

Synchronized solutions for quality control

in the Pharmaceutical and Cosmetics industries



Choose Whatman™ products for quality and
knowledgeable support from GE Healthcare



Synchronized solutions for quality control in

GE Healthcare Life Sciences offers a broad range of Whatman filtration products, which benefit from decades of experience. Whether you perform HPLC/U-HPLC analysis of liquid samples or raw materials, dissolution testing of tablets and capsules, other analytical techniques, or microbiological quality

Sample preparation prior to analysis

HPLC/U-HPLC analysis

Easy-to-filter samples



SPARTAN
see p. 3
HPLC-Certified



Mini-UniPrep
see p. 5
Syringeless
for increased
throughput



Puradisc
see p. 4
Wide range
of membrane
materials

Hard-to-filter samples

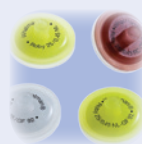


GD/X
see p. 4
Multilayer filters

Dissolution testing (tablets and capsules)

Automated

*Manual/
semi-automated*



Roby 25
see p. 6

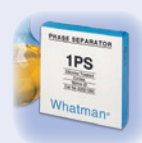


Glass microfiber discs
see p. 6

General filtration & liquid phase separation

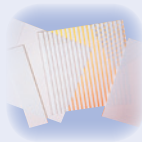


Cellulose filters
see p. 7

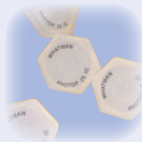


1PS paper
see p. 7

Thin layer chromatography & Ion chromatography



Linear-K plates
see p. 8



Anotop IC
see p. 8

Inhalation drugs & hazardous samples/surface protection



Filters/membranes
see p. 9



Autovial/Benchkote
see p. 9

the Pharmaceutical and Cosmetics industries

control (QC), our products offer reproducible quality to support your QC analyses. You can count on us to deliver filtration products that work time after time.

Solvent filtration

Mobile phase filtration



Membranes/vacuum
filtration unit
see p. 9

Vacuum pump protection



VACU-GUARD
see p. 9

Microbiological quality control

Filtration systems



MBS I System
see p. 10

Sterile filtration membranes



MicroPlus and ME
see p. 11

Stainless steel systems



AS300/600 series
see p. 11

Ready-to-use funnels and monitors



Analytical Funnels
see p. 12

Sterilized; include
fixed membrane



Microbiological Monitors
see p. 12

Sterilized; include
removable membrane

HPLC/U-HPLC analysis and dissolution testing

GE Healthcare Life Sciences offers several Whatman filters for sample preparation prior to HPLC/U-HPLC analysis of liquid samples and raw materials, and dissolution testing of tablets and capsules:

- For HPLC/U-HPLC analysis
 - Easy-to-filter samples
 - SPARTAN™ and Puradisc syringe filters
 - Mini-UniPrep™ syringeless filters for higher throughput
 - Hard-to-filter samples that require more than one filter
 - Whatman GD/X™ syringe filters
- For dissolution testing/content uniformity analysis
 - Roby syringe filters for automated dissolution systems
 - Glass microfiber discs for manual/semi-automated systems

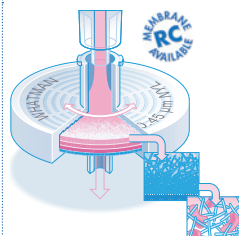
Regenerated cellulose membranes (RC) are compatible with aqueous solvents and the majority of organic solvents. In addition, RC membranes are free of extractables that may interfere with analysis.

All products that include RC membranes are identified with this logo in this brochure.



Use the selection guide to identify the optimal product for your needs.

Filters for sample preparation prior to HPLC/U-HPLC analysis and dissolution testing – selection guide

	HPLC/U-HPLC analysis				Dissolution testing
	Easy-to-filter samples			Hard-to-filter samples	Automated processing†
Product	HPLC certification needed SPARTAN 	Specific membrane material needed Puradisc 	Processing many samples Mini-UniPrep 	Whatman GD/X 	Roby 
Main feature	Regenerated cellulose membrane Web-downloadable batch certificate	Complete range	Compatible with most autosamplers	For hard-to-filter samples	Color-coded in tubes of 25 filters
Pre-filter	N/A	N/A	N/A	Multilayer glass fiber prefilter GMF 150: 10-1 µm GF/F: 0.7 µm	Optional (GF55 or GF92)
Dimensions	13 or 30 mm	4, 13, 25, or 30 mm	12 × 32 mm	13 or 25 mm	25 mm
Main available pore sizes	0.2 and 0.45 µm	0.1, 0.2, 0.45, 0.8, 1.0, 1.2, 5 µm	0.2 and 0.45 µm	0.2, 0.45, 0.7, 1.0, 1.2, 1.5, 2.7, 5.0 µm	0.45, 0.7, 1.0 µm
Main membrane materials available	Regenerated cellulose	Cellulose acetate, Nylon, PES, PVDF, PP, PTFE	Nylon, PES, PVDF, RC, PP, PTFE	Cellulose acetate, Nylon, PES, PVDF, PP, PTFE, RC	Nylon, cellulose acetate, regenerated cellulose, glass fiber GF55, glass fiber GF92

PES = polyethersulfone; PVDF = polyvinylidene fluoride; PP = polypropylene; PTFE = polytetrafluoroethylene; RC = regenerated cellulose

† Use glass microfiber filters for manual/semi-automated processing; see p. 6 for more information about dissolution testing

See p. 9 for solvent filtration products.

HPLC/U-HPLC analysis

SPARTAN Syringe Filters – for easy-to-filter samples



SPARTAN is one of the most versatile syringe filters for the majority of HPLC samples. All SPARTAN filters include a regenerated cellulose (RC) membrane, which is both chemically resistant and free of interfering extractables.

Features and benefits:

- Versatile: Can be used for any application requiring a chemically resistant, hydrophilic, low protein-binding membrane
- Excellent chemical resistance against the standard aqueous and organic HPLC solvents
- Tested and certified at wavelengths of 210 and 254 nm with water, methanol, and acetonitrile
- Available in 13 or 30 mm diameters; Mini-Tip format (optional) available for 13 mm filters



SPARTAN Syringe Filters.
Left: 13 mm filter with Mini Tip; right: 25 mm filter.

TECH
TIP

Batch certificates to document the high purity of each batch can be downloaded from:
www.gelifesciences.com/certificates

Chemical compatibility of regenerated cellulose and other membranes

Solvent	RC	ANP	CA	CN	PC	PE	GMF	NYL	PP	DpPP	PES	PTFE*	PVDF
Acetone	R	R	NR	NR	NR	R	R	R	R	R	NR	R	NR
Acetonitrile	R	R	NR	NR			R	R	R	R	NR	R	R
Hexane	R	R	R	R	R	R	R	R	R	R	R	R	R
Toluene†	R	R	LR	R	LR	R	R	LR	LR	LR	NR	R	R
Water	R	R	R	R	R	R	R	R	R	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; PTFE = Polytetrafluoroethylene; PVDF = Polyvinylidene Difluoride; RC = Regenerated Cellulose

R = Resistant; LR = Limited Resistance; NR = Not Recommended

* Membrane may need pre-wetting with isopropanol/methanol if filtering a polar liquid

† Short-Term Resistance of Housing

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

Ordering information

Product	Quantity	Code no.
SPARTAN Syringe Filters, 13 mm diameter		
0.2 µm with Mini Tip, RC membrane	100 per pack	10463040
0.2 µm, RC membrane	100 per pack	10463100
0.45 µm with Mini Tip, RC membrane	100 per pack	10463030
0.45 µm, RC membrane	100 per pack	10463110

Product	Quantity	Code no.
SPARTAN Syringe Filters, 30 mm diameter		
0.2 µm, RC membrane	100 per pack	10463060
0.45 µm, RC membrane	100 per pack	10463050

HPLC/U-HPLC analysis

Puradisc Syringe Filters – for routine filtration

Puradisc Syringe Filters combine quality and economy for filtration of samples up to 100 ml.

Features and benefits:

- Pigment-free polypropylene housing
- Standard inlet and outlet luer connectors
- Choice of filter sizes (4 mm to 30 mm) with optional Tube Tip
- Choice of membrane or glass microfiber filter media



Puradisc Syringe Filters.

Ordering information

Pore size (µm)	Code no.	Code no.	Code no.	Code no.	Code no.	Quantity
Puradisc 25 mm Syringe Filters (Nonsterile), without Tube Tip*						
Membrane type	Nylon	PVDF	PTFE	PP	PES	
0.2	6751-2502	6747-2502	6785-2502	6788-2502	6781-2502	200 per pack
0.45	6751-2504	6747-2504	6785-2504	6788-2504†	6781-2504	200 per pack
0.2					6759-2502	300 per pack
0.45	6752-2504					500 per pack
0.2	6753-2502		6798-2502	6790-2502	6794-2502	1000 per pack
0.45	6753-2504	6749-2504	6798-2504	6790-2504†	6794-2504	1000 per pack

* Other diameters, pore sizes, and pack sizes are available; see additional Ordering information on p. 13

† DpPP, polypropylene depth filter

GD/X Syringe Filters – for hard-to-filter samples that require more than one filter



Whatman GD/X Syringe Filters are an excellent choice for filtering high-particulate or viscous solutions. They have glass microfiber prefilters enabling you to filter more of your sample in less time.

Features and benefits:

- Can filter 2–5× more sample than with conventional filters
- Four layers of filtration media: Reduces blockage and need to replace filter

TECH TIP

One GD/X filter replaces 2 to 5 conventional filters

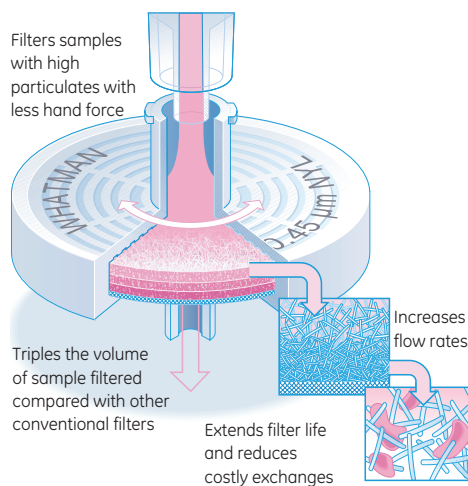


Illustration showing the composition of a GD/X Syringe Filter.

Ordering information

Pore size (µm)	Code no.	Code no.	Code no.	Code no.	Code no.	Code no.	Code no.	Quantity
GD/X 25 mm with glass fiber prefilter*								
Membrane type	RC	CA	Nylon	PVDF	PTFE	PP	PES	
0.2	6887-2502	6880-2502	6870-2502	6872-2502	6874-2502	6878-2502	6876-2502	150 per pack
0.45	6882-2504	6880-2504	6870-2504	6872-2504	6874-2504	6878-2504	6876-2504	150 per pack
0.2	6888-2502		6871-2502	6873-2502	6875-2502		6905-2502	1500 per pack
0.45	6883-2504	6881-2504	6871-2504	6873-2504	6875-2504	6879-2504	6905-2504	1500 per pack

* Other diameters, pore sizes, and pack sizes are available; contact your local representative

See p. 9 for solvent filtration products.

Mini-UniPrep Syringeless Filter – for increased throughput of easy-to-filter samples

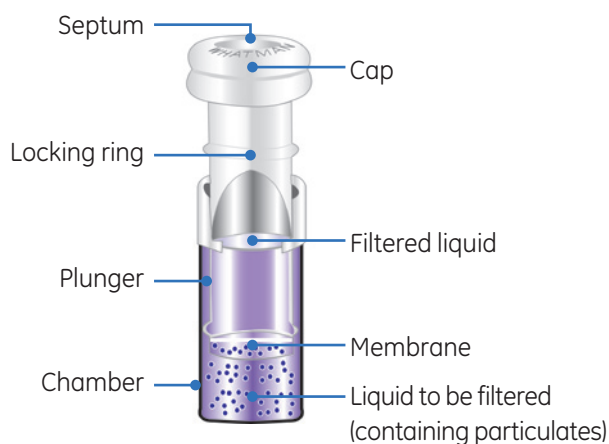


Whatman Mini-UniPrep Syringeless Filters provide a faster, easier way to remove particulates from samples being prepared for HPLC/U-HPLC analysis.

Features and benefits:

- Replaces syringe, syringe filter, vial, and cap
- Time savings with 6-position compressor
- Waste and cost reduction
- Compatible with all major autosamplers

Parts of a Mini-UniPrep filter:



Steps in processing Mini-UniPrep filters



1. Add sample.



2. Insert plunger.



3. Compress.



4. Place in autosampler.

Ordering information

Pore size (µm)	Code no.	Code no.	Code no.	Code no.	Code no.	Code no.	Quantity
Mini-UniPrep translucent housing – standard cap*							
Membrane type	RC	Nylon	PVDF	PTFE	PP	PES	
0.2	UN203NPERC	UN203NPENYL	UN203NPEAQU	UN203NPEORG	UN203NPEPP	UN203NPEPES	100 per pack
0.45	UN203NPURC	UN203NPUNYL	UN203NPUAQU	UN203NPUORG	UN203NPUPP	UN203NPUPES	100 per pack
0.2	UN503NPERC	UN503NPENYL	UN503NPEAQU	UN503NPEORG	UN503NPEPP	UN503NPEPES	1000 per pack
0.45	UN503NPURC	UN503NPUNYL	UN503NPUAQU	UN503NPUORG	UN503NPUPP	UN503NPUPES	1000 per pack

Pore size (µm)	Code no.	Code no.	Code no.	Code no.	Code no.	Quantity
Mini-UniPrep translucent housing – slit septum cap*						
Membrane type	Nylon	PVDF	PTFE	PP	PES	
0.2	US203NPENYL	US203NPEAQU	US203NPEORG	US203NPEPP	US203NPEPES	100 per pack
0.45	US203NPUNYL	US203NPUAQU	US203NPUORG	US203NPUPP		100 per pack
0.2	US503NPENYL	US503NPEAQU	US503NPEORG	US503NPEPP	US503NPEPES	1000 per pack
0.45	US503NPUNYL	US503NPUAQU	US503NPUORG	US503NPUPP	US503NPUPES	1000 per pack

Pore size (µm)	Code no.	Code no.	Code no.	Code no.	Code no.	Quantity
Mini-UniPrep amber housing – standard cap*						
Membrane type	Nylon	Nylon Slit Septa	PVDF	PTFE	PP	PES
0.2	UN203APENYL	US203APUNYL	UN203APEAQU	UN203APEORG	UN203APEPP	UN203APEPES
0.45	UN203APUNYL		UN203APUAQU	UN203APUORG	UN203APUPP	UN203APUPES
						100 per pack

* Other membranes are available; contact your local representative for more information

Product	Quantity	Code no.
Mini-UniPrep Compressor, 6 position	1 per pack	CR0000006

Dissolution testing of tablets/capsules

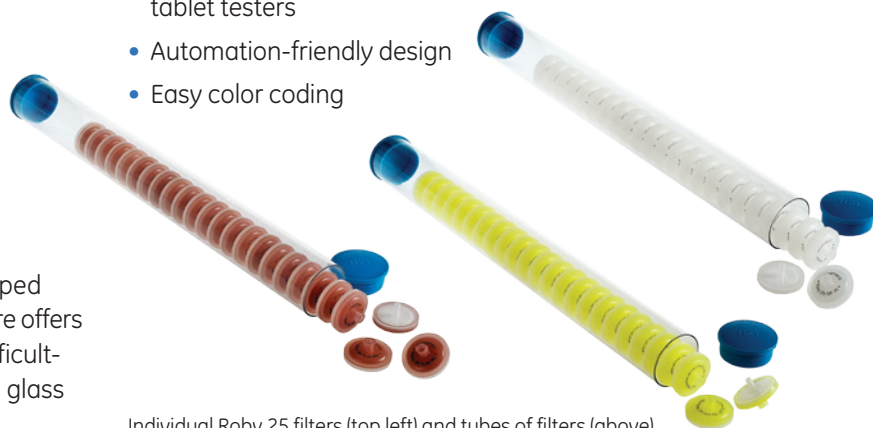
Roby 25 Syringe Filters – for automated dissolution testing



Roby 25 Syringe Filters for robot systems were developed specifically for automated sample filtration. GE Healthcare offers Whatman Roby filters with various membranes. For difficult-to-filter samples, Roby filters are available with integral glass fiber prefilters.

Features and benefits:

- Optimized for Sotax™, Caliper (Zymark™), and Varian™ tablet testers
- Automation-friendly design
- Easy color coding



Individual Roby 25 filters (top left) and tubes of filters (above).

Ordering information

Membrane/glass fiber prefilter/color coding	Code no.	Code no.
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Roby 25 mm for automated processing

Pore size 0.45 µm 200 per pack* 1000 per pack

Nylon†	Translucent yellow	10463803	10463802
Nylon, GF92†	Yellow	10463805	10463804
RC†	Translucent brown	10463807	10463806
RC, GF92†	Brown	10463809	10463808
CA, GF92	Green	10463813	10463812

Nominal retention 0.7 µm

Glass fiber GF55†	Natural	10463814	10463815
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Nominal retention 1.0 µm

Glass fiber, GF92†	Natural	10463801	10463800
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* 8 tubes of 25 pieces each

† Roby 25 filter types included in Filter Validation Kit

Description	Code no.
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Roby 25 Filter Validation Kit

Includes:

- Six filter types(!); 1 tube of each (25 pieces/tube)
- Step-by-step instructions in 5 languages for essential selection tests

10463898



Roby 25 Filter Validation Kit.

Glass microfiber discs – for manual or semi-automated systems

These Whatman glass microfiber filters from GE Healthcare are manufactured from 100% borosilicate glass, and are binder free.

TECH TIP

Discs are pre-cut to required diameter, for immediate use

Ordering information

Product	Quantity	Code no.
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Glass microfiber discs for filtration*

GF/F 2.5 cm	100 per pack	1825-025
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* Other diameters are available; contact your local representative for more information



GF/F glass microfiber filters.

General filtration/phase separation

Cellulose filters – for general filtration

Whatman cellulose filters from GE Healthcare are manufactured from high-quality cotton linters, which have been treated to achieve a minimum alpha cellulose content of 98%.

Features and benefits:

- Wide choice of retention/flow rate combinations; retention down to 2.5 µm
- Filters available with different levels of purity, hardness, and chemical resistance

TECH TIP

Choose a pre-pleated filter for hard-to-filter samples or to increase flow rate



Whatman cellulose filters.

Ordering information

Cellulose filters – 100 per pack

Filtration speed (flow)		Slow	Medium						Fast	Very fast
Grade		42 [†]	1	2	2V [†]	3	40 [†]	597 ½ [†]	589/2 ½ ^{††}	4
Particle retention		2.5 µm	11 µm	8 µm	8 µm	6 µm	8 µm	4–7 µm	12–25 µm	20–25 µm
Max. volume, diameter	15 ml, 90 mm	1442-090	1001-090	1002-090		1003-090	1440-090	10311842		1004-090
	20 ml, 110 mm	1442-110	1001-110	1002-110		1003-110	1440-110	10311843	10300143	1004-110
	35 ml, 125 mm	1442-125	1001-125	1002-125	1202-125	1003-125	1440-125	10311844		1004-125
	75 ml, 150 mm	1442-150	1001-150	1002-150	1202-150	1003-150	1440-150	10311845	10300145	1004-150
	135 ml, 185 mm	1442-185	1001-185	1002-185	1202-185	1003-185	1440-185	10311847		1004-185
	300 ml, 240 mm	1442-240	1001-240	1002-240	1202-240	1003-240	1440-240	10311851		1004-240

[†] Quantitative

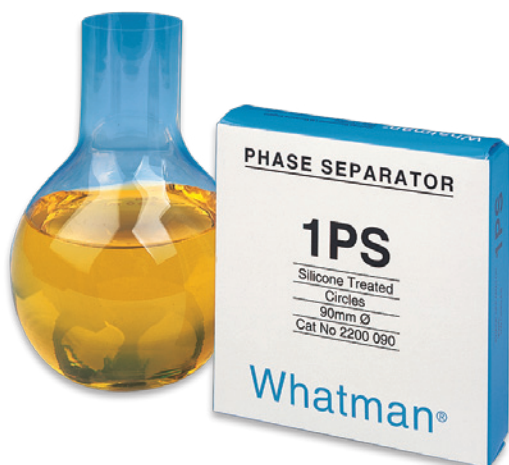
^{††} Pre-pleated

1PS Phase Separator Filter Paper – for liquid phase separation

1PS Phase Separator Filter Paper is a high-grade paper impregnated with a stabilized silicone that makes it hydrophobic. The paper rapidly retains the aqueous phase and passes the solvent phase through.

Features and benefits:

- Staff involvement is minimized
- Many separations can be processed together
- Rapid process replaces a separatory funnel



Ordering information

Max. volume	Diameter (mm)	Code no.
1PS Phase Separator Filter Paper, 100 per pack		
15 ml	90	2200-090
20 ml	110	2200-110
35 ml	125	2200-125
75 ml	150	2200-150
135 ml	185	2200-185
300 ml	240	2200-240
> 300 ml	270	2200-270

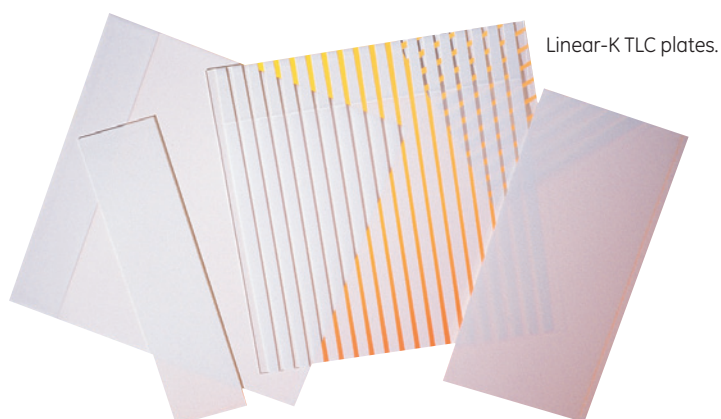
Thin layer chromatography (TLC)

Linear-K plates

The linear preadsorbent layer in these plates enables easy, rapid, and accurate sample application. The layer acts as a sponge to preconcentrate the sample before it interacts with the silica layer.

Features and benefits:

- Stringent quality standards ensure a consistent level of resolution, accuracy, and reproducibility
- Multiple samples and standards can be run simultaneously under identical conditions
- Wide range of chemistries and sizes
- Disposable plates



Linear-K TLC plates.

Ordering information

Product	Quantity	Code no.
Linear-K plates (with Linear-K preadsorbent zone)		
LK6D, 10 × 10 cm plate, 9 channels	100 per pack	4865-001
LK6D, 5 × 20 cm plate, 4 channels	75 per pack	4865-621
LK6DF, 5 × 20 cm plate, 4 channels, fluorescent indicator	75 per pack	4866-621
LK6, 20 × 20 cm plate	25 per pack	4865-820
LK6F, 20 × 20 cm plate	25 per pack	4866-820
LK6D, 20 × 20 cm plate, 19 channels	25 per pack	4865-821
LK6DF, 20 × 20 cm plate, 19 channels	25 per pack	4866-821

K6 plates (without preadsorbent zone)

TLC K6F, fluorescent, 5 × 10 cm	150 per pack	4861-320
TLC K6F, fluorescent, 20 × 20 cm	25 per pack	4861-820

TECH
TIP

Fluorescent indicator available for easy detection of UV-absorbing compounds

Ion chromatography (IC)

Anotop™ IC Syringe Filters

Whatman Anotop IC filters are specifically designed for the preparation of samples for subsequent IC and HPLC analysis. These filters contain the proprietary alumina-based Anopore™ membrane. These devices ensure very low levels of anion leaching for IC testing.



Anotop IC Syringe Filters.

Features and benefits:

- Very low levels of anion leaching ensured (< 10–30 ppb for major anions)
- Pigment-free PP housing to eliminate sample contamination

Ordering information

Product	Quantity	Code no.
Anotop 10 IC (10 mm diameter)		
0.2 µm	50 per pack	6809-9232
0.2 µm	100 per pack	6809-9233
0.2 µm	200 per pack	6809-9234
0.2 µm blister	250 per pack	6809-9235
Anotop 25 IC (25 mm diameter)		
0.2 µm	200 per pack	6809-9244

Inhalation drugs/hazardous samples

Preparation of inhalation drugs

European Pharmacopoeia 7.0, Preparation for inhalation¹, requires a "47 mm filter glass fiber filter, or equivalent." Use Whatman microfiber filters and track-etched membranes to meet this requirement.

¹ European Pharmacopoeia 7.0, European Directorate for the Quality of Medicines and Healthcare

Ordering information

Product	Quantity	Code no.
GF/A: Glass Fiber, 1.6 µm pore size	100 per pack	1820-047
GF/B: Glass Fiber, 1.0 µm pore size	100 per pack	1821-047
Track-etched, Polycarbonate, 1.0 µm pore size	100 per pack	111110

Filtration of hazardous samples

Autovial™ Syringeless Filters replace syringe-coupled filtration devices with a single, disposable unit to remove particulates.

Ordering information

Product	PTFE	PVDF	Nylon	GMF
Autovial 5 ml*, 50 per pack				
0.2 µm	AV115NPEORG			
0.45 µm	AV115NPUORG	AV115NPUAQU	AV115NPUNYL	AV115UGMF

* Autovial 12 ml, sterile or nonsterile, is also available; contact your local representative for more information

Solvent filtration

Mobile phase filtration

Whatman membranes from GE Healthcare are particularly well-suited for mobile phase filtration. They can be used in conjunction with a vacuum filtration flask such as the GV 050/2 series (see Ordering information).

Ordering information

Product	Quantity	Code no.
Membrane Circles, 100 per pack		
0.2 µm, RC58	10410312	10410314
0.45 µm, RC55	10410212	10410214
Membrane Circles, 50 per pack		
0.2 µm, PTFE, TE35	10411411	10411413
0.45 µm, PTFE, TE36	10411311	10411313

Vacuum filtration flasks

GV050/2 Vacuum filter holder, glass, 250 ml, 47/50 mm, glass frit, 1000 ml Erlenmeyer	1 per pack	10442200
GV050/3 Vacuum filter holder, glass, 250 ml, 47/50 mm, sieve, 1000 ml Erlenmeyer	1 per pack	10442300

Surface protection

Benchkote™ and Benchkote Plus are made of a strong material that makes it tear resistant, wet or dry.

Ordering information

Product	Quantity	Code no.
Benchkote, pad of 46 × 57 cm sheets	50 sheets	2300-599
Benchkote, 46 × 57 cm individual sheets	50 sheets	2300-916
Benchkote Plus, 50 × 60 cm individual sheets	50 sheets	2301-6150



Pump protection

VACU-GUARD filters protect vacuum pump systems from aqueous aerosols. These hydrophobic PTFE membranes retain 99.99% of airborne particles > 0.1 µm.

Ordering information

Product	Quantity	Code no.
VACU-GUARD PTFE, 50 mm diameter	10 per pack	6722-5000
VACU-GUARD PTFE, 60 mm diameter	10 per pack	6722-5001

VACU-GUARD filters.

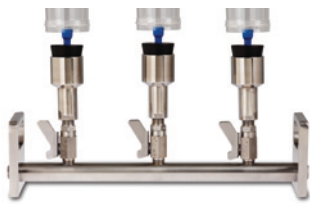
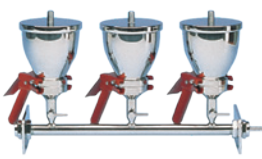


Microbiological quality control

GE Healthcare offers a broad range of high-quality Whatman products for microbiological quality control in the Pharmaceutical and Cosmetics industries.

Use the selection guide to identify a funnel and manifold combination that meets your needs.

Microbiology using membrane filtration – selection guide

	Ready-to-use funnels (membrane included)		Funnels (purchase membrane separately)	
Funnel type	Analytical Funnels	Monitors	MBS I funnels	Stainless steel funnels
Main features	Removable membrane included	Fixed membrane included	PP autoclavable funnels (50 times)	Part of complete stainless steel system
Manifolds with funnels attached	 3- or 6-position manifolds (code no. 10498761 and 10498762)*. Rubber stopper not supplied by GE Healthcare.		 AS220 Manifold (code no. 10445890)*; part of MBS I System	 AS300 and AS600 range of stainless steel manifolds

* Monitors, Analytical Funnels, and MBS I funnels are not supplied with the manifolds

Filtration systems – MBS I System

MBS I is an optimal system for membrane filtration-based microbiological quality control. It combines a 2-position manifold, a membrane dispenser, and a funnel dispenser.

Features and benefits

- Simple to use
- High reproducibility
- Funnels in PP can be autoclaved up to 50 times
- Risk of cross-contamination is minimized

Ordering information

Product	Quantity	Code no.
MBS I System		
AS220 2-place Vacuum filtration manifold	1 per pack	10445890
Steel frit with ring for AS220	1 per pack	10445863
Dispenser for 100 ml and 350 ml funnels	1 per pack	10445870
Plastic funnel in PP, autoclavable, 100 ml	20 per pack	10445861
Plastic funnel in ABS, sterile, 100 ml	20 per pack	10445865
Plastic funnel in PP, autoclavable, 350 ml	20 per pack	10445866
Autoclaving bags for MBS I plastic funnels	20 per pack	10445868
Membrane-Butler, Manual Butler for dispensing filtration membranes	1 per pack	10477100
PZ 001 Tweezers, stainless steel	1 per pack	10477602

MBS I Starter Pack

Contains:

1 × AS220 2-place Vacuum filtration manifold; 1 × MBS I funnel dispenser; 1 × Membrane-Butler—manual version; 1 × PZ 001 Tweezers; 20 × Plastic funnels in PP, autoclavable, 350 ml; 400 × Sterile membranes (0.45 µm, 47 mm, white) for Membrane-Butler; 20 × Autoclaving bags for MBS I plastic funnels; 10 × VACU-GUARD 50 mm discs for pump protection	28992499
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MBS I workflow



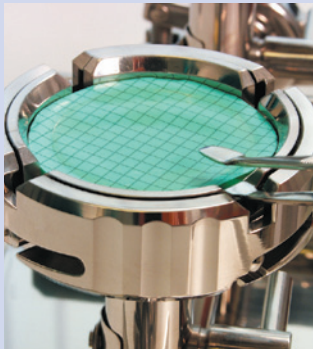
1. Select PP funnel and membrane.



2. Attach funnel on top of membrane.



3. Pour sample into funnel.



4. Remove membrane for analysis.

Sterile filtration membranes – MicroPlus and ME

The technical requirements for membrane filters used in microbiological quality control are subject to strict national and international standards. GE Healthcare offers a wide and versatile range of Whatman membrane filtration products with a very high level of consistent quality.

Features and benefits

- Simple method: Filter sample, collect microorganisms, incubate on nutrient medium, and evaluate colonies
- Versatile method: Also suitable for large sample volumes and low microorganism counts
- High quality: Membranes tested systematically in order to ensure the same high quality from batch to batch. Parameters tested are bubble point, flow rate, bacterial retention, recovery rate, and sterility

Ordering information

Product	Code no.	Code no.
Cellulose nitrate membranes, MicroPlus type		
47 mm diameter	100 per pack	400 per pack*
0.45 µm, white/black grid	10407713	10407112
0.45 µm, black/white grid		10407132
0.45 µm, green/black grid		10407170
50 mm diameter	100 per pack	400 per pack*
0.45 µm, white/black grid	10407714	10407114
0.45 µm, black/white grid	10407734	10407134
0.45 µm, green/black grid		10407172

* STL, for use with Membrane-Butler

Stainless steel vacuum filtration systems

GE Healthcare offers a complete range of stainless steel vacuum filtration systems that are dedicated for microbiological quality control.

Features and benefits:

- Stainless steel funnels and manifold
- Autoclavable
- Available in 3 or 6 positions
- Compatible with 47 and 50 mm diameter membranes

Ordering information

Product	Quantity	Code no.
Stainless steel manifolds*		
AS300/3 3-Place Manifold, 500 ml	1 per pack	10445830
AS600/3 6-Place Manifold, 500 ml	1 per pack	10444830

* Replacement parts are available



MicroPlus membranes (STL for Membrane-Butler).

Ordering information

Product	Code no.	Code no.
Cellulose mixed ester, ME type		
47 mm diameter	100 per pack	400 per pack*
0.2 µm, white/black grid	10406970	10408712
0.45 µm, white/black grid	10406870	10407312
0.45 µm, black/white grid	10409770	10407332
0.45 µm, green/black grid	10409470	10407370
50 mm diameter	100 per pack	400 per pack*
0.2 µm, white/black grid	10406972	10408714
0.45 µm, white/black grid	10406872	10407314
0.45 µm, black/white grid	10409772	10407334
0.45 µm, green/black grid	10409472	10407372



Six-place stainless steel manifold.

Contact your local representative for more information about this range.

Microbiological quality control

Analytical Funnels and Microbiological Monitors

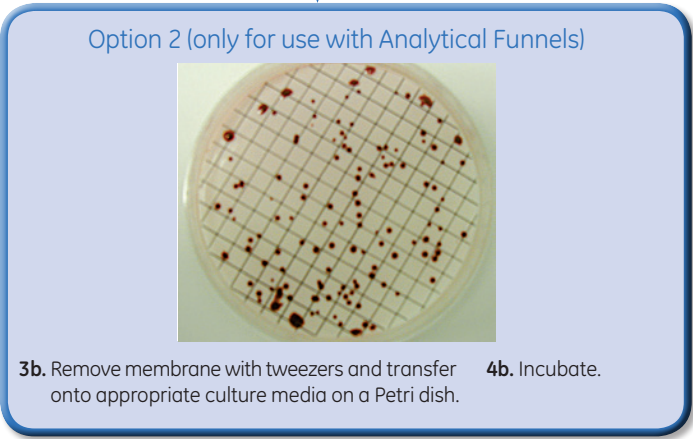
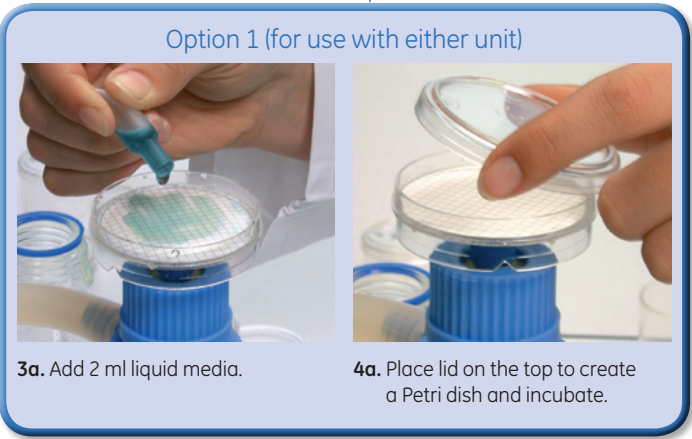
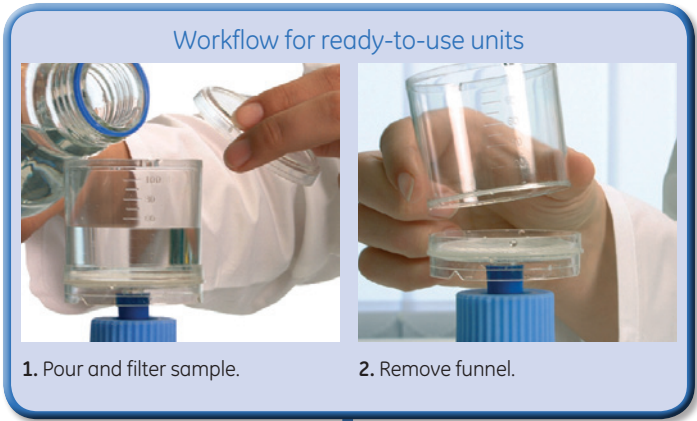
Analytical funnels and monitors are single-use, pre-sterilized filtering units for membrane filtration-based microbiology.

Analytical funnel: The membrane can be removed and transferred to a Petri dish.

Microbiological monitor: The membrane is fixed to the unit.

Features and benefits

- Rapid: no need to sterilize funnels or filter base
- Reduced contamination
- Easy handling: ready to use
- Can be used with 2 ml media ampules



Ordering information

Product	Code no.	Code no.
Microbiological Monitors 100 ml (fixed membranes), 50 per pack		
	47 mm	56 mm
0.2 µm, white/black grid	10497511	10497603
0.45 µm, white/black grid	10497500	10497600
0.45 µm, white/black grid, individually bagged	10497501	
0.45 µm, black/white grid	10497502	10497601
0.8 µm, black/white grid	10497503	10497602

Product	Code no.
Analytical Funnels 100 ml (removable membranes), 50 per pack	
	47 mm
0.2 µm, white/black grid	10497507
0.2 µm, white/black grid, individually bagged	10497510
0.45 µm, white/black grid	10497504
0.45 µm, white/black grid, individually bagged	10497506
0.45 µm, black/white grid	10497508
0.45 µm, black/white grid, individually bagged	10497509

Additional Puradisc* ordering information

Pore size (µm)	Code no.	Code no.	Code no.	Code no.	Code no.	Code no.	Code no.	Quantity
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Puradisc 25 mm Syringe Filters (Nonsterile) without Tube Tip, for typical sample volumes

Membrane type	Nylon	PVDF	PTFE	PP	PES	GMF	PES (Sterile)	
0.1			6784-2501					50 per pack
0.2	6750-2502	6746-2502	6784-2502	6786-2502			6780-2502	50 per pack
0.45	6750-2504	6746-2504	6784-2504	6786-2504†			6780-2504	50 per pack
1.0	6750-2510		6784-2510				6780-2510	50 per pack
GF/F 0.7†						6825-2517		50 per pack
GD 1 1.0†						6783-2510		100 per pack
GD 2 2.0†						6783-2520		100 per pack
0.2	6751-2502	6747-2502	6785-2502	6788-2502	6781-2502			200 per pack
0.45	6751-2504	6747-2504	6785-2504	6788-2504†	6781-2504			200 per pack
1.0	6751-2510				6781-2510			200 per pack
GF/F 0.7†						6825-2527		200 per pack
0.2					6759-2502			300 per pack
0.45	6752-2504							500 per pack
0.1			6798-2501					1000 per pack
0.2	6753-2502		6798-2502	6790-2502	6794-2502		6794-2512	1000 per pack
0.45	6753-2504	6749-2504	6798-2504	6790-2504†	6794-2504		6794-2514	1000 per pack
GF/F 0.7†						6787-2520		1000 per pack
1.0	6753-2510		6798-2510		6794-2510			1000 per pack
GD 1 1.0†						6792-2510		1000 per pack

Puradisc 13 mm Syringe Filters (Nonsterile) without Tube Tip, for smaller sample volumes

Membrane type	Nylon	PVDF	PTFE	PES	PP	GMF	CA	
0.2		6777-1302‡	6775-1302‡					50 per pack
0.45		6777-1304‡	6775-1304‡					50 per pack
0.1	6789-1301		6784-1301					100 per pack
0.2	6789-1302	6779-1302	6784-1302	6782-1302	6788-1302			100 per pack
0.45	6789-1304	6779-1304	6784-1304	6782-1304	6788-1304		6771-1304	100 per pack
1.0			6784-1310					100 per pack
5.0			6784-1350					100 per pack
GF/A 1.6†						6820-1316		100 per pack
GF/B 1.0†						6821-1310		100 per pack
GF/C 1.2†						6822-1312		100 per pack
GF/D 2.7†						6823-1327		100 per pack
GF/F 0.7†						6825-1307		100 per pack
934-AH 1.5†						6827-1315		100 per pack
0.2	6790-1302	6792-1302	6783-1302		6785-1302			500 per pack
0.45	6790-1304	6792-1304	6783-1304	6781-1304	6785-1304	6818-1304		500 per pack
GF/A 1.6†						6806-1316		500 per pack
0.2	6768-1302	6765-1302	6766-1302					2000 per pack
0.45	6768-1304	6765-1304	6766-1304				6763-1304	2000 per pack

* Additional diameters, membranes, pore sizes and pack sizes are available; we also provide sterile filters; contact your local representative for more information

† Particle retention rating

‡ With tube tip

CA = Cellulose Acetate; GMF = Glass Microfiber; PES = Polyethersulfone; PP = Polypropylene; PTFE = Polytetrafluoroethylene; PVDF = Polyvinylidene Difluoride

More literature is available to suit your needs:

- Whatman Sample Preparation Guide (English)
- Whatman Syringe Filter Collection (English)
- Whatman Product Guide (English)
- Capsule Product Guide (English)

Contact your local representative for more information.

For local office contact information, visit:
www.gelifesciences.com/contact

www.gelifesciences.com/whatman

GE Healthcare UK Limited
Amersham Place
Little Chalfont,
Buckinghamshire HP7 9NA, UK

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