



# Whatman™ syringe filter and filter vial collection

Outstanding performance and choice



# Small details of filtration technique and product selection can have a big impact on final results

## Whatman syringe filters and filter vials

While filtration is fundamental and well established, identifying the appropriate filter can be challenging due to the vast number of filter options available and the many sample/analytical parameters that need to be considered. Using a suboptimal or incorrect filter may result in unexpected peaks from leachables, premature column blocking, and/or instrument downtime causing unnecessary delays to your work.

To take the guess work out of filter selection and to help you choose the right filter, we have provided a quick application guide in this brochure. Additionally, interactive filter selection tools are available.



The online version can be found at [www.gelifesciences.com/LabFilterSelector](http://www.gelifesciences.com/LabFilterSelector).



iPad™ and Android™ versions can be found in the Apple™ and Google™ app stores. Please search for “Whatman Filters.”

Whatman filters are suitable for sample preparation in applications such as

- Pharmaceutical quality control
- Food and beverage analysis
- Environmental analysis
- General filtration applications

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## Featured products

Whatman GD/X syringe filters are designed for filtering hard-to-filter samples. The specially designed prefiltration stack enables processing of three to seven times more sample volume with decreased hand pressure.

Mini-UniPrep and Mini-UniPrep G2 simplify and speed up HPLC/UHPLC sample preparation by eliminating multiple consumables. These devices act both as filters and autosampler vials.

Puradisc syringe filters provide quick, efficient filtration of samples up to 100 ml. The availability of a wide range of membranes enables the user to match a filter to their application needs, while offering quality and economy.



A selection of Whatman syringe filters and filter vials.

## Technical and safety tips

### Technical tip

The Whatman syringe and syringeless filters are single use for convenience, speed, and performance. We advise against reusing them, since fine particulates that are too small to be visible to the naked eye may cause cross-contamination and compromise your results.

### Safety

Syringe use can result in high pressure. The smaller the syringe, the higher the pressure that can be generated. As a general guide, the following pressures can be obtained by hand with the syringes indicated:

- 20 ml – 30 psi (2 bar)
- 10 ml – 50 psi (3.4 bar)
- 5 ml – 75 psi (5.2 bar)
- 3 ml – 100 psi (6.9 bar)

Individual users should determine the pressure they generate by hand with a specific size syringe and take appropriate safety precautions not to exceed the recommended rating for the filter used. If recommended ratings are exceeded the filter may burst.

# Quick application guide

Whatman products are among the industry leaders in separations technology, and our analytical sample filtration collection is no exception. Every filter is manufactured to exacting specifications that ensure reliable results and uncompromised performance.

**Puradisc Aqua 30**

12 13



**Puradisc FP**

3\* 4 9\*

11 14

\*Notes:  
3 and 9: CA



**ReZist**

1 4 7 14





Start here

Applications

**Anotop**

3 4 6 7 8

9 10\* 11 14

\*Notes: 0.02 µm



**Anotop Plus**

4 5 7 10\*

\*Notes: 0.02 µm



**Roby**

2



**SPARTAN**

4 7 9 14



**Whatman GD/X**

4 5 7 11 14



1. Air venting
2. Automated filtration of samples/  
Tablet dissolution testing
3. Biological sample preparation
4. Capillary electrophoresis
5. Difficult to filter samples  
(high solid content samples)
6. Filtration of colloidal material
7. HPLC/UHPLC sample preparation
8. Ion chromatography
9. Filtration of protein containing samples
10. Filtration of nano particles
11. Sterile filtration (use sterile filter  
and membrane with pore size 0.2 µm)
12. COD/TOC/DOC
13. Trace metal analysis (ICP/AAS/ICP-MS)
14. UV/VIS analysis

COD = Chemical oxygen demand;  
TOC = Total organic carbon;  
DOC = Dissolved organic carbon  
Note: For guidance only. Only a selection  
of applications shown above

**Puradisc**

3\* 4 7 9\*

11 12 13\* 14

\*Notes:  
3 & 9: CA, PES, PVDF  
12 & 13: PES



**Mini-UniPrep G2**

2 7



**Mini-UniPrep**

2 7



**GD/XP**

4 5 7 8

12 13 14



Select your filter online: [www.gelifesciences.com/LabFilterSelector](http://www.gelifesciences.com/LabFilterSelector)





Filter vials

# Mini-UniPrep filter vials for increased throughput

Whatman Mini-UniPrep Syringeless Filters provide a faster, easier way to remove particulates from samples being prepared for HPLC/UHPLC analysis. Syringeless filters simplify your workflow and reduce waste generated in the lab by replacing four different components with one Mini-UniPrep.

Two versions are available:

The Mini-UniPrep G2 with a glass storage vial, and the original Mini-UniPrep polypropylene version.



One Mini-UniPrep unit replaces the use of a syringe, a syringe filter, a vial and a cap.

## Features:

- Consists of an autosampler vial, plunger with attached membrane filter, and septum/cap
- Designed to be loaded directly into the autosampler
- Compatible with any autosampler that accommodates standard 12 × 32 mm profile vials (needle height of the autosampler may need adjusting)
- Slit septum versions available
- Amber housing versions for light-sensitive samples available

## Benefits:

- Replaces syringe, syringe filter, vial, and cap
- Time savings with multicompressors (6 or 8 positions)
- Waste and cost reduction
- Compressed Mini-UniPrep is a visual indication that the sample has been filtered
- Minimizes instrument downtime due to unfiltered samples



## Mini-UniPrep G2 Syringeless Filter with inner glass storage vial

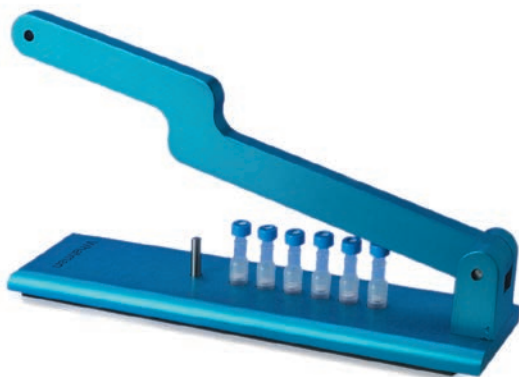
- Inner storage vials made of borosilicate glass
- Glass construction minimizes the risk of leachables contaminating the sample
- Use with hand-held manual compressor or multicompressor shown below



## Mini-UniPrep Syringeless Filter Polypropylene housing

- Polypropylene housing
- Use with 6-position multicompressor

Please turn to pages 7 and 8 for ordering information.



The multicompressor for the Mini-UniPrep polypropylene version can filter up to 6 samples simultaneously.



Right: The Mini-UniPrep G2 multicompressor can filter up to 8 samples simultaneously. Left: Mini-UniPrep G2 filter in a hand compressor.

# Typical data

## Mini-UniPrep and Mini-UniPrep G2 filter vials

	Mini-UniPrep	Mini-UniPrep G2
Dimensions	Equivalent in size to 12 mm × 32 mm vials	Equivalent in size to 12 × 32 mm vials
Materials of construction		
Chamber:	Polypropylene	Borosilicate glass
Plunger housing:	Polypropylene	Polypropylene
Plunger inner storage vial:	N/A	Borosilicate glass
Filter medium:	As specified	As specified
Septum:	Silicone with PTFE liner	Silicone with PTFE liner
Cap:	Polypropylene	Polypropylene
Maximum operating temp	50°C (122°F)	50°C (122°F)
Max. unfiltered sample capacity	400 µl	500 µl
Max. filtered sample capacity	350 µl	330 µl
Dead volume	50 µl	170 µl
Recommended minimum filtering volume	100 µl	220 µl placed in the chamber to obtain 50 µl in inner storage vial
Nominal force needed to compress	Approx. 8.2 kg (18 lbs)	Approx. 11.3 kg (25 lbs)
Autosampler needle height adjustment:	3 mm from the bottom of Mini-UniPrep	5 mm from the bottom of Mini-UniPrep G2
Autosampler compatibility	Any autosampler that accommodates standard 12 × 32 mm profile vials	Any autosampler that accommodates standard 12 × 32 mm profile vials



## Ordering Information

### Mini-UniPrep G2 filter vials with inner glass storage vial

*Note: Adjust autosampler needle height to a minimum of 5 mm from the bottom of the Mini-UniPrep G2.*

Membrane	Pore size (µm)	Housing	Cap	Product code 100/pack	Product code 1000/pack	Product code Starter pack (100/pack + Hand compressor)
PTFE*	0.2	Translucent	Normal	GN203NPEORG	GN503NPEORG	GN203NPEORGSP
PTFE	0.2	Translucent	Slit septum	GS203NPEORG	GS503NPEORG	GS203NPEORGSP
PTFE	0.2	Amber	Normal	GN203APEORG	–	GN203APEORGSP
PTFE	0.45	Translucent	Normal	GN203NPUORG	GN503NPUORG	GN203NPUORGSP
PTFE	0.45	Translucent	Slit septum	GS203NPUORG	GS503NPUORG	GS203NPUORGSP
PVDF*	0.2	Translucent	Normal	GN203NPEAQU	GN503NPEAQU	GN203NPEAQUSP
PVDF	0.2	Translucent	Slit septum	GS203NPEAQU	GS503NPEAQU	GS203NPEAQUSP
PVDF	0.2	Amber	Normal	GN203APEAQU	–	GN203APEAQUSP
PVDF	0.45	Translucent	Normal	GN203NPUAQU	GN503NPUAQU	GN203NPUAQUSP
PVDF	0.45	Translucent	Slit septum	GS203NPUAQU	GS503NPUAQU	GS203NPUAQUSP
RC*	0.2	Translucent	Normal	GN203NPERC	GN503NPERC	GN203NPERCSP
RC	0.45	Translucent	Normal	GN203NPURC	GN503NPURC	GN203NPURCSP
Nylon	0.2	Translucent	Normal	GN203NPENYL	GN503NPENYL	GN203NPENYLSP
Nylon	0.2	Translucent	Slit septum	GS203NPENYL	GS503NPENYL	GS203NPENYLSP
Polypropylene	0.2	Translucent	Normal	GN203NPEPP	GN503NPEPP	GN203NPEPPSP
Polypropylene	0.2	Translucent	Slit septum	GS203NPEPP	–	GS203NPEPPSP
Glass fiber	0.45	Translucent	Normal	GN203NPUGMF	GN503NPUGMF	GN203NPUGMFSP
Glass fiber	0.45	Translucent	Slit septum	GS203NPUGMF	–	GS203NPUGMFSP

## Compressors

### Description

### Product code

Mini-UniPrep G2 Hand Compressor 1/pack	MUPG2HCPWC1
Mini-UniPrep G2 Multi-Compressor 1/pack, comes with one tray	MUPG2MCPWC8
Mini-UniPrep G2 Multi-Compressor Tray 1/pack	MUPG2MCWT8

\* PTFE = polytetrafluoroethylene; PVDF = polyvinylidene difluoride; RC = regenerated cellulose



## Mini-UniPrep filter vial with polypropylene housing

**Note:** Adjust autosampler needle height to a minimum of 3 mm from the bottom of the Mini-UniPrep.

Membrane	Pore size (µm)	Housing	Cap	Product code 100/pack	Product code 1000/pack
PTFE*	0.2	Translucent	Standard	UN203NPEORG	UN503NPEORG
PTFE	0.2	Translucent	Slit septum	US203NPEORG	US503NPEORG
PTFE	0.2	Amber	Standard	UN203APEORG	
PTFE	0.45	Translucent	Standard	UN203NPUORG	UN503NPUORG
PTFE	0.45	Translucent	Slit septum	US203NPUORG	US503NPUORG
PTFE	0.45	Amber	Standard	UN203APUORG	
PVDF*	0.2	Translucent	Standard	UN203NPEAQU	UN503NPEAQU
PVDF	0.2	Translucent	Slit septum	US203NPEAQU	US503NPEAQU
PVDF	0.2	Amber	Standard	UN203APEAQU	
PVDF	0.45	Translucent	Standard	UN203NPUAQU	UN503NPUAQU
PVDF	0.45	Translucent	Slit septum	US203NPUAQU	US503NPUAQU
PVDF	0.45	Amber	Standard	UN203APUAQU	
PES*	0.2	Translucent	Standard	UN203NPEPES	UN503NPEPES
PES	0.2	Translucent	Slit septum	US203NPEPES	US503NPEPES
PES	0.2	Amber	Standard	UN203APEPES	
PES	0.45	Translucent	Standard	UN203NPUPES	UN503NPUPES
PES	0.45	Amber	Standard	UN203APUPES	
PES	0.45	Translucent	Slit septum	US203NPUPES	US503NPUPES
RC*	0.2	Translucent	Standard	UN203NPERC	UN503NPERC
RC	0.45	Translucent	Standard	UN203NPURC	UN503NPURC
Nylon	0.2	Translucent	Standard	UN203NPENYL	UN503NPENYL
Nylon	0.2	Translucent	Slit septum	US203NPENYL	US503NPENYL
Nylon	0.2	Amber	Standard	UN203APENYL	
Nylon	0.45	Translucent	Standard	UN203NPUNYL	UN503NPUNYL
Nylon	0.45	Translucent	Slit septum	US203NPUNYL	US503NPUNYL
Nylon	0.45	Amber	Standard	UN203APUNYL	
PP*	0.2	Translucent	Standard	UN203NPEPP	UN503NPEPP
PP	0.2	Translucent	Slit septum	US203NPEPP	US503NPEPP
PP	0.2	Amber	Standard	UN203APEPP	
PP	0.45	Translucent	Standard	UN203NPUPP	UN503NPUPP
PP	0.45	Translucent	Slit septum	US203NPUPP	US503NPUPP
PP	0.45	Amber	Standard	UN203APUPP	
DpPP*	0.45	Translucent	Standard	UN203NPUDPP	UN503NPUDPP
DpPP	0.45	Translucent	Slit septum	US203NPUDPP	US503NPUDPP
DpPP	0.45	Amber	Standard	UN203APUDPP	
Glass fiber	0.45	Translucent	Standard	UN203NPUGMF	UN503NPUGMF
Glass fiber	0.45	Translucent	Slit septum	US203NPUGMF	US503NPUGMF
Glass fiber	0.45	Amber	Standard	UN203APUGMF	

## Multi Compressor

### Description

### Product code

Multi Compressor - 6 positions 1/pack

CR0000006

\* RC = regenerated cellulose, PVDF = Polyvinylidene difluoride, PTFE = Polytetrafluoroethylene, PP = Polypropylene, PES = Polyethersulfone, DpPP: Polypropylene depth filter





Syringe Filters

# Whatman GD/X Syringe Filters

The Whatman GD/X range is specifically designed for high particulate-loaded samples. Constructed of a pigment-free polypropylene housing with a prefiltration stack of Whatman GMF 150 (graded density) and GF/F glass microfiber media, these filters 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 a syringe filter containing a single filtration layer.



Whatman GD/X Syringe Filters

GMF 150 and GF/F are produced from 100% borosilicate glass microfiber. The graded density GMF 150 filtration medium has a coarse top layer meshed with a fine bottom layer that retains particles to 1.0  $\mu\text{m}$ . A GF/F filter then retains particles down to 0.7  $\mu\text{m}$ . The prefilter stack ends with a final membrane filter.

Whatman GD/X filter construction facilitates exceptional loading capacity with fast flow rates.

This multilayer construction prevents the premature build up of back pressure typically associated with single filtration layer syringe filters.

## Features

- 13 mm and 25 mm diameter syringe filters
- 13 mm filters are recommended for samples up to 10 ml, and 25 mm filters for samples greater than 10 ml (however, 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 Whatman GMF 150 (graded density) and GF/F glass microfiber media

## Benefits

- Requires less hand pressure, even with difficult samples
- Processes three to seven times more sample volume

## Applications

Whatman GD/X Syringe Filters are well suited for heavily particulate-laden samples found in:

- Dissolution testing
- Content uniformity
- Concentration analysis
- Food analysis
- Environmental samples
- Composite assay

*Please turn to page 12 for ordering information*

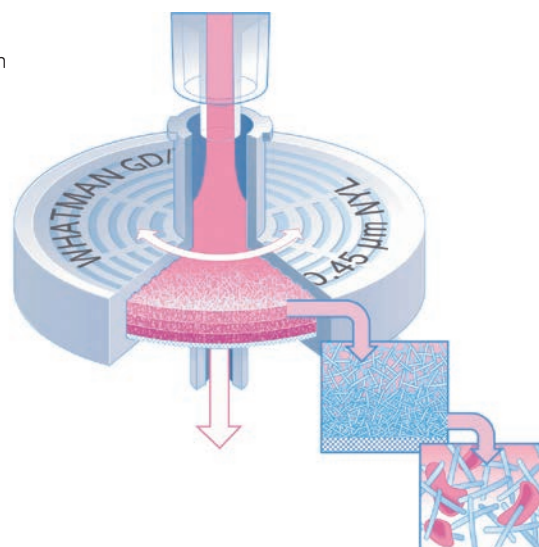
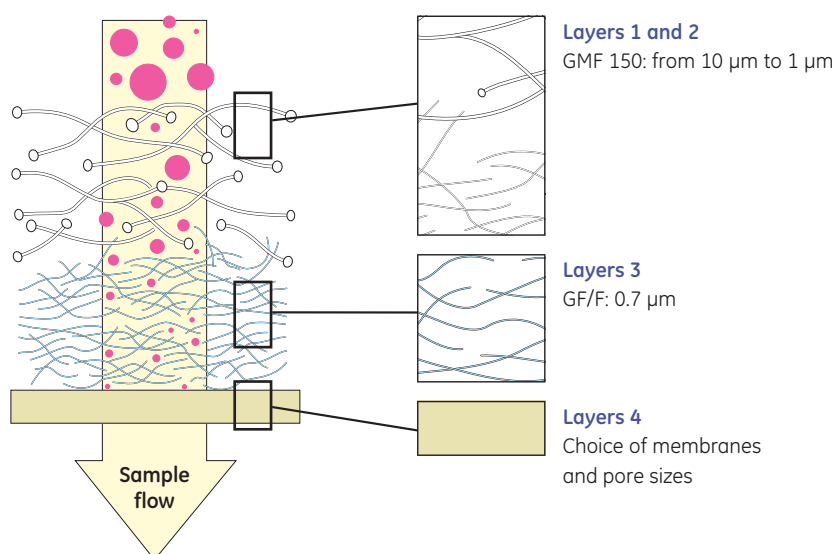


# Typical data

## Whatman GD/X Syringe Filters

Membrane	GD/X 13 mm	GD/X 25 mm
Housing	Polypropylene (pigment-free)	Polypropylene (pigment-free)
Filtration area	1.3 cm <sup>2</sup>	4.6 cm <sup>2</sup>
Maximum pressure	100 psi (6.9 bar)	75 psi (5.2 bar)
Volume "hold-up" full housing with air purge	0.5 ml 50 µl (approx)	1.4 ml 250 µl (approx)
Dimensions	21.6 × 29.8 mm	20.8 × 29.8 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
Sterilization*	Autoclave at 121°C at 15 psi for 20 min	Autoclave at 121°C at 15 psi for 20 min
Glass microfiber prefiltration media	100% borosilicate GMF 150 10 µm: 1 µm GF/F 0.7 µm	100% borosilicate GMF 150 10 µm: 1 µm GF/F 0.7 µm

\* Applies to nonsterile filters only. Do not autoclave sterile GD/X filters.



Whatman GD/X Syringe filters contain several filtration layers that substantially reduce blockage and increase volume throughput.

# Ordering information

## Whatman GD/X Syringe Filters

Membrane*	Pore size (µm)	Diameter (mm)	Nonsterile		Sterile	
			150/pack	1500/pack	50/pack	500/pack
Nylon high charge (positive)	0.2	25	6869-2502			
Nylon high charge (positive)	0.45	25	6869-2504			
Nylon	0.2	13	6870-1302	6871-1302		
Nylon	0.2	25	6870-2502	6871-2502		
Nylon	0.45	13	6870-1304	6871-1304		
Nylon	0.45	25	6870-2504	6871-2504		
Nylon	5	25	6870-2550	6871-2550		
PVDF	0.2	13	6872-1302			
PVDF	0.2	25	6872-2502	6873-2502	6900-2502	
PVDF	0.45	13	6872-1304	6873-1304		
PVDF	0.45	25	6872-2504	6873-2504	6900-2504	
PTFE	0.2	13	6874-1302	6875-1302		
PTFE	0.2	25	6874-2502	6875-2502		
PTFE	0.45	13	6874-1304	6875-1304		
PTFE	0.45	25	6874-2504	6875-2504		
PES	0.2	13	6876-1302			
PES	0.2	25	6876-2502	6905-2502	6896-2502	6897-2502
PES	0.45	13	6876-1304			
PES	0.45	25	6876-2504	6905-2504	6896-2504	6897-2504
PP	0.2	13	6878-1302			
PP	0.2	25	6878-2502			
RC	0.2	25	6887-2502			
RC	0.45	25	6882-2504	6883-2504		
CA	0.2	13	6880-1302			
CA	0.2	25	6880-2502		6901-2502	
CA	0.45	13	6880-1304			
CA	0.45	25	6880-2504		6901-2504	
GF/A†	1.6†	13	6882-1316			
GF/A†	1.6†	25	6882-2516	6883-2516		
GF/B‡	1†	13	6884-1310			
GF/B‡	1†	25	6884-2510			
GF/C‡	1.2†	13	6883-1312			
GF/C‡	1.2†	25	6886-2512			
GF/D‡	2.7†	13	6888-1327			
GF/D‡	2.7†	25	6888-2527			
GF/F‡	0.7†	13	6890-1307			
GF/F‡	0.7†	25	6890-2507	6891-2507		
GF/F‡	0.45†	13	6894-1304			
934-AH†	1.5†	25	6892-2515			
GMF†	0.45†	25	6894-2504	6895-2504	6902-2504	

\* PP = Polypropylene; CA = Cellulose acetate; PES = Polyethersulfone; GF = Glass fiber; PVDF = Polyvinylidene difluoride; GMF = Glass microfiber; PTFE = Polytetrafluoroethylene

† Glass microfiber particle retention rating

‡ Contains GMF 150 without the GF/F prefilter



# GD/XP Syringe Filters

Whatman GD/XP disposable syringe filters are designed 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 composed of 20 µm and 5 µm polypropylene filters.

The last stage of filtration is a choice of membrane, which is positioned below the prefilter stack.

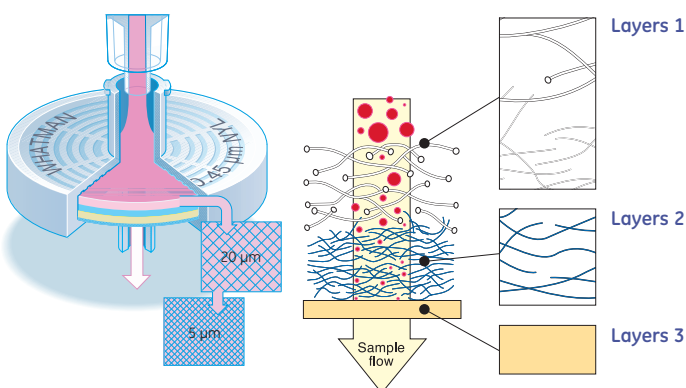


GD/XP Syringe Filters

## Applications

- HPLC sample preparation
- Trace metal analysis

## Typical data GD/XP Syringe Filters



GD/XP Syringe Filters contain 3 filtration layers which substantially reduce blockage and increase volume throughput. Layer 1 is a 20 µm polypropylene filter; layer 2 is a 5 µm polypropylene filter; layer 3 is the membrane filter, such as nylon, PVDF, PTFE, etc., which filters down to 0.45 µm.

### GD/XP 25 mm

Housing	Polypropylene (pigment-free)
Filtration area	4.6 cm <sup>2</sup>
Maximum pressure	75 psi (5.2 bar)
Volume 'hold-up' full housing	1.4 ml with air purge 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
Sterilization*	Autoclave at 121°C at 15 psi for 20 min
Prefiltration media	PP 20 µm: 5 µm

\* Not recommended for nylon.

## Ordering information

### GD/XP Syringe Filters

Product code	Membrane*	Pore size (µm)	Diameter (mm)	Hydrophilic	Solvent resistance	Quantity/pack
6970-2504	Nylon	0.45	25	Yes	Good	150
6971-2504	Nylon	0.45	25	Yes	Good	1500
6972-2504	PVDF	0.45	25	Yes	Good	150
6973-2504	PVDF	0.45	25	Yes	Good	1500
6974-2504	PTFE	0.45	25	No	Very good	150
6978-2504	PP	0.45	25	No	Good	150
6993-2504	DpPP	0.45	25	No	Good	1500
6992-2504	DpPP	0.45	25	No	Good	150
6994-2504	PES	0.45	25	Yes	Poor	150
6995-2504	PES	0.45	25	Yes	Poor	1500

\* PP = Polypropylene; PES = Polyethersulfone; PVDF = Polyvinylidene difluoride; PTFE = Polytetrafluoroethylene; DpPP = Polypropylene depth filter

# Puradisc Syringe Filters

Puradisc Syringe Filters are designed for the quick, efficient filtration of sample volumes up to 100 ml.



Puradisc FP 30 mm syringe filters

## Puradisc 4

- 4 mm diameter syringe filter
- Sample volume up to 2 ml
- Low hold-up volume < 10 µl ensures maximum sample recovery
- Minimized nonspecific binding to membrane (due to small membrane size)

## Puradisc 13

- 13 mm diameter syringe filter
- Sample volume up to 10 ml
- Low hold-up volume < 25 µl ensures maximum sample recovery

## Puradisc 25

- 25 mm diameter syringe filter
- Sample volume up to 100 ml

## Puradisc FP 30

- 30 mm diameter
- Larger filtration area (44% greater in comparison to 25 mm)
- Designed for aqueous samples

Puradisc FP 30 may be used for:

- Filtration of protein-containing solutions with minimal protein loss (CA membrane)
- Removal of cellular constituents from solution

## Puradisc Aqua 30

These filters contain prewashed membrane to minimize background carbon levels in COD and DOC analysis.

## Features and benefits

- Pigment-free polypropylene (or polycarbonate for Puradisc FP and Aqua 30)
- Choice of membrane or glass microfiber filter media for wide solvent compatibility
- Sterile option (blister pack) for critical applications
- Tube-tip format (optional) for accurate dispensing into a microvial
- Choice of filter sizes (4 to 30 mm)
- Standard inlet and outlet Luer connectors
- Adhesive-free seals eliminate potential sample contamination

## Possible applications

- HPLC samples containing low solid content—filtration will improve column life
- CE (capillary electrophoresis) samples—filtration will eliminate spurious peaks
- Sterile filtration of low volume samples
- Biological sample preparation
- UV/Vis samples—filter directly into cuvette using tube tip
- Refractometry—filter samples to prevent damage to instrument optics and improve accuracy of results
- Buffer solutions
- Salt solutions
- Tissue culture media

*Please turn to pages 15 to 17 for ordering information*



Puradisc 13 mm with tube tip

# Typical data

## Puradisc Syringe Filters

	Puradisc 4	Puradisc 13	Puradisc 25	Puradisc FP/A
Housing	Polypropylene	Polypropylene	Polypropylene	Polycarbonate
Filtration area	0.2 cm <sup>2</sup>	1.3 cm <sup>2</sup>	4.2 cm <sup>2</sup>	5.7 cm <sup>2</sup>
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' with air purge	< 10 µl	< 25 µl	< 100 µl	< 50 µl
Dimensions	10.1 × 23.5 mm 19.5 × 7.7 mm (PVDF membrane only)	16.3 × 19.8 mm	22.9 × 28.4 mm	26 × 34 mm
Weight (approx)	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/tube tip	Male Luer/tube tip	Male Luer	Male Luer/Luer lock
Sterilization*	Autoclave at 121°C	Autoclave at 121°C	Autoclave at 121°C	Autoclaving not recommended

\* Applies to nonsterile filters only. Do not autoclave sterile Puradisc filters.

## Ordering information

### 4 mm Puradisc Syringe Filters

Membrane <sup>†</sup>	Nonsterile without tube tip			Nonsterile with tube tip	Sterile without tube tip		Quantity/pack
	Nylon	PVDF	PTFE	PVDF	Nylon	PVDF	
Pore size (µm)							
0.2	—	—	—	6777-0402	6786-0402	6791-0402	50
0.45	—	—	—	6777-0404	—	—	50
0.2	6789-0402	6779-0402	6784-0402	—	—	—	100
0.45	6789-0404	6779-0404	6784-0404	—	—	—	100
0.2	6790-0402	6792-0402	6783-0402	—	—	—	500
0.45	6790-0404	6792-0404	6783-0404	—	—	—	500

### 13 mm Puradisc Syringe Filters (nonsterile)

Membrane*	Without tube tip							With tube tip		Quantity/ pack
	Nylon	PVDF	PTFE	PES	PP	GMF	CA	PVDF	PTFE	
Pore size (µm)										
0.2	—	—	—	—	—	—	—	6777-1302	6775-1302	50
0.45	—	—	—	—	—	—	—	6777-1304	6775-1304	50
0.1	6789-1301	—	6784-1301	—	—	—	—	—	—	100
0.2	6789-1302	6779-1302	6784-1302	6782-1302	6788-1302	—	—	—	—	100
0.45	6789-1304	6779-1304	6784-1304	6782-1304	6788-1304	—	6771-1304	—	—	100
1.0	—	—	6784-1310	—	—	—	—	—	—	100
5.0	—	—	6784-1350	—	—	—	—	—	—	100
GF/A 1.6†	—	—	—	—	—	6820-1316	—	—	—	100
GF/B 1.0†	—	—	—	—	—	6821-1310	—	—	—	100
GF/C 1.2†	—	—	—	—	—	6822-1312	—	—	—	100
GF/D 2.7†	—	—	—	—	—	6823-1327	—	—	—	100
GF/F 0.7†	—	—	—	—	—	6825-1307	—	—	—	100
934-AH 1.5†	—	—	—	—	—	6827-1315	—	—	—	100
0.2	6790-1302	6792-1302	6783-1302	—	6785-1302	—	—	—	—	500
0.45	6790-1304	6792-1304	6783-1304	6781-1304	6785-1304	6818-1304	—	—	—	500
GF/A 1.6†	—	—	—	—	—	6806-1316	—	—	—	500
0.2	6768-1302	6765-1302	6766-1302	—	—	—	—	—	—	2000
0.45	6768-1304	6765-1304	6766-1304	—	—	—	6763-1304	—	—	2000

\* CA = Cellulose acetate; GMF = Glass microfiber filter; PES = Polyethersulfone; PP = Polypropylene; PTFE = Polytetrafluoroethylene; PVDF = Polyvinylidene difluoride

† Particle Retention Rating

## 13 mm Puradisc Syringe Filters (sterile)

Membrane*	Without tube tip			With tube tip	Quantity/pack
	Nylon	PVDF	PES	PVDF	
Pore size (μm)					
0.1	6786-1301	—	—	—	50
0.2	6786-1302	6791-1302	6780-1302	6778-1302	50
0.45	—	6791-1304	6780-1304	—	50

\* PES = Polyethersulfone; PVDF = Polyvinylidene difluoride

## 25 mm Puradisc Syringe Filters

Membrane*	Nonsterile						Sterile	Quantity/pack
	Nylon	PVDF	PTFE	PP	PES	GMF	PES	
Pore size (µm)								
0.1	—	—	6784-2501	—	—	—	—	50
0.2	6750-2502	6746-2502	6784-2502	6786-2502	—	—	6780-2502	50
0.45	6750-2504	6746-2504	6784-2504	6786-2504†	—	—	6780-2504	50
1.0	6750-2510	—	6784-2510	—	—	—	6780-2510	50
0.7 GF/F†	—	—	—	—	—	6825-2517	—	50
1.0 GD 1†	—	—	—	—	—	6783-2510	—	100
2.0 GD 2†	—	—	—	—	—	6783-2520	—	100
0.2	6751-2502	6747-2502	6785-2502	6788-2502	6781-2502	—	—	200
0.45	6751-2504	6747-2504	6785-2504	6788-2504†	6781-2504	—	—	200
1.0	6751-2510	—	—	—	6781-2510	—	—	200
0.7 GF/F†	—	—	—	—	—	6825-2527	—	200
0.2	—	—	—	—	—	—	—	300
0.45	6752-2504	—	—	—	—	—	—	500
0.1	—	—	6798-2501	—	—	—	—	1000
0.2	6753-2502	—	6798-2502	6790-2502	6794-2502	—	6794-2512	1000
0.45	6753-2504	6749-2504	6798-2504	6790-2504†	6794-2504	—	6794-2514	1000
0.7 GF/F†	—	—	—	—	—	6787-2520	—	1000
1.0	6753-2510	—	6798-2510	—	6794-2510	—	—	1000
1.0 GD 1†	—	—	—	—	—	6792-2510	—	1000

\* GD = Graded Density; PES = Polyethersulfone; PP = Polypropylene; PTFE = Polytetrafluoroethylene; PVDF = Polyvinylidene difluoride

<sup>†</sup> Particle Retention Rating

<sup>‡</sup> DpPP = Polypropylene Depth Filter



Puradisc Syringe Filters 13 and 25 mm



## 30 mm Puradisc FP Syringe Filters

Description	Diameter (mm)	Pore size (µm)	Membrane/housing*	Connection in/out†	Color code	Quantity/pack	Product code
<b>Individually sterile packed</b>							
FP 30 CA-S#†	30	0.2	CA/PC	FLL/ML	red	50	10 462 200
FP 30 CA-S#†	30	0.2	CA/PC	FLL/MLL	red	50	10 462 205
FP 30 CA-S#†	30	0.45	CA/PC	FLL/ML	white	50	10 462 100
FP 30 CA-S#	30	0.8	CA/PC	FLL/ML	green	50	10 462 240
FP 30 CA-S#	30	1.2	CA/PC	FLL/ML	orange	50	10 462 260
FP 30 CN-S	30	5.0	CN/PC	FLL/ML	black	50	10 462 000
FP 30 RC#	30	0.45	RC	FLL/ML	—	50	10 462 950
FP 30 RC#	30	0.2	RC	FLL/ML	—	50	10 462 960

### Nonsterile

FP 30 CA#	30	0.2	CA/PC	FLL/ML	red	50	10 462 701
FP 30 CA#	30	0.2	CA/PC	FLL/ML	red	100	10 462 710
FP 30 CA#	30	0.2	CA/PC	FLL/ML	red	500	10 462 700
FP 30 CA#	30	0.2	CA/PC	FLL/MLL	red	500	10 462 206
FP 30 CA#	30	0.45	CA/PC	FLL/ML	white	50	10 462 601
FP 30 CA#	30	0.45	CA/PC	FLL/ML	white	100	10 462 610
FP 30 CA#	30	0.45	CA/PC	FLL/ML	white	500	10 462 600
FP 30 CA#	30	0.8	CA/PC	FLL/ML	green	50	10 462 241
FP 30 CA#	30	0.8	CA/PC	FLL/ML	green	500	10 462 243
FP 30 CA#	30	1.2	CA/PC	FLL/ML	orange	50	10 462 261
FP 30 CA#	30	1.2	CA/PC	FLL/ML	orange	500	10 462 263
FP 30 CN	30	5.0	CN/PC	FLL/ML	black	50	10 462 520
FP 30 CN	30	5.0	CN/PC	FLL/ML	black	100	10 462 510
FP 30 CN	30	5.0	CN/PC	FLL/ML	black	500	10 462 500

### Aqua 30

Aqua 30 CA#	30	0.45	CA/PC	FLL/ML	white	50	10 462 656
Aqua 30 CA#	30	0.45	CA/PC	FLL/ML	white	100	10 462 655
Aqua 30 CA#	30	0.45	CA/PC	FLL/ML	white	500	10 462 650

\* CA = Cellulose acetate; CN = Cellulose nitrate; PC = Polycarbonate; FLL = Female Luer lock; ML = Male Luer; MLL = Male Luer lock

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† Endotoxin-free according to LAL test (USPXXIII), sensitivity: 0.25 EU/ml



Sterile Puradisc FP 30 syringe filters

# SPARTAN Syringe Filters

SPARTAN filters are tested and certified for the absence of UV-absorbing substances at wavelengths of 210 and 254 nm with water, methanol, and acetonitrile. This ensures lot-to-lot consistency and hence reproducible results.



SPARTAN 13 and SPARTAN 30

## Features

- Hydrophilic, low protein-binding membrane made of regenerated cellulose
- Excellent chemical resistance against the standard aqueous and organic HPLC solvents
- SPARTAN Syringe Filters are tested and certified for the absence of UV-absorbing substances at wavelengths of 210 and 254 nm with water, methanol, and acetonitrile
- 13 mm diameter with Mini-Tip options
- 13 mm diameter with extremely low dead volume < 10 µl

## Benefits

- Versatile: Use for applications requiring a chemically resistant, hydrophilic, low protein-binding membrane

## Applications

- Filtration of organic and aqueous samples prior to HPLC with reproducible results
- Purification of aqueous and organic solutions
- Filtration of protein solutions

## Technical tip

### SPARTAN 13 and 30

<b>Tip:</b>	Download your SPARTAN 13 and 30 batch certificate from our website to document the high purity of each batch. To download, visit <a href="http://www.gelifesciences.com/certificates">www.gelifesciences.com/certificates</a> , enter the lot number, and you will receive documentation of the appropriate batch chromatogram and test conditions.
<b>Certified:</b>	SPARTAN filters are HPLC certified.

## Ordering information

### SPARTAN Syringe Filters

Product code	Diameter (mm)	Pore size (µm)	Membrane/housing*	Connection in/out*	Color code	Quantity/pack
10463040#	13	0.2	RC/PP	FLL/Mini-Tip	dark brown	100
10463042#	13	0.2	RC/PP	FLL/Mini-Tip	dark brown	500
10463100#	13	0.2	RC/PP	FLL/ML	dark brown	100
10463102#	13	0.2	RC/PP	FLL/ML	dark brown	500
10463030#	13	0.45	RC/PP	FLL/Mini-Tip	light brown	100
10463032#	13	0.45	RC/PP	FLL/Mini-Tip	light brown	500
10463110#	13	0.45	RC/PP	FLL/ML	light brown	100
10463112#	13	0.45	RC/PP	FLL/ML	light brown	500
10463060#	30	0.2	RC/PP	FLL/ML	dark brown	100
10463062#	30	0.2	RC/PP	FLL/ML	dark brown	500
10463053#	30	0.45	RC/PP	FLL/ML	light brown	50
10463050#	30	0.45	RC/PP	FLL/ML	light brown	100
10463052#	30	0.45	RC/PP	FLL/ML	light brown	500

\* PP = Polypropylene; FLL = Female Luer lock; ML = Male Luer; RC = Regenerated cellulose

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# ReZist Syringe Filters

The Whatman ReZist range of syringe filters has been specifically designed to be resistant to organic solvents. These filters are designed for the clarification of aggressive organic solvents.

ReZist 30 mm filters can also be used as a venting filter for small vessels.



ReZist Syringe Filters

## ReZist for HPLC sample preparation

### Features

- Hydrophobic PTFE membrane is laminated with polypropylene
- 13 or 30 mm diameter
- 13 mm diameter with extremely low dead volume < 10 µl

### Benefits

- Chemical resistance against standard organic HPLC solvents
- 13 mm diameter with Mini-Tip outlet is designed for filtration into very small sample bottles
- Permits optimal utilization of small sample volumes

## ReZist for air venting

### Features

- Integral, permanently hydrophobic PTFE membranes
- Polypropylene support

### Benefits

- Extremely high chemical resistance

## Typical applications

### ReZist

Filtration of organic solutions in HPLC	ReZist 13 and 30
Filtration of aggressive solutions	ReZist 13 and 30
1 µm membrane for prefiltration of high solid content solutions	ReZist 13 and 30
Moisture barrier when venting	ReZist 30
Air sterilization for tubing systems	ReZist 30
Aerosol separation for protecting vacuum pumps	ReZist 30
Sterile venting of small volumes	ReZist 30
Prefiltration of high solid content solutions	ReZist 30/GF92

## Ordering information

### ReZist

Product code	Diameter (mm)	Pore size (µm)	Membrane/housing*	Connection in/out*	Color code	Quantity/pack
10463703	13	0.2	PTFE/PP	FLL/Mini-Tip	white	100
10463713	13	0.45	PTFE/PP	FLL/Mini-Tip	green	100
10463503	30	0.2	PTFE/PP	FLL/ML	white	100
10463505	30	0.2	PTFE/PP	FLL/ML	white	500
10463513	30	0.45	PTFE/PP	FLL/ML	green	100
10463515	30	0.45	PTFE/PP	FLL/ML	green	500
10463523	30	1.0	PTFE/PP	FLL/ML	yellow	100
10463525	30	1.0	PTFE/PP	FLL/ML	yellow	500
10463533	30	5.0	PTFE/PP	FLL/ML	gray	100
10463535	30	5.0	PTFE/PP	FLL/ML	gray	500
10463500†	30	0.2	PTFE/PP	FLL/ML	white	50
10463543	30	> 1	GF92/PP	FLL/MLL	natural	100
10463545	30	> 1	GF92/PP	FLL/MLL	natural	500

\* FLL = Female Luer lock; GF = Glass fiber; ML = Male Luer; MLL = Male Luer lock; PP = Polypropylene; PTFE = Polytetrafluoroethylene

† Sterile

# Anotop Syringe Filters

Anotop Syringe Filters are a universal solution for numerous filtration applications. Anotop filters can be used with most organic and aqueous solutions, and they are suitable for sample volumes up to 100 ml. The distinctive hexagonal housing is manufactured from pigment-free polypropylene to eliminate sample contamination. No wetting agents or adhesives are used in the manufacturing process.

Anotop syringe filters contain the alumina-based Anopore™ membrane and are supplied in three pore sizes. Glass microfiber prefilter versions are available for difficult-to-filter samples.



Anotop Syringe Filters

## Anotop 10 and Anotop 25

### Features

- 10 and 25 mm diameter syringe filters
- Inorganic membrane
- Capillary pore structure

### Benefits

- Low protein binding
- Sterile formats are available for critical applications
- Low hold-up volume < 20 µl ensures maximum sample recovery (Anotop 10)
- Filters samples up to 100 ml (Anotop 25)

### Applications

- Cold sterilization of growth media
- Phage and virus filtration
- Removal of high molecular weight proteins or polymers
- Liposome extrusion
- Filtration of solvents for spectro analysis and analytical sample preparation

## Anotop 10 Plus and Anotop 25 Plus

The Anotop 10 Plus Syringe Filter offers the added benefit of an integral glass microfiber prefilter. This unit is designed to enable difficult and hard-to-filter solutions to be filtered without adversely affecting the filtration efficiency of the final membrane. This can eliminate the need for sample clean-up or expensive and time-consuming sequential filtration.

### Applications

- Filtration of heavily particulate-loaded samples prior to HPLC
- Removal of solids prior to UV/Vis analysis
- Filtration of tissue culture media
- Clean-up of difficult samples
- Filtration of colloidal material
- Removal of mycoplasma
- HPLC sample preparation
- Biological sample preparation

## Anotop IC

Whatman Anotop IC Syringe Filters are specifically designed for the preparation of samples for subsequent ion chromatography and HPLC analysis. These filters deliver very low levels of anion leaching for ion chromatography (IC) testing.

### Features

- 10 and 25 mm diameter syringe filters
- Each batch certified for IC

### Benefits

- Enhanced consistency of analytical results
- Extended column life
- Certified and guaranteed low levels of anion leaching for improved results

### Applications

- Ion chromatography sample preparation
- HPLC sample preparation

*Please turn to page 22 for ordering information*



## Typical data

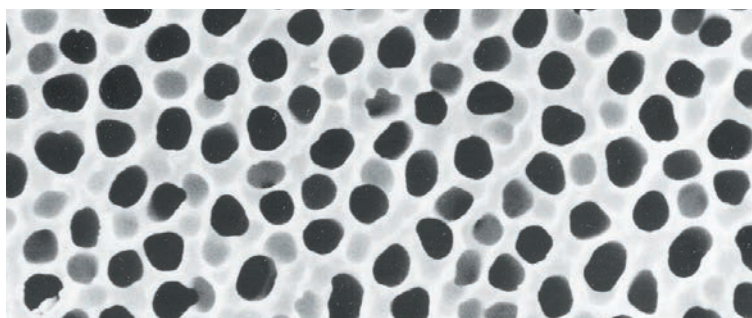
### Anotop Syringe Filters

	Anotop 10	Anotop 10 Plus	Anotop 25	Anotop 25 Plus
Housing	Polypropylene	Polypropylene	Polypropylene	Polypropylene
Filtration area	0.78 cm <sup>2</sup>	0.78 cm <sup>2</sup>	4.78 cm <sup>2</sup>	4.78 cm <sup>2</sup>
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"	< 20 µl	< 30 µl	< 150 µl	< 200 µl
Prefilter type	N/A	Glass microfiber (binderless)	N/A	Glass microfiber (binderless)
Membrane diameter	10 mm	10 mm	25 mm	25 mm
Membrane type	Anopore	Anopore	Anopore	Anopore
Average membrane thickness	60 µm	60 µm	60 µm	60 µm
Filter width	15.4 mm	15.4 mm	36.8 mm	36.8 mm
Filter length	18.5 mm	18.5 mm	26.3 mm	26.3 mm
Filter shape	Hexagonal	Hexagonal	Hexagonal	Hexagonal
Construction process	Thermal weld	Thermal weld	Thermal weld	Thermal weld
Inlet connection	Female Luer lock	Female Luer lock	Female Luer lock	Female Luer lock
Outlet connection	Male Luer	Male Luer	Male Luer	Male Luer
Protein adsorption	Low	Medium/high	Low	Medium/high
Extractable materials	Low	Low	Low	Low

### Anotop IC Syringe Filters

	Anotop 10 IC	Anotop 25 IC
Housing	Polypropylene	Polypropylene
Filtration area	0.78 cm <sup>2</sup>	4.78 cm <sup>2</sup>
Maximum pressure	100 psi (6.9 bar)	100 psi (6.9 bar)
Volume "hold-up" with air purge	< 20 µl	< 150 µl
Membrane diameter	10 mm	25 mm
Construction process	Thermal weld	Thermal weld
Extractable materials	Negligible	Negligible
Average membrane thickness	60 µm	60 µm
Width	15.4 mm	36.8 mm
Length	18.5 mm	26.3 mm
Inlet connection	Female Luer lock	Female Luer lock
Outlet connection	Male Luer	Male Luer
Membrane type	Anopore	Anopore

Anion	Level (ppb)
Fluoride	< 10
Chloride	< 15
Bromide	< 20
Sulfate	< 30
Phosphate	< 75
Nitrite	< 30
Nitrate	< 30
Typical average anion leaching levels in 18 M Ω/cm (Meg Ohm/cm) water at 20°C.	



SEM of Anopore membrane showing cylindrical pore structure.

# Ordering information

## Anotop Syringe Filters

Product code	Membrane (µm)	Pore size (µm)	Hydrophilic	Protein binding	Solvent resistance	Quantity/pack
<b>Anotop 10</b>						
6809-1002	Anopore	0.02	Yes	Low	Very good	50
6809-1012	Anopore	0.1	Yes	Low	Very good	50
6809-1022	Anopore	0.2	Yes	Low	Very good	50
6809-1102	Anopore sterile	0.02	Yes	Low	Very good	50
6809-1112	Anopore sterile	0.1	Yes	Low	Very good	50
6809-1122	Anopore sterile	0.2	Yes	Low	Very good	50
<b>Anotop 10 Plus</b>						
6809-3002	Anopore with prefilter	0.02	Yes	Medium	Very good	50
6809-3012	Anopore with prefilter	0.1	Yes	Medium	Very good	50
6809-3022	Anopore with prefilter	0.2	Yes	Medium	Very good	50
6809-3102	Anopore with prefilter sterile	0.02	Yes	Medium	Very good	50
6809-3112	Anopore with prefilter sterile	0.1	Yes	Medium	Very good	50
6809-3122	Anopore with prefilter sterile	0.2	Yes	Medium	Very good	50
<b>Anotop 25</b>						
6809-2002	Anopore	0.02	Yes	Low	Very good	50
6809-2012	Anopore	0.1	Yes	Low	Very good	50
6809-2022	Anopore	0.2	Yes	Low	Very good	50
6809-2024	Anopore	0.2	Yes	Low	Very good	200
6809-2102	Anopore sterile	0.02	Yes	Low	Very good	50
6809-2112	Anopore sterile	0.1	Yes	Low	Very good	50
6809-2122	Anopore sterile	0.2	Yes	Low	Very good	50
<b>Anotop 25 Plus</b>						
6809-4002	Anopore with prefilter	0.02	Yes	Medium	Very good	50
6809-4012	Anopore with prefilter	0.1	Yes	Medium	Very good	50
6809-4022	Anopore with prefilter	0.2	Yes	Medium	Very good	50
6809-4024	Anopore with prefilter	0.2	Yes	Medium	Very good	200
6809-4102	Anopore with prefilter sterile	0.02	Yes	Medium	Very good	50
6809-4112	Anopore with prefilter sterile	0.1	Yes	Medium	Very good	50
6809-4122	Anopore with prefilter sterile	0.2	Yes	Medium	Very good	50
<b>Anotop 10 IC</b>						
6809-9233	Anopore	0.2	Yes	Low	Very good	100
6809-9234	Anopore	0.2	Yes	Low	Very good	200
<b>Anotop 10 IC Blister</b>						
6809-9232	Anopore	0.2	Yes	Low	Very good	50
6809-9235	Anopore	0.2	Yes	Low	Very good	250
<b>Anotop 25 IC</b>						
6809-9244	Anopore	0.2	Yes	Low	Very good	200

# Roby Syringe Filters

## Roby 25 filter for automation

Roby 25 filter for robot systems was developed specifically for automated sample filtration systems. We offer Roby filters with various membranes. For difficult-to-filter samples, Roby filters are available with integral glass fiber prefilters.

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

- Optimized for main tablet testing instruments
- Mechanically stable polypropylene

### Benefits

- Easy filter changing
- Ensures simple and smooth filter transport

### Applications

- Fine filtration of samples in the automatic tablet dissolution test
- Method development with the Roby 25 Filter Validation Kit



Roby Syringe Filters, 25 pieces in each tube

## Roby 25 Filter Validation Kit

The Roby 25 Filter Validation Kit includes step-by-step instructions for essential selection tests. Instructions include all important properties in an at-a-glance format.

### Features

- Six types of filters: six tubes each with 25 filters
- Filter validation protocol with filter selection aid

## Ordering information

### Roby Syringe Filters

Product code	Description	Diameter (mm)	Pore size (µm)	Membrane/housing*	Connection in/out*	Color code	Quantity/pack
10463803	Roby 25 NL	25	0.45	NYL/PP	FLL/ML	translucent yellow	200 <sup>†</sup>
10463802	Roby 25 NL	25	0.45	NYL/PP	FLL/ML	translucent yellow	1000
10463805	Roby 25 NL-GF92	25	0.45	NYL-GF/PP	FLL/ML	yellow	200 <sup>†</sup>
10463804	Roby 25 NL-GF92	25	0.45	NYL-GF/PP	FLL/ML	yellow	1000
10463807 <sup>#</sup>	Roby 25 RC	25	0.45	RC/PP	FLL/ML	translucent brown	200 <sup>†</sup>
10463806 <sup>#</sup>	Roby 25 RC	25	0.45	RC/PP	FLL/ML	translucent brown	1000
10463809 <sup>#</sup>	Roby 25 RC-GF92	25	0.45	RC-GF/PP	FLL/ML	brown	200 <sup>†</sup>
10463808 <sup>#</sup>	Roby 25 RC-GF92	25	0.45	RC-GF/PP	FLL/ML	brown	1000
10463813 <sup>#</sup>	Roby 25 CA-GF92	25	0.45	CA-GF/PP	FLL/ML	green	200 <sup>†</sup>
10463812 <sup>#</sup>	Roby 25 CA-GF92	25	0.45	CA-GF/PP	FLL/ML	green	1000
10463814	Roby 25/GF55	25	0.7	GF/PP	FLL/ML	natural	200 <sup>†</sup>
10463815	Roby 25/GF55	25	0.7	GF/PP	FLL/ML	natural	1000
10463801	Roby 25/GF92	25	> 1	GF/PP	FLL/ML	natural	200 <sup>†</sup>
10463800	Roby 25/GF92	25	> 1	GF/PP	FLL/ML	natural	1000
10463898 <sup>#</sup>	Filter Validation Kit <sup>‡</sup>	25	–	–	FLL/ML	–	150

\* GF = Glass fiber; PP = Polypropylene; NYL = Nylon; RC = Regenerated cellulose; FLL = Female Luer lock; ML = Male Luer





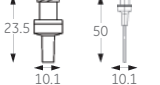
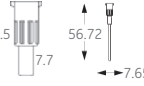










<sup>†</sup> 8 tubes with 25 pieces each

<sup>‡</sup> Filter Validation Kit includes: Roby 25/GF92; Roby 25/GF55; Roby 25/RC; Roby 25/RC-GF92; Roby 25 NL; Roby 25 NL-GF92. (6 tubes of 25 pieces each)

<sup>#</sup> Sold under license to DE10102744 and foreign equivalents thereof



# Technical data of syringe filters

Name	Dia. (mm)	Housing material*	Max. operating pressure (psi/bar)	Effective filter area (cm <sup>2</sup> )	Hold-up volume after air purging (µl)	Inlet*	Outlet*	Dimensions (mm)
Anotop 10, Anotop 10 Plus, Anotop 10 IC	10	PP	100/6.9	0.78	Anotop 10 & 1C: < 20 Anotop 10 Plus: < 30	FLL	ML	
Anotop 25, Anotop 25 Plus, Anotop 25 IC	25	PP	100/6.9	4.78	Anotop 25 & 1C: < 150 Anotop 25 Plus: < 200	FLL	ML	
GD/X 13	13	PP	100/6.9	1.3	50 (approx)	FLL	ML	
GD/X 25, 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	13	PP	75/5.2	1.3	< 25	FLL	ML	
Puradisc 13 with Tube Tip	13	PP	75/5.2	1.3	< 25	FLL	Tube Tip	
Puradisc 25	25	PP	75/5.2	4.2	< 100	FLL	ML	
Puradisc FP	30	PC	100/6.9	5.7	≤ 50	FLL	MLL	
Puradisc FP, Aqua 30	30	PC	100/6.9	5.7	≤ 50	FLL	ML	
ReZist 13, Spartan 13 with Mini-Tip	13	PP	100/6.9	0.75	≤ 10	FLL	Mini-Tip	
ReZist 30	30	PP	100/6.9	5.7	≤ 50	FLL	MLL	
ReZist 30, Spartan 30	30	PP	100/6.9	5.7	≤ 50	FLL	ML	
Roby 25	25	PP	100/6.9	4.2	≤ 50	FLL	ML	
Spartan 13	13	PP	100/6.9	0.75	≤ 10	FLL	ML	

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



# Membrane information

## Anopore (ANP) (membrane used in Anotop filters)

A membrane distinctive to Whatman. Anopore is a hydrophilic membrane with excellent organic solvent compatibility. Suitable for use with both aqueous and organic samples. The membrane has very tight pore-size distribution. Not suitable for use with very acidic or very basic samples.

## Cellulose acetate (CA)

Hydrophilic membrane. Limited solvent resistance. Very low protein binding capacity and hence excellent for protein recovery applications.

## Cellulose nitrate (CN)

Hydrophilic membrane. Limited resistance to organic solvents. High liquid flow rate. High protein binding capacity and hence not suitable for protein recovery applications.

## Glass microfiber/Glass fiber (GMF/GF)

Hydrophilic material. Excellent compatibility with organic solvents and strong acids (apart from hydrofluoric acid) and bases. Either used as a prefilter or as a final filter.

## Nylon/Polyamide (NYL)

Hydrophilic membrane. Resistant to a range of organic solvents. Suitable for use with high pH samples. Binds proteins hence not suitable for protein recovery applications.

## Polyethersulfone (PES)

Hydrophilic membrane. Broad solvent compatibility. Suitable for filtration of aqueous and compatible organic solvents. Higher liquid flow than either PTFE or PVDF. Low in extractables. Low protein binding.

## Polypropylene (PP)

Hydrophobic membrane. Resistant to a wide range of organic solvents.

## Polypropylene depth filter (DpPP)

Polypropylene fiber mat suitable for filtration of both aqueous and organic samples.

## Polytetrafluoroethylene (PTFE)

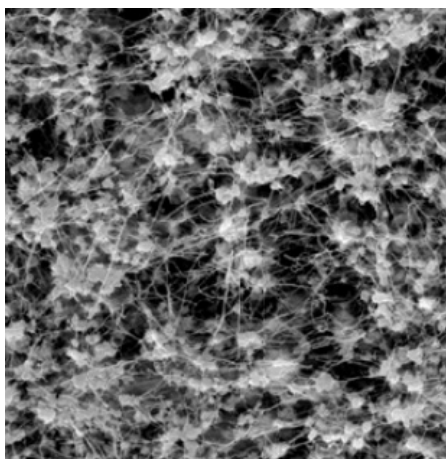
Hydrophobic membrane. Resistant to organic solvents as well as strong acids and bases. Low protein binding. Low in extractables. Main applications are the filtration of non-aqueous samples. Prior to filtering of aqueous samples the membrane must be pre-wetted with a water-miscible organic solvent.

## Polyvinylidene difluoride (PVDF)

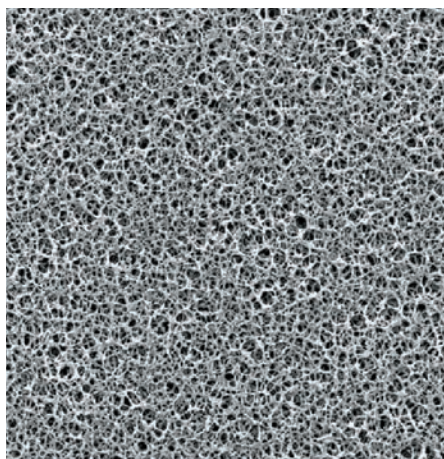
Hydrophilic membrane. Resistant to a broad range of organic solvents. Low protein binding.

## Regenerated cellulose (RC)

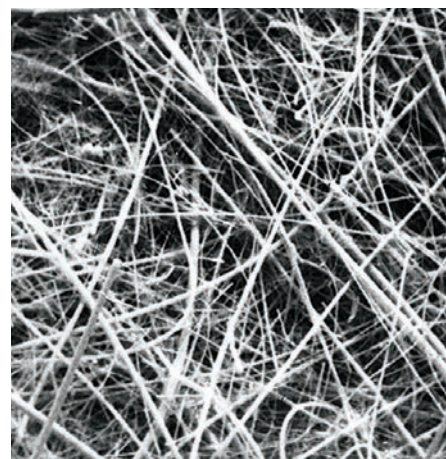
Hydrophilic membrane. Resistant to a very wide range of solvents. Suitable for use with either aqueous solutions or organic solvents. Compatible with HPLC solvents. Very low protein binding capacity and hence excellent for protein recovery applications.



Polytetrafluoroethylene (PTFE)



Regenerated cellulose (RC)



Glass fiber (GMF/GF)

# Chemical compatibility of membranes and housings\*

Solvent	ANP	CA	CN	PC	PE	GMF	NYL	PP	DpPP	PES	PTFE <sup>†</sup>	PVDF	RC
Acetic acid, 5%	R	LR	R	R		R	R	R	R	R	R	R	R
Acetic acid, glacial	R	NR	NR			R	LR	R	R	R	R	R	NR
Acetone	R	NR	NR	NR	R	R	R	R	R	NR	R	NR	R
Acetonitrile	R	NR	NR			R	R	R	R	NR	R	R	R
Ammonia, 6 N	NR		NR	NR	LR	LR	R	R	R	R	R	LR	LR
Amyl acetate	LR	NR	NR	NR	R	R	R	R	R	LR	R	LR	R
Amyl alcohol	R	LR	LR			R	R	R	R	NR	R	R	R
Benzene <sup>†</sup>	R	R	R	NR	R	R	LR	NR	NR	R	R	R	R
Benzyl alcohol <sup>†</sup>	R	LR	LR	LR	R	R	LR	R	R	NR	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
Butyl chloride <sup>†</sup>						R	NR	NR	NR		R	R	
Carbon tetrachloride <sup>†</sup>	R	NR	R	LR	R	R	LR	NR	NR	NR	R	R	R
Chloroform <sup>†</sup>	R	NR	R	NR	R	R	NR	LR	LR	NR	R	R	R
Chlorobenzene <sup>†</sup>	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
Diethylacetamide		NR	NR			R	R	R	R		R	NR	R
Dimethylformamide	LR	NR	NR			R	R	R	R	NR	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	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	LR	R
Ethyl acetate	R	NR	NR	NR	R	R	R	R	R	NR	R	NR	R
Ethylene glycol	R	LR	LR	R	R	R	R	R	R	R	R	R	R
Formaldehyde	LR	LR	R	R	R	R	R	LR	LR	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
Hydrochloric acid, conc.	NR	NR	NR	NR	NR	R	NR	LR	LR	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
Isopropyl alcohol	R	R	LR			R	R	R	R		R	R	R
Methanol	R	R	NR	R	R	R	R	R	R	R	R	R	R
Methyl ethyl ketone	R	LR	NR	NR	R	R	R	R	R	NR	R	NR	R
Methylene chloride <sup>†</sup>	R	NR	LR			R	NR	LR	LR	NR	R	R	R
Nitric acid, conc.		NR	NR	LR	NR	R	NR	NR	NR	NR	R	R	NR
Nitric acid, 6 N		LR	LR			R	NR	LR	LR	LR	R	R	LR
Nitrobenzene <sup>†</sup>	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
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	NR	R
Sodium hydroxide, 6N	NR	NR	NR	NR	NR	NR	LR	R	R	R	R	NR	NR
Sulfuric acid, conc.	NR	NR	NR	NR	NR	R	NR	NR	NR	NR	R	NR	NR
Tetrahydrofuran	R	NR	NR			R	R	LR	LR	NR	R	R	R
Toluene <sup>†</sup>	R	LR	R	NR	R	R	LR	LR	LR	NR	R	R	R
Trichloroethane <sup>†</sup>	R	NR	LR	NR	R	R	LR	LR	LR	NR	R	R	R
Trichloroethylene <sup>†</sup>	R		R			R	NR	LR	LR	NR	R	R	R
Water	R	R	R	R	R	R	R	R	R	R	R	R	R
Xylene <sup>†</sup>	R	R	R			R	LR	LR	LR	LR	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; PTFE = Polytetrafluoroethylene; PVDF = Polyvinylidene difluoride; RC = Regenerated cellulose R = Resistant; LR = Limited Resistance; NR = Not Recommended.

<sup>†</sup> Short Term Resistance of Housing.

<sup>‡</sup> 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.

# Take another look at how you work

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When you are filtering larger volumes, either for research, pilot scale manufacturing or other applications, consider the Whatman in-line disc filter and capsule ranges. This range of products is available for a wide array of applications including filtration of gases and liquids, and venting applications. Additionally, specialized devices such as the VacuGuard vacuum protection in-line disc filters and capsules, as well as the CarbonCap capsules for chemical removal, are available.



Autovial Syringeless filters



Polycap Capsule filter



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