containing organic solvents.

Both devices have a polypropylene housing, the circumference of which is sealed by a security ring, fittings to accommodate 1/16" to 1/8" tubing and an air vent on the inlet with Luer lock cap to enable priming.

The inline filters work on the principle of "bubble point"—the point of pressure at which gases will pass through a wet membrane. If pressure is maintained below the bubble point, the gas will not pass through the membrane and is trapped by the particular filter device.

Features and benefits

- Faster than traditional methods of mobile phase preparation, saving time in the laboratory
- Enhanced laboratory safety
- No need to purchase expensive degassing equipment
- Rugged, chemically resistant polypropylene construction
- Air vent on inlet with Luer lock cap
- Integrity-testable (bubble point method)

Technical specifications

Aqueous IFD and Solvent IFD

	Aqueous IFD	Solvent IFD
Bubble point*		
bar	2.9 (a)	0.76 (b)
psi	42 (a)	11.0 (b)
Maximum flow rate†	2.5 mL/min	2.5 mL/min
Filtration area	16 cm^2	16 cm^2

* *Typical values determined with (a) water and (b) isopropanol*

† *For effective gas bubble removal in HPLC*

Ordering information

Aqueous IFD and Solvent IFD

Diameter	Pore size (µm)	Catalog number	Description	Media	Quantity/pack
50	0.2	6726-5002	Aqueous IFD*	Nylon	10
50	0.2	6726-5002A	Aqueous IFD†	Nylon	10
50	0.2	6725-5002	Solvent IFD[1]	PP	10
50	0.2	6725-5002A	Solvent IFD[2]	PP	10

* *Standard catalog numbers include O-rings: 1/32-5/32; accepts different diameter tubing 0.8-4 mm*

† *Catalog numbers with suffix A are non-o-ring style and accept 1/8 tubing only*

PP—Polypropylene

Whatman™ Aqueous In-Line Filter/Degasser (IFD)

Aqueous IFD from Cytiva is a polypropylene housed in-line filter/degasser (IFD) with nylon membrane. It connects to an HPLC line to simultaneously filter and degasses during mobile phase preparation.

Ordering information

Whatman™ membrane filters for mobile phase filtration 47 mm (nonsterile)

Pore size (µm)	RC	Nylon	PTFE	Anopore™ inorganic membrane	Polyamide	CA	Quantity/ pack
0.2	-	-	-	6809-5523	-	-	50
0.2	10410312	7402-004	7582-004	-	10414012	10404112	100
0.45	10410212	7404-004	7585-004*	-	10414112	10404012	100

* *0.5 µm*

2
Glass vacuum filtration devices

Glass vacuum filtration devices

Glass vacuum filtration devices come in two general styles: glass filtration assemblies and glass filter funnels. Both styles use a clamp to hold the upper funnel to the lower base, tightly sealing the filter in between to prevent fluid bypass. Borosilicate glass provides chemical compatibility and smooth surfaces for thorough cleaning. Selection of filter support is influenced by the nature of the fluid being filtered. Low particulate and low viscosity fluids filter well through integrated porous glass support while high particulate, viscous or aggressive solvents may require a removable glass or stainless steel frit to allow for more aggressive cleaning procedures and/or better chemical compatibility.

Glass filtration assemblies

Glass filtration assemblies are designed in three pieces: upper funnel, lower base, and flask.

- Ideal for mobile phase filtration for analytical chemistry applications
- Selected for chemistry applications requiring minimized contact with multiple materials of construction
- Filter directly into a glass flask that can be removed and covered for analysis of filtrate, or retrieve filter for analysis of particulate collected
- Can be used for microbiological analysis by membrane filter (MF) technique

Glass filter funnels

Filter funnels are designed in two pieces: upper funnel and lower base with stopper.

- Suitable for microbiological analysis by MF technique of water, beverages, pharmaceuticals, and personal care products.
- Versatile design allows individual filtration using a traditional side-arm Erlenmeyer flask or installation into a traditional 3- or 6-place manifold systems
- Variety of funnel sizes and membrane diameters to suit a range of applications from particulate and residue analysis to precipitation and biochemical studies

Technical specifications

Glass vacuum filtration devices

Upper funnel, lower base, and flask	Borosilicate glass
Cap	Silicon
Frit	Glass D2
Sieve	Stainless steel, PTFE coated
Seals	PTFE and silicone
Clamps	Aluminum and stainless steel
Hose connection	POM, thread RD14

Ordering information

Glass vacuum filtration devices

Catalog number	Format; system	Membrane diameter	Funnel volume	Flask volume or Stopper size	Filter support
1960-002	Filter funnel	24-25 mm	25 mL	#5 Stopper	Integrated glass frit
1960-052	Filter funnel	24-25 mm	25 mL	#5 Stopper	Stainless steel with PTFE gasket
1960-032	Filter funnel	24-25 mm	50 mL	#5 Stopper	Integrated glass frit
1960-004	Filter funnel	47-50 mm	300 mL	#8 stopper	Integrated glass frit
1960-054	Filter funnel	47-50 mm	300 mL	#8 stopper	Stainless steel with PTFE gasket
1961-054	Filter funnel	–	300 mL	–	–
1960-009	Filter funnel	90 mm	1000 mL	#8 stopper	Integrated glass frit
10441000	Filter funnel; GV 025/0	24-25 mm	60 mL	–	Glass frit with PTFE centering ring
10441200	Filtration assembly	24-25 mm	60 mL	500 mL	Glass frit with PTFE centering ring
10442000	Filter funnel; GV 050/0	47-50 mm	250 mL	–	Glass frit with PTFE centering ring
10442100*	Filter funnel; GV 050/1	47-50 mm	250 mL	–	PTFE coated sieve with PTFE centering ring
10442200*	Filtration assembly	47-50 mm	250 mL	1 L	Glass frit with PTFE centering ring
10442300*	Filtration assembly	47-50 mm	250 mL	1 L	PTFE coated sieve with PTFE centering ring
10443000	Filter funnel; GV100/0	100 mm	500 mL	–	Glass frit with PTFE centering ring
10443100	Filter funnel; GV 100/1	100 mm	500 mL	–	PTFE coated sieve with PTFE centering ring

* *Supplied with silicone cap with air inlet*

3

High performance syringe filters

High performance syringe filters

Whatman™ Puradisc™ syringe filters

Filtration of your samples is important as a preventive maintenance step for HPLC or UHPLC analysis.

Keep unwanted particulate matter from entering the injector to increase column life, shorten run time, and optimize peak shape.

Features and benefits

- Pigment-free polypropylene (polycarbonate for Puradisc™ syringe filters 30 mm)
- Standard inlet and outlet Luer connectors
- Optional sterile, medical-grade blister pack
- Tube-tip format (optional) for accurate dispensing into a micro-vial
- Choice of membrane or glass microfiber filter media
- Choice of filter sizes (4, 13, 25 or 30 mm) to minimize sample loss
- Sterile* option for critical applications
- Wide range of membranes to suit different sample types

* *Refers to sterilization by filtration for small sample use which is an industry term for filters of pore size 0.2 µm or smaller as referenced in guidance such as EPA Guidance for Industry Sterile Drug Products Produced by Aseptic Processing — Current Good Manufacturing Practice Section IX, Part B (September 2004).*

Technical specifications

Puradisc™ syringe filters

	Puradisc™ 4 syringe filters	Puradisc™ 13 syringe filters	Puradisc™ 25 syringe filters	Puradisc™ 30 syringe filters
Housing	Polypropylene	Polypropylene	Polypropylene	Polycarbonate/ Polypropylene
Filtration area	0.2 cm^2	1.3 cm^2	4.2 cm^2	5.7 cm^2
Maximum pressure	75 psi (5.2 bar)	75 psi (5.2 bar)	75 psi (5.2 bar)	100 psi (6.9 bar)
Volume hold-up full housing with air purge	< 10 µL	< 25 µL	< 100 µL	< 50 µL
Dimensions	10.1 × 23.5 mm	16.3 × 19.8 mm	22.9 × 28.4 mm	26 × 34 mm
Weight	0.55 g	0.95 g	2.7 g	4.7 g
Volume throughput	Up to 2 mL	Up to 10 mL	Up to 100 mL	Up to 100 mL
Inlet connection	Female Luer lock	Female Luer lock	Female Luer lock	Female Luer lock
Outlet connection	Male Luer	Male Luer	Male Luer	Male Luer
Sterlization	Autoclave at 121°C (131°C max)	Autoclave at 121°C (131°C max)	Autoclave at 121°C (131°C max)	Autoclave at 121°C (131°C max)

Ordering information

Puradisc™ syringe filters 4 mm

	Catalog number			
Pore size (µm)	Nylon	PVDF	PTFE	Quantity/pack
Nonsterile with tube tip				
0.2	–	6777-0402	–	50
0.45	–	6777-0404	–	50
Sterile without tube tip				
0.2	6786-0402	6791-0402	–	50
Nonsterile without tube tip				
0.2	6789-0402	6779-0402	6784-0402	100
0.2	6790-0402	6792-0402	6783-0402	500
0.45	6789-0404	6779-0404	6784-0404	100
0.45	6790-0404	6792-0404	6783-0404	500

PTFE—Polytetrafluoroethylene
PVDF—Polyvinylidene difluoride

Ordering information

Puradisc™ syringe filters 13 mm (nonsterile)

	Catalog number									
Pore size (µm)	**CA**	**Nylon**	**PES**	**PVDF**	**PP**	**PTFE**	**GMF**	**RC**	**H-PTFE**	**Quantity/pack**
With tube tip										
0.2	–	–	–	6777-1302	–	6775-1302	–	–	–	50
0.2	–	–	–	–	–	10463703	–	–	–	100
0.45	–	–	–	6777-1304	–	6775-1304		–	–	50
0.45	–	–	–	–	–	10463713	–	–	–	100
Without tube tip										
0.1	–	6789-1301	–	–	–	6784-1301	–	-	-	100
0.2	–	6789-1302	6782-1302	6779-1302	6788-1302	6784-1302	–	6756-1302	6772-1302	100
0.2	–	6790-1302	–	6792-1302	6785-1302	6783-1302	–	6757-1302	6773-1302	500
0.2	–	6768-1302	–	6765-1302	–	6766-1302	–	6758-1302	6774-1302	2000
0.45	6771-1304	6789-1304	6782-1304	6779-1304	6788-1304	6784-1304	–	6756-1304	6772-1304	100
0.45	–	6790-1304	6781-1304	6792-1304	6785-1304	6783-1304	6818-1304	6757-1304	6773-1304	500
0.45	–	6768-1304	–	6765-1304	–	6766-1304	–	6758-1304	6774-1304	2000
1.0	–	–	–	–	–	6784-1310	–	-	-	100
5.0	–	–	–	–	–	6784-1350		-	-	100
GF/F 0.7*	–	–	–	–	–	–	6825-1307	-	-	100
GF/B 1.0*	–	–	–	–	–	–	6821-1310	-	-	100
GF/C™ 1.2*	–	–	–	–	–	–	6822-1312	-	-	100
GF/A 1.6*	–	–	–	–	–	–	6820-1316	-	-	100
GF/A 1.6	–	–	–		–	–	6806-1316	-	-	500
GF/D 2.7*	–	–	–	–	–	–	6823-1327	-	-	100
934-AH™ 1.5*	–	–	–	–	–	–	6827-1315	-	-	100

* Particle retention rating

CA—Cellulose acetate
GMF—Glass microfiber
PES—Polyethersulfone
PP—Polypropylene
PTFE—Polytetrafluoroethylene
PVDF—Polyvinylidene difluoride
RC—Regenerated cellulose
H-PTFE—Hydrophilic PTFE

Puradisc™ syringe filters 13 mm (sterile)

	Catalog number			
Pore size (µm)	**PVDF**	**PES**	**RC**	**Quantity/pack**
Without tube tip				
0.2	6791-1302	6780-1302	10462940	50
0.45	6791-1304	6780-1304	–	50
With tube tip				
0.2	6778-1302	–	10462945	50

Ordering information

Puradisc™ syringe filters 25 mm

	Catalog number									
Pore size (µm)	**Nylon**	**PES**	**PVDF**	**PP**	**PTFE**	**H-PTFE**	**GMF**	**DpPP**	**RC**	**Quantity/pack**
Sterile										
0.2	–	6780-2502	–	–	–	–	–	–	–	50
0.2	–	6794-2512	–	–	–	–	–	–	–	1000
0.45	–	6780-2504	–	–	–	–	–	–	–	50
0.45	–	6794-2514	–	–	–	–	–	–	–	1000
1.0	–	6780-2510	–	–	–	–	–	–	–	50
Nonsterile										
0.1	–	–	–	–	6784-2501	–	–	–	–	50
0.1	–	–	–	–	6798-2501	–	–	–	–	1000
0.2	6750-2502	–	6746-2502	6786-2502	6784-2502	6772-2502	–	–	6756-2502	50
0.2	6751-2502	6781-2502	6747-2502	6788-2502	6785-2502	6773-2502	–	–	6757-2502	200
0.2	6753-2502	6794-2502	–	6790-2502	6798-2502	6774-2502	–	–	6758-2502	1000
0.45	6750-2504	–	6746-2504	–	6784-2504	6772-2504	–	6786-2504	6756-2504	50
0.45	6751-2504	6781-2504	6747-2504	–	6785-2504	6773-2504	–	6788-2504	6757-2504	200
0.45	6752-2504	–	–	–	–	–	–	–	–	500
0.45	6753-2504	6794-2504	6749-2504	–	6798-2504	6774-2504	–	6790-2504	6758-2504	1000
0.7 GF/F*	–	–	–	–	–	–	6825-2517	–	–	50
0.7 GF/F*	–	–	–	–	–	–	6825-2527	–	–	200
0.7 GF/F*	–	–	–	–	–	–	6787-2520	–	–	1000
1.0	6750-2510	–	–	–	6784-2510	–	–	–	–	50
1.0	6751-2510	6781-2510	–	–	–	–	–	–	–	200
1.0	6753-2510	6794-2510	–	–	6798-2510	–	–	–	–	1000
1.0 GD 1*	–	–	–	–	–	–	6783-2510	–	–	100
1.0 GD 1*	–	–	–	–	–	–	6792-2510	–	–	1000
2.0 GD 2*	–	–	–	–	–	–	6783-2520	–	–	100

* *Particle retention rating*

DpPP—Polypropylene depth filter
GD—Graded density
GMF—Glass microfiber
H-PTFE = Hydrophilic PTFE
PES—Polyethersulfone
PP—Polypropylene
PTFE—Polytetrafluoroethylene
PVDF—Polyvinylidene difluoride
RC = Regenerated cellulose

Ordering information

Puradisc™ syringe filters 30 mm

	Catalog number						
Media/housing	**CA/PC**	**CN/ PC**	**PTFE/PP**	**PTFE/PC**	**RC/PP**		
Pore size (µm)						**Connection in/out**	**Quantity/pack**
0.2	10462200*	–	10463500*	–	–	FLL/ML	50
0.2	10462701	–	–	–	10462960*	FLL/ML	50
0.2	10462205*,†	–	–	–	–	FLL/MLL	50
0.2	10462710	–	10463503	–	–	FLL/ML	100
0.2	10462700	–	10463505	10462300*	–	FLL/ML	500
0.2	10462206	–	–	–	–	FLL/MLL	500
0.45	10462100*	–	–	–	10462950*	FLL/ML	50
0.45	10462601	–	–	–	–	FLL/ML	50
0.45	10462610	–	10463513	–	–	FLL/ML	100
0.45	10462600	–	10463515	–	–	FLL/ML	500
0.8	10462241	–	–	–	–	FLL/ML	50
0.8	10462240*	–	–	–	–	FLL/ML	50
0.8	10462243	–	–	–	–	FLL/ML	500
1.0	–	–	10463523	–	–	FLL/ML	100
1.0	–	–	10463525	–	–	FLL/ML	500
1.2	10462260*	–	–	–	–	FLL/ML	50
1.2	10462261	–	–	–	–	FLL/ML	50
1.2	10462263	–	–	–	–	FLL/ML	500
5.0	–	10462000*	–	–	–	FLL/ML	50
5.0	–	10462520	–	–	–	FLL/ML	50
5.0	–	10462510	10463533*	–	–	FLL/ML	100
5.0	–	10462500	10463535	–	–	FLL/ML	500

* *Sterile*

† *Edotoxin-free according to LAL test (USPXXII), sensitivity: 0.25 EU/mL*

CA—Cellulose acetate
CN—Cellulose nitrate
FLL—Female Luer lock
ML—Male Luer
MLL—Male Luer lock
PC—Polycarbonate
PP—Polypropylene
RC—Regenerated cellulose

4

Application specific syringe filters

Application specific syringe filters

Whatman™ SPARTAN™ HPLC certified syringe filters

SPARTAN™ syringe filters ensure reproducible results from the filtration of organic or aqueous solutions for HPLC. For batch-to-batch consistency, the SPARTAN™ range of filters is tested and certified for the absence of UV-absorbing substances at wavelengths of 210 and 254 nm with water, methanol, and acetonitrile.

Features and benefits

- Ready-to-use filter unit with a hydrophilic, low protein-binding membrane made of regenerated cellulose.
- Excellent chemical resistance against the standard aqueous and organic HPLC solvents.
- 13 mm diameter with extremely low dead volume < 10 µL.
- Use for any application requiring a chemically resistant, hydrophilic, low protein-binding membrane.
- Documented batch-to-batch quality and consistency ensure reproducible results.
- 13 mm diameter with Mini-Tip outlet provides minimized hold-up volume similar to a 4mm syringe filter.

Ordering information

SPARTAN™ HPLC certified syringe filters

Diameter (mm)	Pore size (µm)	Catalog number	Membrane/housing material	Connection (in/out)	Color code	Quantity/pack
13	0.2	10463040	RC/PP	FLL/Mini-tip	Dark brown	100
13	0.2	10463042	RC/PP	FLL/Mini-tip	Dark brown	500
13	0.2	10463100	RC/PP	FLL/ML	Dark brown	100
13	0.2	10463102	RC/PP	FLL/ML	Dark brown	500
13	0.45	10463030	RC/PP	FLL/Mini-tip	Light brown	100
13	0.45	10463032	RC/PP	FLL/Mini-tip	Light brown	500
13	0.45	10463110	RC/PP	FLL/ML	Light brown	100
13	0.45	10463112	RC/PP	FLL/ML	Light brown	500
30	0.2	10463062	RC/PP	FLL/ML	Dark brown	500
30	0.45	10463053	RC/PP	FLL/ML	Light brown	50
30	0.45	10463052	RC/PP	FLL/ML	Light brown	500

Technical tip

Download your SPARTAN™ HPLC certified syringe filter 13 and 30 batch certificate from the Internet to document the purity of each batch.

To download, visit **cytiva.com/support/quality/certificates**

Enter the lot number, and you will receive the lot-specific chromatogram and test conditions.

Whatman™ Anotop™ IC syringe filters

Anotop™ IC syringe filters for the preparation of samples for subsequent ion chromatography (IC) and HPLC analysis ensure very low levels of anion leaching.

Features and benefits

- 10 mm and 25 mm diameter syringe filters
- Each batch certified for IC
- Enhanced consistency of analytical results
- Extended column life
- Certified low levels of anion leaching for improved results

Whatman™ Anotop™ LC syringe filters

Use Anotop™ LC syringe filters for simple and effective preparation of samples prior to HPLC. These syringe filters preserve the life of your column by efficiently removing particulates from your analytical samples. Because the Anotop™ LC syringe filter is made from pigment-free polypropylene and the Anopore™ inorganic membrane, you can be sure that after filtration the level of extractable UV absorbing compounds is minimal.

Features and benefits

- Better consistency of analytical results and longer column life
- Extremely low levels of UV absorbing compounds for better HPLC results
- Easy to use with a wide range of sample types

Technical specifications

Anotop™ syringe filters

	Anotop™ 10 IC syringe filters	Anotop™ 10 LC syringe filters	Anotop™ 25 IC syringe filters	Anotop™ 25 LC syringe filters
Housing	Polypropylene	Polypropylene (pigment free)	Polypropylene	Polypropylene (pigment free)
Filtration area	0.78 cm^2	0.78 cm^2	4.78 cm^2	4.78 cm^2
Maximum pressure	100 psi (6.9 bar)	100 psi (6.9 bar)	100 psi (6.9 bar)	100 psi (6.9 bar)
Volume hold-up with air purge	< 20 µL	< 20 µL	< 150 µL	< 150 µL
Membrane diameter	10 mm	10 mm	25 mm	25 mm
Construction process	Thermal weld	Thermal weld	Thermal weld	Thermal weld
Extractable materials	Negligible	Negligible	Negligible	Negligible
Average membrane thickness	60 µm	60 µm	60 µm	60 µm
Device width	15.4 mm	15.4 mm	36.8 mm	36.8 mm
Device length	18.5 mm	18.5 mm	26.3 mm	26.3 mm
Inlet connection	Female Luer lock	Female Luer lock	Female Luer lock	Female Luer lock
Outlet connection	Male Luer	Male Luer	Male Luer	Male Luer
Membrane type	Anopore™ syringe filter	Anopore™ syringe filter	Anopore™ syringe filter	Anopore™ syringe filter

Anotop™ IC syringe filters

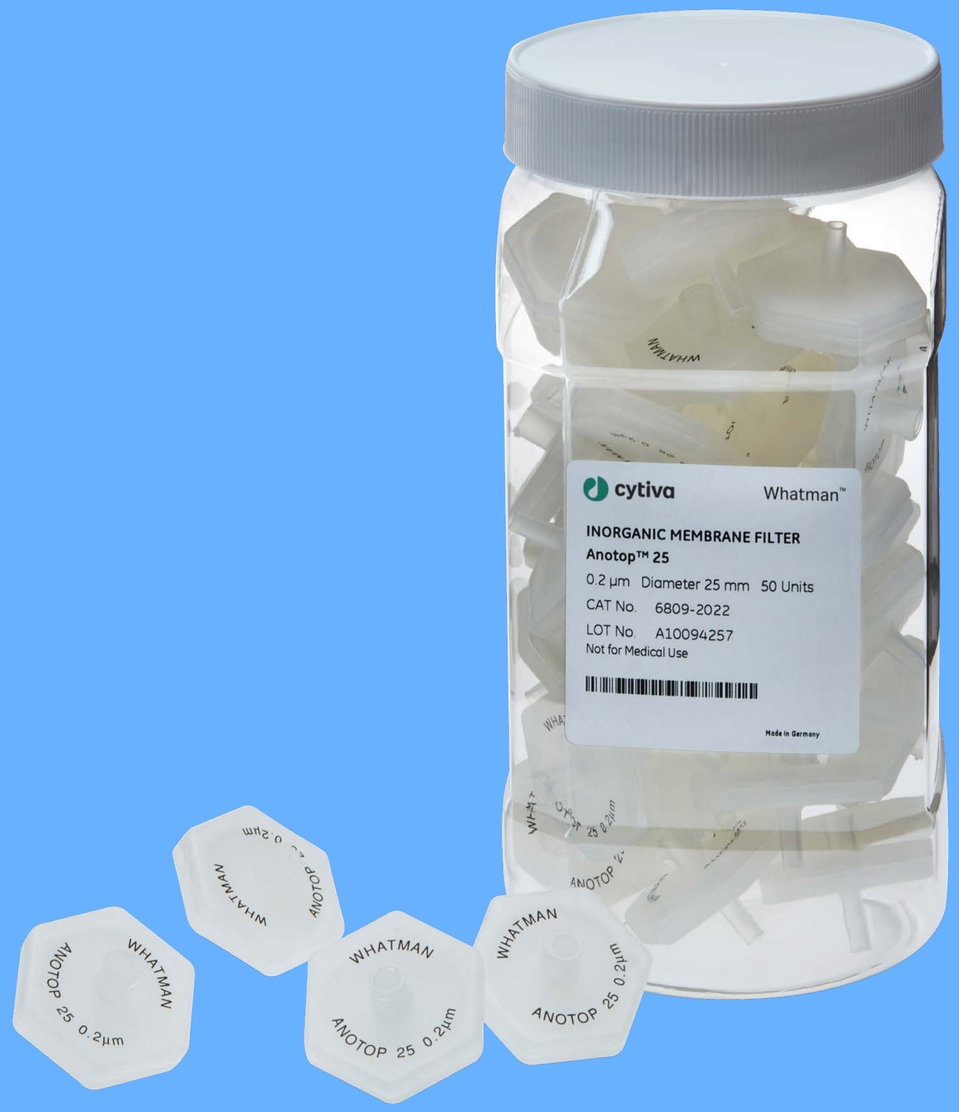
Anion	Level (ppb)	Anion	Level (ppb)
Fluoride	< 10	Phosphate	< 75
Chloride	< 15	Nitrite	< 30
Bromide	< 20	Nitrate	< 30
Sulfate	< 30	–	–

Typical average anion leaching levels in 18 MΩ × cm (MegaOhm × cm) water at 20°C

Ordering information

Anotop™ IC and Anotop™ LC syringe filters

Pore size (µm)	Membrane	Catalog number	Quantity/pack
Anotop™ 10 IC syringe filters			
0.2	Anopore™ syringe filters	6809-9233	100
0.2	Anopore™ syringe filters	6809-9234	200
Anotop™ 25 IC syringe filters			
0.2	Anopore™ syringe filters	6809-9244	200
Anotop™ 10 IC blister syringe filters			
0.2	Anopore™ syringe filters	6809-9232	50
0.2	Anopore™ syringe filters	6809-9235	250
Anotop™ 10 LC syringe filters			
0.2	Anopore™ syringe filters	2001-0100	100
0.2	Anopore™ syringe filters	2001-0200	200
Anotop™ 25 LC syringe filters			
0.2	Anopore™ syringe filters	2002-5100	100
0.2	Anopore™ syringe filters	2002-5200	200



5

Difficult to filter

Difficult to filter

Whatman GD/X™ syringe filters

The Whatman GD/X™ syringe filter range is specifically designed for difficult to filter, high particulate loaded samples. Constructed of a pigment-free polypropylene housing with a prefiltration stack of GMF 150 (graded density) and GF/F glass microfiber media, these filters remove sample contamination and allow you to filter even the most difficult samples with less hand pressure. Whatman GD/X™ syringe filters can process three to seven times more sample volume than standard syringe filters.

GMF 150 and GF/F are produced from 100% borosilicate glass microfiber. Graded density GMF 150 medium has a coarse top layer meshed with a fine bottom layer that retains particles to 1.0 µm. A GF/F filter then retains particles down to 0.7 µm. The prefilter stack ends with a final membrane. The filter construction facilitates exceptional loading capacity with fast flow rates. This prevents the build-up of back pressure typically caused by the blocking of an unprotected membrane.

Features and benefits

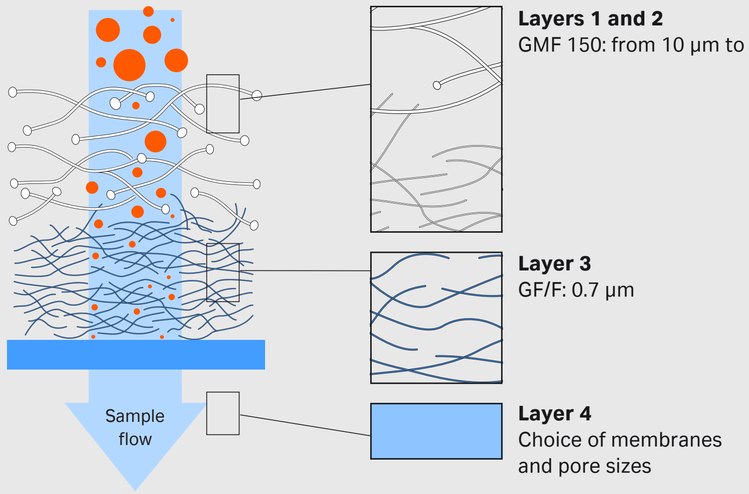
- 13 mm devices for samples up to 10 mL and 25 mm devices for samples greater than 10 mL. The volume of sample that can be filtered through each filter depends on the characteristics of the sample.
- Sterile options.
- Pigment-free polypropylene housing.
- Prefiltration stack of GMF 150 (graded density) and GF/F glass microfiber media.
- Minimizes sample contamination.
- Requires less hand pressure, even with the most difficult samples.
- Processes three to seven times more sample volume.

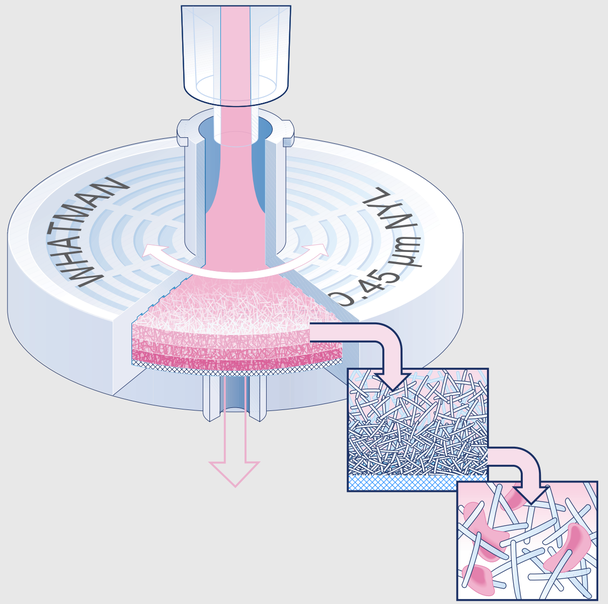
Technical specifications

Whatman GD/X™ syringe filters

	Whatman GD/X™ 13 mm syringe filters	Whatman GD/X™ 25 mm syringe filters
Housing	Polypropylene (pigment free)	Polypropylene (pigment free)
Filtration area	1.3 cm^2	4.6 cm^2
Maximum pressure	100 psi (6.9 bar)	75 psi (5.2 bar)
Volume hold-up*—full housing	0.5 mL	1.4 mL
—with air purge	50 µL (approx)	250 µL (approx)
Dimensions*	20.8 × 30.0 mm	20.8 × 30.0 mm
Weight	3 g (approx)	3 g (approx)
Flow direction	Flow should enter from the inlet	Flow should enter from the inlet
Inlet connection	Female Luer lock	Female Luer lock
Outlet connection	Male Luer	Male Luer
Sterlization	Autoclave at 121ºC (131ºC max) at 15 psi (1 bar) for 20 min	Autoclave at 121ºC (131ºC max) at 15 psi (1 bar) for 20 min
Glass microfiber prefiltration media	100% borosilicate glass fiber GMF 150 10 µm: 1 µm GF/F 0.7 µm	100% borosilicate glass fiber GMF 150 10 µm: 1 µm GF/F 0.7 µm

* *Housings are the same size but the filtration size is smaller*





Ordering information

Whatman GD/X™ syringe filters

Pore size (µm)	Catalog number	Media	Quantity/pack
Whatman GD/X™ 13 mm syringe filters—nonsterile			
0.2	6880-1302	CA	150
0.45	6880-1304	CA	150
0.2	6870-1302	Nylon	150
0.2	6871-1302	Nylon	1500
0.45	6870-1304	Nylon	150
0.45	6871-1304	Nylon	1500
0.2	6876-1302	PES	150
0.45	6876-1304	PES	150
0.2	6872-1302	PVDF	150
0.45	6872-1304	PVDF	150
0.45	6873-1304	PVDF	1500
0.2	6878-1302	PP‡	150
0.45	6878-1304	PP‡	150
0.2	6874-1302	PTFE	150
0.2	6875-1302	PTFE	1500
0.45	6874-1304	PTFE	150
0.45	6875-1304	PTFE	1500
1.6*	6882-1316	GF/A†	150
1.0*	6884-1310	GF/B†	150
1.2*	6886-1312	GF/C™†	150
2.7*	6888-1327	GF/D†	150
0.7*	6890-1307	GF/F†	150
0.45*	6894-1304	GMF	150
Whatman GD/X™ 25 mm syringe filters—nonsterile			
0.45	6882-2504	RC	150
0.2	6888-2502	RC	1500
0.45	6883-2504	RC	1500
0.2	6880-2502	CA	150
0.45	6880-2504	CA	150
0.45	6881-2504	CA	1500
0.2	6869-2502	Nylon high charge (positive)	150
0.45	6869-2504	Nylon high charge (positive)	150
0.2	6870-2502	Nylon	150
0.2	6871-2502	Nylon	1500
0.45	6870-2504	Nylon	150
0.45	6871-2504	Nylon	1500
5.0	6870-2550	Nylon	150
5.0	6871-2550	Nylon	1500

Pore size (µm)	Catalog number	Media	Quantity/pack
Whatman GD/X™ 25 mm syringe filters—nonsterile (continuation)			
0.2	6876-2502	PES	150
0.2	6905-2502	PES	1500
0.45	6876-2504	PES	150
0.45	6905-2504	PES	1500
0.2	6872-2502	PVDF	150
0.2	6873-2502	PVDF	1500
0.45	6872-2504	PVDF	150
0.45	6873-2504	PVDF	1500
0.2	6878-2502	PP	150
0.45	6878-2504	PP	150
0.45	6879-2504	PP	1500
0.2	6874-2502	PTFE	150
0.2	6875-2502	PTFE	1500
0.45	6874-2504	PTFE	150
0.45	6875-2504	PTFE	1500
1.6*	6882-2516	GF/A†	150
1.6*	6883-2516	GF/A†	1500
1.0*	6884-2510	GF/B†	150
1.2*	6886-2512	GF/C™†	150
2.7*	6888-2527	GF/D†	150
0.7*	6890-2507	GF/F†	150
0.7*	6891-2507	GF/F†	1500
0.45*	6894-2504	GMF†	150
0.45*	6895-2504	GMF†	1500
1.5*	6892-2515	934-AH™†	150
Whatman GD/X™ 25 mm syringe filters—sterile			
0.2	6896-2502	PES	50
0.45	6896-2504	PES	50
0.2	6900-2502	PVDF	50
0.45	6900-2504	PVDF	50
0.45*	6902-2504	GMF†	50
0.2	6901-2502	CA	50
0.45	6901-2504	CA	50

* *Glass microfiber particle retention rating*
† *Contains GMF 150 without the GF/F prefilter*
‡ *Mildly hydrophobic*

CA—Cellulose acetate
GF—Glass fiber
GMF - Glass microfiber
PES—Polyethersulfone
PP—Polypropylene
PTFE—Polytetrafluoroethylene
PVDF—Polyvinylidene difluoride
RC—Regenerated cellulose

Whatman™ GD/XP syringe filters

GD/XP disposable syringe filters are suitable for use with samples that require inorganic ion analysis, as levels of ion extractables are minimized. They are also an alternative choice for users requiring a filter that exhibits extremely low protein binding characteristics.

GD/XP syringe filters contain a two-layer prefilter stack comprised of 20 µm and 5 µm polypropylene filters. The last stage of filtration is by membrane, which is positioned below the prefilter stack

Technical specifications

GD/XP syringe filters

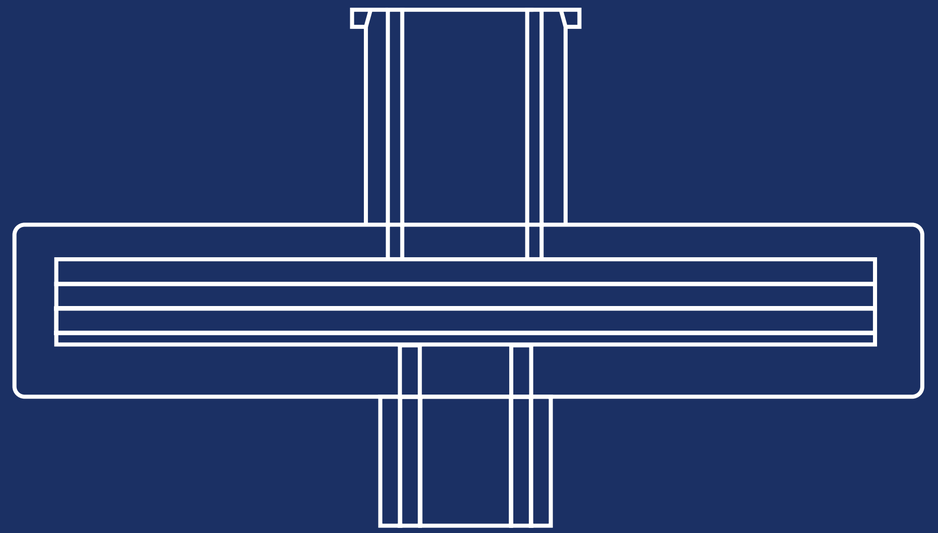
	GD/XP 13 mm syringe filters
Housing	Polypropylene (pigment free)
Filtration area	4.6 cm^2
Maximum pressure	75 psi (5.2 bar)
Volume hold-up full housing with air purge	1.4 mL 250 µL (approx)
Dimensions	20.8 × 30.0 mm
Weight	3 g (approx)
Flow direction	Flow should enter from the inlet
Inlet connection	Female Luer lock
Outlet connection	Male Luer
Sterlization	Autoclave at 121°C (131°C max) at 15 psi (1 bar) for 20 min
Prefiltration media	PP 20 µm: 5 µm

Ordering information

GD/XP syringe filters

Diameter (mm)	Pore size (µm)	Catalog number	Media	Hydrophilic	Quantity/pack
25	0.45	6970-2504	Nylon	Yes	150
25	0.45	6971-2504	Nylon	Yes	1500
25	0.45	6994-2504	PES	Yes	150
25	0.45	6995-2504	PES	Yes	1500
25	0.45	6972-2504	PVDF	Yes	150
25	0.45	6973-2504	PVDF	Yes	1500
25	0.45	6978-2504	PP	No	150
25	0.45	6992-2504	DpPP	No	150
25	0.45	6974-2504	PTFE	No	150
25	0.45	6993-2504	DpPP	No	1500

DpPP—Polypropylene depth filter
PES—Polyethersulfone
PP—Polypropylene
PVDF—Polyvinylidene difluoride
PTFE—Polytetrafluoroethylene



Whatman™ Anotop™ syringe filters 10 Plus and Whatman™ Anotop™ syringe filters 25 Plus

The Anotop™ Plus syringe filter offers the added benefit of an integral glass microfiber prefilter. This unit enables difficult and hard-to-filter solutions to be filtered without adversely affecting the filtration efficiency of the final membrane. This can remove the need for sample clean-up or expensive and time-consuming sequential filtration.

Technical specifications

Anotop™ syringe filters

	Anotop™ 10 Plus syringe filters	Anotop™ 25 Plus syringe filters
Housing	Polypropylene	Polypropylene
Filtration area	0.78 cm^2	4.78 cm^2
Maximum pressure	100 psi (6.9 bar)	100 psi (6.9 bar)
Volume hold-up	< 30 µL	< 200 µL
Prefilter type	Glass microfiber (binderless)	Glass microfiber (binderless)
Membrane diameter	10 mm	25 mm
Membrane type	Anopore™ syringe filters	Anopore™ syringe filters
Average membrane thickness	60 µm	60 µm
Device width	15.4 mm	36.8 mm
Device length	18.5 mm	26.3 mm
Device shape	Hexagonal	Hexagonal
Construction process	Thermal weld	Thermal weld
Inlet connection	Female Luer lock	Female Luer lock
Outlet connection	Male Luer	Male Luer
Protein adsorption	Medium/High	Medium/High
Extractable materials	Low	Low
Cytotoxicity	Non-cytotoxic	Non-cytotoxic

Ordering information

Anotop™ syringe filters

Pore size (µm)	Media	Catalog number	Quantity/pack
Anotop™ 10 Plus syringe filters			
0.02	Anopore™ with prefilter	6809-3002	50
0.1	Anopore™ with prefilter	6809-3012	50
0.2	Anopore™ with prefilter	6809-3022	50
0.02	Anopore™ with prefilter, sterile	6809-3102	50
0.1	Anopore™ with prefilter, sterile	6809-3112	50
0.2	Anopore™ with prefilter, sterile	6809-3122	50
Anotop™ 25 Plus syringe filters			
0.02	Anopore™ with prefilter	6809-4002	50
0.1	Anopore™ with prefilter	6809-4012	50
0.2	Anopore™ with prefilter	6809-4022	50
0.02	Anopore™ with prefilter, sterile	6809-4102	50
0.1	Anopore™ with prefilter, sterile	6809-4112	50
0.2	Anopore™ with prefilter, sterile	6809-4122	50
0.2	Anopore™ with prefilter	6809-4024	200

6

All-in-one filters and filter vials

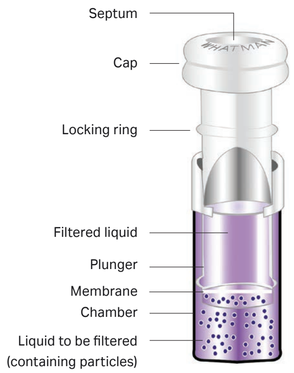
All-in-one filters and filter vials

Products to support easier HPLC workflow that can be utilized with most common autosamplers.

Whatman™ Mini-UniPrep™ syringeless filters

The Mini-UniPrep™ syringeless filters are compatible with most autosamplers

- Easy-to-use design supports sample preparation outside of the lab if needed.
- Process samples in one third the time of traditional syringe filtration.
- Replaces syringe, syringe filter, vial, and cap in one consumable.
- Polypropylene or glass chamber options to prevent interference from chemical leaching.
- Amber vials available for light sensitive samples.
- Multi-compressors available for ease of use.
- 12 × 33 mm vial can be used to filter up to 400 µL.



Features and benefits

- All-in-one filtration process allows you to process sample loads in one-third of the time.
- Wide range of membrane choices from 0.2 and 0.45 µm pore sizes to meet specific sample application requirements.
- Compatible with most major autosamplers.
- Fewer consumables are required, reducing costs by up to 40%.

A variety of Mini-UniPrep™ filters to meet your needs

- Amber Mini-UniPrep™ is available for customers who need to filter light-sensitive samples.
- Slit septa Mini-UniPrep™ is available for customers using robotics to maximize throughput.

Amber Whatman™ Mini-UniPrep™ filter vial

Features and benefits

- Amber colorant prevents photodegradation of light sensitive samples.
- Same colorant used in pharmaceutical containers designed to meet United States Pharmacopeia specifications for light resistance.
- Translucent amber chamber and plunger enable easy visual inspection.

Slit septa Whatman™ Mini-UniPrep™ filter vial

Features and benefits

- Slit septum cap enables Mini-UniPrep™ filter vial use with current robotics on HPLC instruments for high throughput automation.
- Durable yet flexible slit septum cap has been specially designed for instruments with sensitive sampling needs. Sample evaporation is minimal.
- Pre-slit septa allows easier needle penetration.

Selection

Mini-UniPrep™ filtering media

Sample type	Suitable Mini-UniPrep™ media
High particulate laden liquids	Glass microfiber (GMF)
Aqueous/organic samples in 3 to 10 pH range	Nylon (NYL)
General filtration media/solvent based samples	Polypropylene (PP)
Chemically aggressive solutions	Polytetrafluoroethylene (PTFE)
Biological samples requiring low protein binding media	Regenerated cellulose (RC) or polyethersulfone (PES)
Aqueous/organic solvents, low nonspecific protein binding media	Polyvinylidene difluoride (PVDF) or regenerated cellulose (RC)
Aqueous/organic solvents, high flow and loading capacity	Polypropylene depth filter, non-woven PP fibers

Technical specifications

Mini-UniPrep™ integrated syringeless filters and filter vials

Sample type	Suitable Mini-UniPrep™ media
Dimensions	Equivalent in size to 12 × 32 mm vials
Materials of construction	
Housing and cap	Polypropylene
Filter media	As specified
Septa	PTFE coated silicone rubber
Filtering capacity	0.4 mL
Nominal force needed to compress	Approximately 18 lbs/8.2 kg
Maximum operating temperature	120°F (50°C)

Ordering information

Mini-UniPrep™ integrated syringeless filters and filter vials

Pore size (µm)	Catalog number	Media	Quantity/pack
Standard cap—translucent housing			
0.2	UN203NPENYL	Nylon	100
0.2	UN503NPENYL	Nylon	1000
0.45	UN203NPUNYL	Nylon	100
0.45	UN503NPUNYL	Nylon	1000
0.2	UN203NPEPES	PES	100
0.45	UN203NPUPES	PES	100
0.45	UN503NPUPES	PES	1000
0.2	UN203NPEAQU	PVDF	100
0.2	UN503NPEAQU	PVDF	1000
0.45	UN203NPUAQU	PVDF	100
0.45	UN503NPUAQU	PVDF	1000
0.2	UN203NPERC	RC	100
0.2	UN503NPERC	RC	1000
0.45	UN203NPURC	RC	100
0.45	UN503NPURC	RC	1000
0.2	UN203NPEORG	PTFE	100
0.2	UN503NPEORG	PTFE	1000
0.45	UN203NPUORG	PTFE	100
0.45	UN503NPUORG	PTFE	1000
0.2	UN203NPEPP	PP	100
0.2	UN503NPEPP	PP	1000
0.45	UN203NPUPP	PP	100
0.45	UN503NPUPP	PP	1000
0.45	UN203NPUDPP	DpPP	100
0.45	UN503NPUDPP	DpPP	1000
0.45	UN203NPUGMF	GMF	100
0.45	UN503NPUGMF	GMF	1000
Accessories: multi-compressor			
–	MUPMCPBC8	Mini-UniPrep™ multi-compressor 1/pack comes with one tray	
–	MUPMCBT8	Mini-UniPrep™ multi-compressor tray 1/pack	

PES—Polyethersulfone
PTFE—Polytetrafluoroethylene
PVDF—Polyvinylidene difluoride
RC—Regenerated cellulose
DpPP—Polypropylene depth filter
GMF—Glass microfiber
PP—Polypropylene

Pore size (µm)	Catalog number	Media	Quantity/pack
Slit septum cap, translucent housing			
0.2	US203NPENYL	Nylon	100
0.2	US503NPENYL	Nylon	1000
0.45	US203NPUNYL	Nylon	100
0.2	US203NPEPES	PES	100
0.2	US503NPEPES	PES	1000
0.45	US203NPUPES	PES	100
0.2	US203NPEAQU	PVDF	100
0.2	US503NPEAQU	PVDF	1000
0.45	US203NPUAQU	PVDF	100
0.45	US503NPUAQU	PVDF	1000
0.2	US203NPEORG	PTFE	100
0.2	US503NPEORG	PTFE	1000
0.45	US203NPUORG	PTFE	100
0.45	US503NPUORG	PTFE	1000
0.2	US203NPEPP	PP	100
0.2	US503NPEPP	PP	1000
0.45	US203NPUPP	PP	100
0.45	US503NPUPP	PP	1000
0.45	US203NPUDPP	DpPP	100
0.45	US503NPUDPP	DpPP	1000
0.45	US203NPUGMF	GMF	100
0.45	US503NPUGMF	GMF	1000
Amber housing (for light sensitive samples), standard cap			
0.2	UN203APENYL	Nylon	100
0.45	UN203APUNYL	Nylon	100
0.2	UN203APEPES	PES	100
0.45	UN203APUPES	PES	100
0.2	UN203APEAQU	PVDF	100
0.45	UN203APUAQU	PVDF	100
0.2	UN203APEORG	PTFE	100
0.45	UN203APUORG	PTFE	100
0.2	UN203APEPP	PP	100
0.45	UN203APUPP	PP	100
0.45	UN203APUDPP	DpPP	100
0.45	UN203APUGMF	GMF	100
Amber housing (for light sensitive samples), slit septum cap			
0.45	US203APUNYL	Nylon	100

Whatman™ Mini-UniPrep™ G2 integrated syringeless filters and glass vials

The Mini-UniPrep™ G2 integrated syringless filters include an integral borosilicate glass vial housed within the plunger and a borosilicate glass chamber for holding the unfiltered liquid. It offers the same great Mini-UniPrep™ performance while minimizing the risk of extractable compounds from a plastic housing that might otherwise leach into your sample.

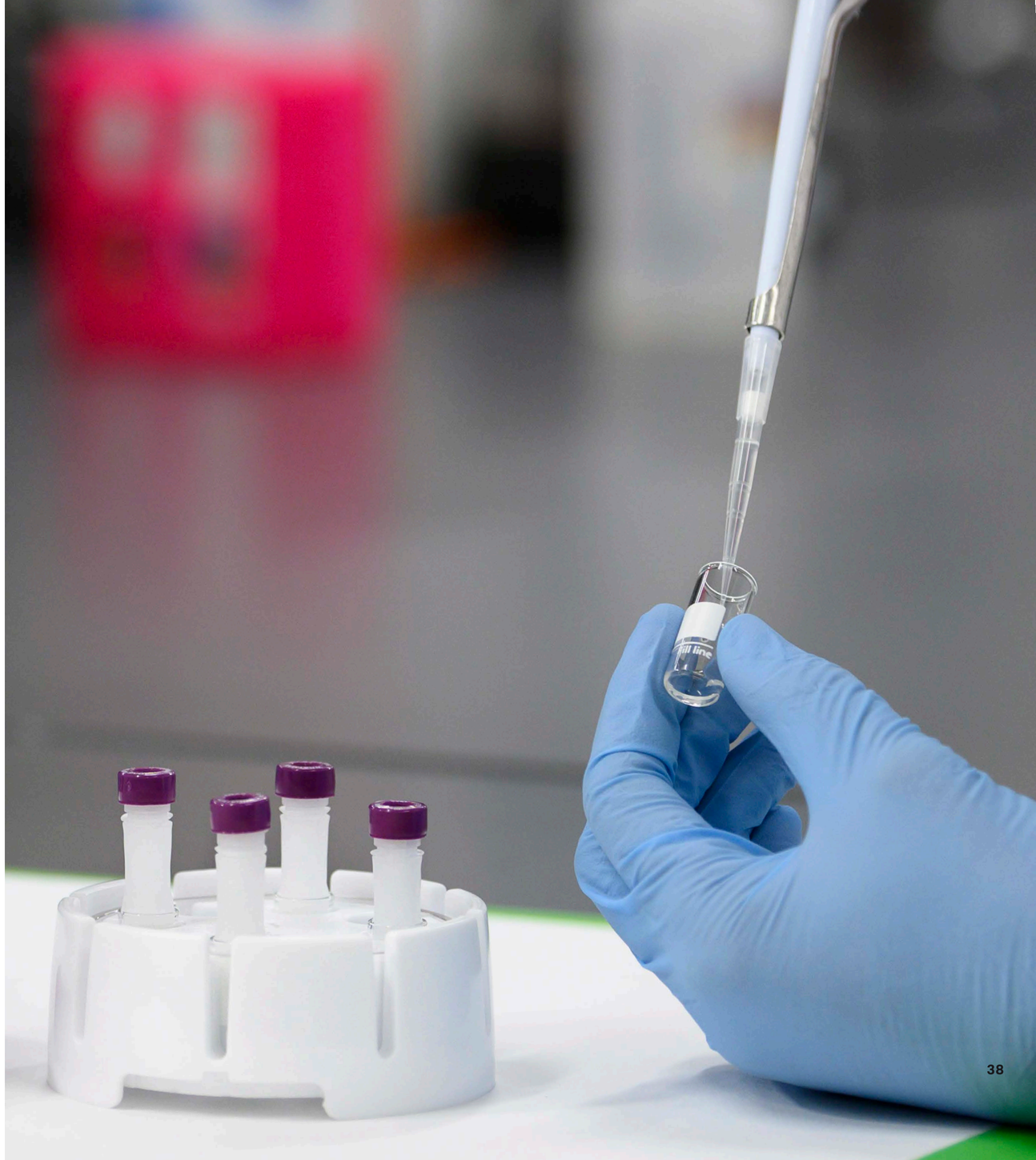
Technical specifications

Mini-UniPrep™ G2 integrated syringeless filters and glass vials

Dimensions	Once compressed, equivalent in size to 12 mm × 32 mm vial
Materials of construction	Chamber: Borosilicate glass Polypropylene (PP) Polytetrafluoroethylene (PTFE) Regenerated cellulose (RC) or polyethersulfone (PES) Polyvinylidene difluoride (PVDF) or regenerated cellulose (RC) Polypropylene depth filter, non-woven PP fibers
Maximum operating temp.	50°C (122°F)
Filtering capacity	Chamber (unfiltered sample): 500 µL Inner storage vial (filtered sample): 330 µL Recommended minimum filtering volume: 220 µL placed in the chamber to obtain 50 µL in inner storage vial
Nominal force needed to compress	Approx. 11.3 kg (25 lbs)
Autosampler compatibility	Any autosampler that accommodates standard 12 mm × 32 mm profile vials
Autosampler needle height adjustment	5 mm from bottom of Mini-UniPrep™ G2.

Liquid storage capacity

Volume (µL)	Height of liquid in inner glass reservoir (mm)
50	4.3
100	7.0
150	10.3
200	12.4
250	15.4
300	18.4
350	21.4
410 (max.)	25.0



Ordering information

Mini-UniPrep™ G2 integrated syringeless filters and glass vials

Pore size (µm)	Membrane	Housing	Cap	Catalog number, 100 pack	Catalog number, 1000 pack	Catalog number, starter pack*
0.2	PTFE	Translucent	Normal	GN203NPEORG	GN503NPEORG	GN203NPEORGSP
0.2	PTFE	Translucent	Slit septum	GS203NPEORG	GS503NPEORG	GS203NPEORGSP
0.2	PTFE	Amber	Normal	GN203APEORG	–	GN203APEORGSP
0.45	PTFE	Translucent	Normal	GN203NPUORG	GN503NPUORG	GN203NPUORGSP
0.45	PTFE	Translucent	Slit septum	GS203NPUORG	GS503NPUORG	GS203NPUORGSP
0.2	PVDF	Translucent	Normal	GN203NPEAQU	GN503NPEAQU	GN203NPEAQUSP
0.2	PVDF	Translucent	Slit septum	GS203NPEAQU	GS503NPEAQU	GS203NPEAQUSP
0.2	PVDF	Amber	Normal	GN203APEAQU	–	GN203APEAQUSP
0.45	PVDF	Translucent	Normal	GN203NPUAQU	GN503NPUAQU	GN203NPUAQUSP
0.45	PVDF	Translucent	Slit septum	GS203NPUAQU	GS503NPUAQU	GS203NPUAQUSP
0.2	RC	Translucent	Normal	GN203NPERC	GN503NPERC	GN203NPERCSP
0.45	RC	Translucent	Normal	GN203NPURC	GN503NPURC	GN203NPURCSP
0.2	Nylon	Translucent	Normal	GN203NPENYL	GN503NPENYL	GN203NPENYLSP
0.2	Nylon	Translucent	Slit septum	GS203NPENYL	GS503NPENYL	GS203NPENYLSP
0.2	PP	Translucent	Normal	GN203NPEPP	GN503NPEPP	GN203NPEPPSP
0.2	PP	Translucent	Slit septum	GS203NPEPP	–	GS203NPEPPSP
0.45	Glass fiber	Translucent	Normal	GN203NPUGMF	GN503NPUGMF	GN203NPUGMFSP
0.45	Glass fiber	Translucent	Slit septum	GS203NPUGMF	–	GS203NPUGMFSP
Hand compressor						
Mini-UniPrep™ G2 hand compressor 1/pack						MUPG2HCPWC1
Multi-compressor						
Mini-UniPrep™ G2 multi-compressor 1/pack, comes with one tray						MUPG2MCPWC8
Mini-UniPrep™ G2 multi-compressor tray 1/pack						MUPG2MCWT8

* *Starter pack includes 100 filters with hand compressor*

PTFE—Polytetrafluoroethylene
PVDF—Polyvinylidene difluoride
RC—Regenerated cellulose
PP—Polypropylene

7

Advantage syringe filters

Advantage syringe filters

Whatman™ Uniflo™ syringe filters

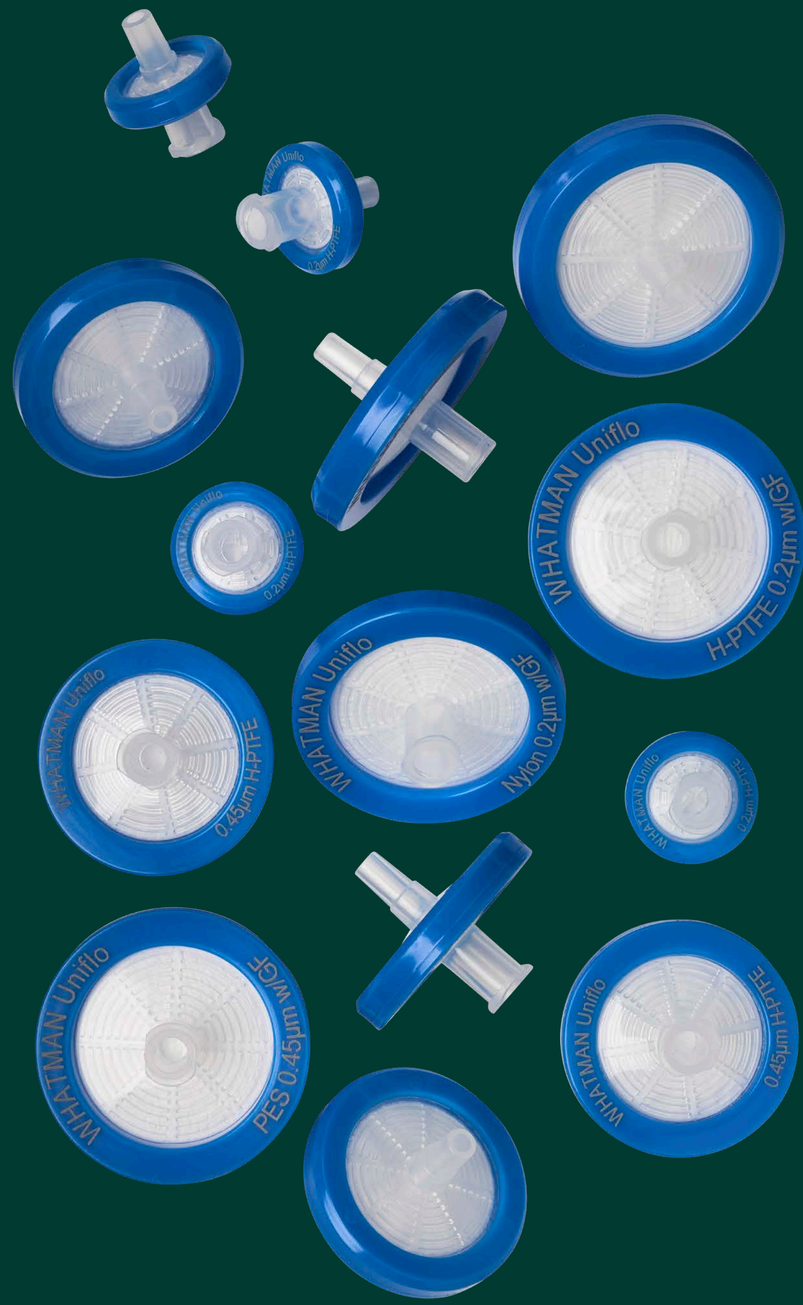
Reliable quality, economical portfolio for basic applications.

- Choice of filter sizes: 13, 25 or 30 mm
- Available in 6 membrane types
- Laser etched printing on the filter for easy identification

Technical specifications

Whatman™ Uniflo™ syringe filters

	Whatman™ Uniflo™ 13 mm syringe filters	Whatman™ Uniflo™ 25 mm syringe filters	Whatman™ Uniflo™ 30 mm w/GF pre-filter syringe filter
Dimensions	19.6 mm × 16.9 mm	24.5 mm × 29.2 mm	24.5 mm × 24.5 mm
Filtration area	0.88 cm²	3.45 cm²	4.98 cm²
Operation pressure	65.2 psi	65.2 psi	67.5 psi
Housing	Polypropylene	Polypropylene	Polypropylene
Volume hold up	≤ 50 µL after air purge	≤ 100 µL after air purge	≤ 200 µL after air purge
Flow direction	Flow should enter from inlet	Flow should enter from inlet	Flow should enter from inlet
Inlet connectors	Female Luer Lock	Female Luer Lock	Female Luer Lock
Outlet connectors	Male slip Luer	Male slip Luer	Male slip Luer
Sterilization	Autoclave at 121°C at 15 psi for 20 minutes	Autoclave at 121°C at 15 psi for 20 minutes	Autoclave at 121°C at 15 psi for 20 minutes
Biosafe	Polymer grade and membrane types meet the USP test requirements (for Class VI Plastics)	Polymer grade and membrane types meet the USP test requirements (for Class VI Plastics)	Polymer grade and membrane types meet the USP test requirements (for Class VI Plastics)
Pre-filtration media	N/A	N/A	100% borosilicate glass



Ordering information

Whatman™ Uniflo™ syringe filters

		Non-sterile, 13 mm		
Membrane†	Nylon	PES	PTFE	Quantity
Pore size (µm)				
0.2	9910-1302	9912-1302	9911-1302	500/pack
0.45	9910-1304	9912-1304	9911-1304	500/pack

		Non-sterile, 25 mm				
Membrane†	Nylon	PES	PTFE	PVDF	H-PTFE	Quantity
Pore size (µm)						
0.2	9910-2502	9912-2502	9911-2502	9909-2502	9921-2502	500/pack
0.45	9910-2504	9912-2504	9911-2504	9909-2504	9921-2504	500/pack

		Non-sterile, 30 mm with GF* prefilter				
Membrane†	Nylon	PES	PTFE	PVDF	H-PTFE	Quantity
Pore size (µm)						
0.2	9930-3002	9924-3002	9928-3002	9926-3002	9932-3002	500/pack
0.45	9930-3004	9924-3004	9928-3004	9926-3004	9932-3004	500/pack

* *GF = glass fiber*
† *PES = Polyethersulfone; PTFE = Polytetrafluoroethylene; PVDF = Polyvinylidene difluoride; H-PTFE = Hydrophilic polytetrafluoroethylene*
‡ *For a full list of products visit cytiva.com*

	Sterile, 13 mm	Non-sterile, 13 mm		
Membrane*	PES	PES	PVDF	Quantity
Pore size (µm)				
0.2	9916-1302	–	–	100/pack
0.45	9916-1304	–	–	100/pack
0.2	–	9914-2502	9913-2502	45/pack
0.45	–	9914-2504	9913-2504	45/pack

* *PES = Polyethersulfone; PVDF = Polyvinylidene difluoride*

For full list of products visit
cytivalifesciences.com/shop/whatman-uniflo-syringe-filters-p-05975

8
Filters for automated systems

Filters for automated systems

Whatman™ Roby for robotic systems

Cytiva's Roby syringe filters for robotic systems were developed specifically for automated sample filtration and are available with various membranes. For difficult-to-filter samples, Roby syringe filters are also available with an integral glass fiber prefilter.

The filter housing is made from mechanically stable polypropylene. The external geometry of the filter housing ensures simple and smooth filter transport from the storage turntable to the filtration site and easy filter changing.

Features and benefits

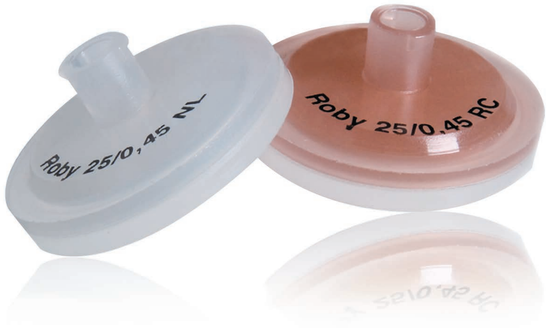
- Optimized for automatic dissolution test systems
- Mechanically stable polypropylene
- Easy filter changing
- Ensures simple and smooth filter transport

Roby Filter Validation Kit

The Roby Filter Validation Kit includes step-by-step instructions for essential selection tests. Instructions include all important properties in an at-a-glance format.

Features

- **Five types of filters:** five tubes each with 25 filters
- Filter validation protocol with filter selection aid



Ordering information

Roby syringe filters for automation

Diameter (mm)	Pore size (µm)	Description	Catalog number	Media/housing	Connection in/out	Color code	Quantity/ pack
25	0.45	Roby NL	10463803	NYL/PP	FLL/ML	Yellow	200[†]
25	0.45	Roby NL	10463802	NYL/PP	FLL/ML	Yellow	1000
25	0.45	Roby RC	10463806	RC/PP	FLL/ML	Translucent brown	1000
25	0.45	Roby RC-GF92	10463809	RC-GF/PP	FLL/ML	Brown	200*
25	0.45	Roby RC-GF92	10463808	RC-GF/PP	FLL/ML	Brown	1000
25	0.7	Roby GF55	10463814	GF/PP	FLL/ML	Natural	200*
25	0.7	Roby GF55	10463815	GF/PP	FLL/ML	Natural	1000
25	1.0	Roby GF92	10463801	GF/PP	FLL/ML	Natural	200*
25	1.0	Roby GF92	10463800	GF/PP	FLL/ML	Natural	1000
25	–	Filter Validation Kit[†]	10463898	–	FLL/ML	–	1

* *8 tubes with 25 pieces each*
† *Filter Validation Kit includes: Roby NL; Roby RC; Roby RC-GF92; Roby GF55; Roby GF92*

ML—Male Luer
FLL—Female Luer lock
NYL—Nylon
PP—Polypropylene
RC—Regenerated cellulose

Whatman™ 850-DS Channel Filter Plate

The 850-DS 8-Channel Filter Plate is a disposable plate for use in the Agilent™ 850-DS Dissolution Sampling Station, used for automated sample preparation in dissolution testing.

Automated dissolution sample preparation for increased productivity

The filter plates are exclusively designed for use with the optional filter module on the Agilent™ 850-DS Dissolution Sampling Station to simplify filter replacement between timepoints. Reliable alignment of the liquid path increases productivity in two ways: First, by reducing the risk of jamming, and second, by reducing leaks that may occur with manual sampling or other dissolution sample preparation systems.

Save time and eliminate errors associated with manual sampling. Use 850-DS 8-channel filter plates in your Agilent™ 850-DS Dissolution Sampling Station.

- **Automated processing:** up to 8 samples simultaneously
- **Readily available:** in a wide range of pore sizes and materials

850-DS 8-channel filter plates have been developed in conjunction with Agilent™. They are available in a wide range of pore sizes and materials.

Ordering information

850-DS 8-Channel Filter Plate

Pore size (µm)	Media	Catalog number	Quantity/pack
0.45	PTFE	7707-3000	50
0.45	Nylon	7707-3100	50
0.45	PES	7707-3200	50
0.7	GMF	7707-3300	50
0.2	PTFE	7707-3400	50
0.2	Nylon	7707-3500	50
0.2	PES	7707-3600	50
0.2	PVDF	7707-3700	50
0.45	PVDF	7707-3800	50
1.0	GMF	7707-3900	50

9
General laboratory accessories

General laboratory accessories

In addition to the filtration consumable range, we provide a comprehensive range of accessories for routine work in your laboratory.

Whatman™ pH indicator and test papers combine ease of use with exceptional accuracy and consistency. The convenience of using indicator papers for the rapid determination of pH values has led to many applications in laboratories and industry.

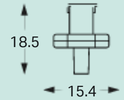
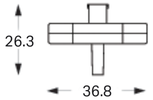
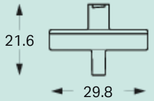
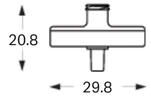
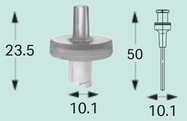
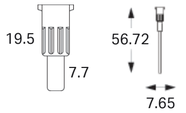
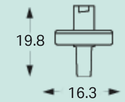
Lenses and other optical surfaces made from glass, quartz or plastic can be easily scratched if you do not clean them with a very soft surface. High-quality Whatman™ lens cleaning tissue provides the solution. The tissue is chemically pure and free from silicones and other additives. Most importantly, it can be relied on to safely remove surface moisture and grease

Ordering information

General laboratory accessories

Description	Product name	Dimension	Quantity	Product code
Phase separation paper • Separatory funnel replacement: Automatic cut-off • Ease of use: no special training required	1PS Phase separator paper	Diam. 125 mm	100/pack	2200-125
		Diam. 150 mm	100/pack	2200-150
Optical lens cleaning tissue • Soft tissue for removing surface moisture and grease from lenses and other optical surfaces	Grade 105	100 × 150 mm	25 wallets of 25 sheets	2105-841
		200 × 300 mm	100/pack	2105-862
Benchkote™ bench protection papers • High-quality, smooth, absorbent Whatman™ paper • Quickly absorbs liquid spills and protect the working surface • Benchkote™ Plus is thicker and more absorbent	Benchkote™	460 × 570 mm	50/pack	2300-916
		460 mm × 50 m	1/pack	2300-731
	Benchkote™ Plus	500 × 600 mm	50/pack	2301-6150
		600 mm × 50 m	1/pack	2301-6160
pH Indicator Paper • Range of pH indicator and test papers for rapid results	Color Bonded, 0.0 to 14.0 range	6 × 80 mm	100 strips, 1/pack	2613-991
	Standard Full Range, Reel, 1.0 to 14.0 range	7 mm × 5 m	1/pack	2600-100A
	Standard Narrow Range, Reel, 4.0 to 7.0 range	7 mm × 5 m	1/pack	2600-102A
Pump protection filters • Protects vacuum pump systems from aqueous aerosols. Hydrophobic PTFE membranes retain 99,99% of airborne particles > 0.1 µm	Vacu-Guard	50 mm	10/pack	6722-5000
Filtration flask for batch filtration • Consists of a 250 mL glass filtration funnel and 1000 mL flask, funnel base, top, and clamp • Good choice for use with Whatman™ filtration membranes	GV050/2 vacuum filtration unit	N/A	N/A	10442200

Technical data of syringe filters

Name	Diameter (mm)	Housing material*	Max. operating pressure (psi/bar)	Effective filter area (cm^2)	Hold-up volume after air purging (µL)	Inlet*	Outlet*	Dimensions (mm)
Anotop™ 10 syringe filters, Anotop™ 10 Plus syringe filters, Anotop™ 10 IC syringe filters	10	PP	100/6.9	0.78	Anotop™ 10 & 1C syringe filters: < 20 Anotop™ 10 Plus syringe filters: < 30	FLL	ML	
Anotop™ 25 syringe filters, Anotop™ 25 Plus syringe filters, Anotop™ 25 IC syringe filters	25	PP	100/6.9	4.78	Anotop™ 25 & 1C syringe filters: < 150 Anotop™ 25 Plus syringe filters: < 200	FLL	ML	
Whatman GD/X™ 13 syringe filters	13	PP	75/5.2	1.3	50 (approx)	FLL	ML	
Whatman GD/X™ 25 syringe filters, GD/XP	25	PP	75/5.2	4.6	250 (approx)	FLL	ML	
Puradisc™ 4 with and without tip (all membranes apart from PVDF)	4	PP	75/5.2	0.2	< 10	FLL	ML	
Puradisc™ 4 with and without tip (PVDF membrane only)	4	PP	75/5.2	0.2	< 10	FLL	ML Tube Tip	
Puradisc™ 13 syringe filters	13	PP	75/5.2	1.3	< 25	FLL	ML	

** FLL = Female Luer lock; ML = Male Luer; MLL = Male Luer lock; PP = Polypropylene*

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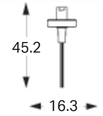
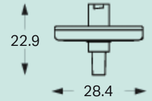
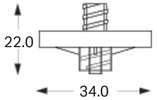
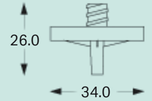
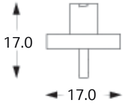
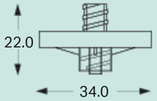
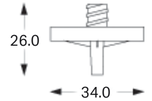
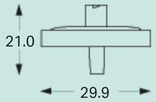
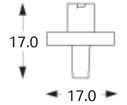
Name	Diameter (mm)	Housing material*	Max. operating pressure (psi/bar)	Effective filter area (cm^2)	Hold-up volume after air purging (µL)	Inlet*	Outlet*	Dimensions (mm)
Puradisc™ 13 with Tube Tip	13	PP	75/5.2	1.3	< 25	FLL	Tube Tip	
Puradisc™ 25 syringe filters	25	PP	75/5.2	4.2	< 100	FLL	ML	
Puradisc™ FP syringe filters	30	PC	100/6.9	5.7	≤ 50	FLL	MLL	
Puradisc™ FP syringe filter, Aqua 30	30	PC	100/6.9	5.7	≤ 50	FLL	ML	
ReZist™ 13, SPART AN™ 13 with Mini-Tip in-line disk filter	13	PP	100/6.9	0.75	≤ 10	FLL	Mini-Tip	
ReZist™ 30 in-line disk filter	30	PP	100/6.9	5.7	≤ 50	FLL	MLL	
ReZist™ 30 in-line disk filter, SPARTAN™ 30 HPLC syringe filter	30	PP	100/6.9	5.7	≤ 50	FLL	ML	
Roby 25	25	PP	100/6.9	4.2	≤ 50	FLL	ML	
SPARTAN™ 13 HPLC syringe filter	13	PP	100/6.9	0.75	≤ 10	FLL	ML	

** FLL = Female Luer lock; ML = Male Luer; MLL = Male Luer lock; PP = Polypropylene*

Chemical compatibility of membranes and housings*

Solvent	ANP	CA	CN	PC	PE	GMF	NYL	PP	DpPP	PES	H-PTFE	PTFE‡	PVDF	RC
Acetic acid, 5%	R	LR	R	R	–	R	R	R	R	R	R	R	R	R
Acetic acid, glacial	R	NR	NR	–	–	R	LR	R	R	R	R	R	R	NR
Acetone	R	NR	NR	NR	R	R	R	R	R	NR	R	R	NR	R
Acetonitrile	R	NR	NR	–	–	R	R	R	R	NR	R	R	R	R
Ammonia, 6 N	NR		NR	NR	LR	LR	R	R	R	R	R	R	LR	LR
Amyl acetate	LR	NR	NR	NR	R	R	R	R	R	LR	R	R	LR	R
Amyl alcohol	R	LR	LR	–	–	R	R	R	R	NR	R	R	R	R
Benzene†	R	R	R	NR	R	R	LR	NR	NR	R	R	R	R	R
Benzyl alcohol†	R	LR	LR	LR	R	R	LR	R	R	NR	R	R	R	R
Boric acid	R	R	R	R	R	R	LR	R	R	–	–	R	R	R
Butyl alcohol	R	R	R	R	R	R	R	R	R	R	R	R	R	R
Butyl chloride†	–	–	–	–	–	R	NR	NR	NR	–	–	R	R	–
Carbon tetrachloride†	R	NR	R	LR	R	R	LR	NR	NR	NR	R	R	R	R
Chloroform†	R	NR	R	NR	R	R	NR	LR	LR	NR	R	R	R	R
Chlorobenzene†	R	–	LR	NR	–	R	NR	LR	–	NR	–	R	R	R
Citric acid	–	–	–	–	–	R	LR	R	–	R	–	R	R	R
Cresol	–	NR	R	–	–	R	NR	NR	NR	NR	–	R	NR	R
Cyclohexane	R	NR	NR	R	R	R	NR	NR	NR	NR	–	R	R	R
Cyclohexanone	R	NR	NR	–	–	R	NR	R	R	NR	R	R	R	R
Diethylacetamide	–	NR	NR	–	–	R	R	R	R	–	–	R	NR	R
Dimethylformamide	LR	NR	NR	–	–	R	R	R	R	NR	R	R	NR	LR
Dioxane	R	NR	NR	NR	R	R	R	R	R	LR	–	R	LR	R
DMSO	LR	NR	NR	NR	R	R	R	R	R	NR	R	R	LR	LR
Ethanol	R	R	NR	R	R	R	R	R	R	R	–	R	R	R
Ethers	R	LR	LR	R	R	R	R	NR	NR	R	R	R	LR	R

ANP = Anopore™
CA = Cellulose acetate
CN = Cellulose nitrate
DpPP = Polypropylene depth filter
GMF = Glass microfiber
NYL = Nylon; PC = Polycarbonate
PE = Polyester
PES = Polyethersulfone
PP = Polypropylene
H-PTFE = Hydrophilic Polytetrafluoroethylene
PTFE = Polytetrafluoroethylene
PVDF = Polyvinylidene difluoride
RC = Regenerated cellulose
R = Resistant
LR = Limited Resistance
NR = Not Recommended

† *Short Term Resistance of Housing.*
‡ *Membrane may need pre-wetting with isopropanol/methanol if filtering a polar liquid.*
The above data is to be used as a guide only. Testing prior to application is recommended.

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Solvent	ANP	CA	CN	PC	PE	GMF	NYL	PP	DpPP	PES	H-PTFE	PTFE‡	PVDF	RC
Ethyl acetate	R	NR	NR	NR	R	R	R	R	R	NR	R	R	NR	R
Ethylene glycol	R	LR	LR	R	R	R	R	R	R	R	R	R	R	R
Formaldehyde	LR	LR	R	R	R	R	R	LR	LR	R	R	R	R	LR
Freon TF	R	R	R	R	R	R	NR	NR	NR	R	–	R	R	–
Formic acid	–	LR	LR	–	–	R	NR	R	R	R	–	R	R	LR
Hexane	R	R	R	R	R	R	R	R	R	R	R	R	R	R
Hydrochloric acid, conc.	NR	NR	NR	NR	NR	R	NR	LR	LR	R	R	R	R	NR
Hydrofluoric acid	–	NR	NR	–	–	NR	NR	LR	LR	–	–	R	R	NR
Isobutyl alcohol	R	LR	LR	R	R	R	R	R	R	–	R	R	R	R
Isopropyl alcohol	R	R	LR	–	–	R	R	R	R	–	R	R	R	R
Methanol	R	R	NR	R	R	R	R	R	R	R	R	R	R	R
Methyl ethyl ketone	R	LR	NR	NR	R	R	R	R	R	NR	R	R	NR	R
Methylene chloride†	R	NR	LR	–	–	R	NR	LR	LR	NR	R	R	R	R
Nitric acid, conc.	–	NR	NR	LR	NR	R	NR	NR	NR	NR	R	R	R	NR
Nitric acid, 6 N	–	LR	LR	–	–	R	NR	LR	LR	LR	R	R	R	LR
Nitrobenzene†	LR	NR	NR	NR	R	R	LR	R	R	NR	–	R	R	R
Pentane	R	R	R	R	R	R	R	NR	NR	R	–	R	R	R
Perchloroethylene	R	R	R	–	–	R	LR	NR	NR	NR	R	R	R	R
Phenol 0.5%	LR	LR	R	–	–	R	NR	R	R	NR	–	R	R	R
Pyridine	R	NR	NR	NR	R	R	LR	R	R	NR	R	R	NR	R
Sodium hydroxide, 6N	NR	NR	NR	NR	NR	NR	LR	R	R	R	R	R	NR	NR
Sulfuric acid, conc.	NR	NR	NR	NR	NR	R	NR	NR	NR	NR	R	R	NR	NR
Tetrahydrofuran	R	NR	NR	–	–	R	R	LR	LR	NR	R	R	R	R
Toluene†	R	LR	R	NR	R	R	LR	LR	LR	NR	R	R	R	R
Trichloroethane†	R	NR	LR	NR	R	R	LR	LR	LR	NR	R	R	R	R
Trichloroethylene†	R	–	R	–	–	R	NR	LR	LR	NR	R	R	R	R
Water	R	R	R	R	R	R	R	R	R	R	R	R	R	R
Xylene†	R	R	R	–	–	R	LR	LR	LR	LR	R	R	R	R

ANP = Anopore™
CA = Cellulose acetate
CN = Cellulose nitrate
DpPP = Polypropylene depth filter
GMF = Glass microfiber
NYL = Nylon; PC = Polycarbonate
PE = Polyester
PES = Polyethersulfone
PP = Polypropylene
H-PTFE = Hydrophilic Polytetrafluoroethylene
PTFE = Polytetrafluoroethylene
PVDF = Polyvinylidene difluoride
RC = Regenerated cellulose
R = Resistant
LR = Limited Resistance
NR = Not Recommended

† *Short Term Resistance of Housing.*
‡ *Membrane may need pre-wetting with isopropanol/methanol if filtering a polar liquid.*

The above data is to be used as a guide only. Testing prior to application is recommended.

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