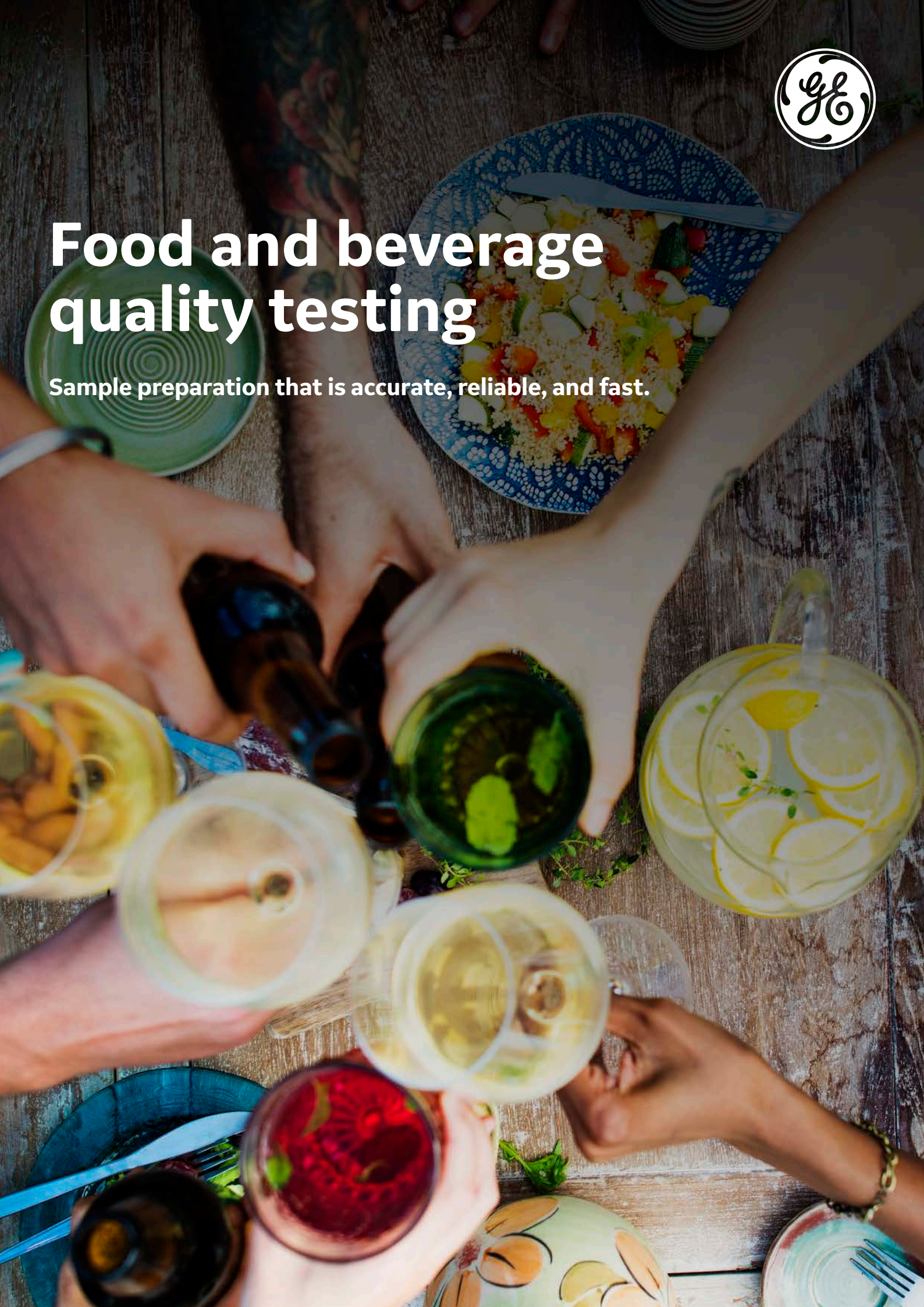




Food and beverage quality testing

Sample preparation that is accurate, reliable, and fast.



Quality matters

GE Healthcare is committed to quality. Our Whatman™ brand products are manufactured from high-purity raw materials, and our factories all operate to ISO 9001:2008 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.

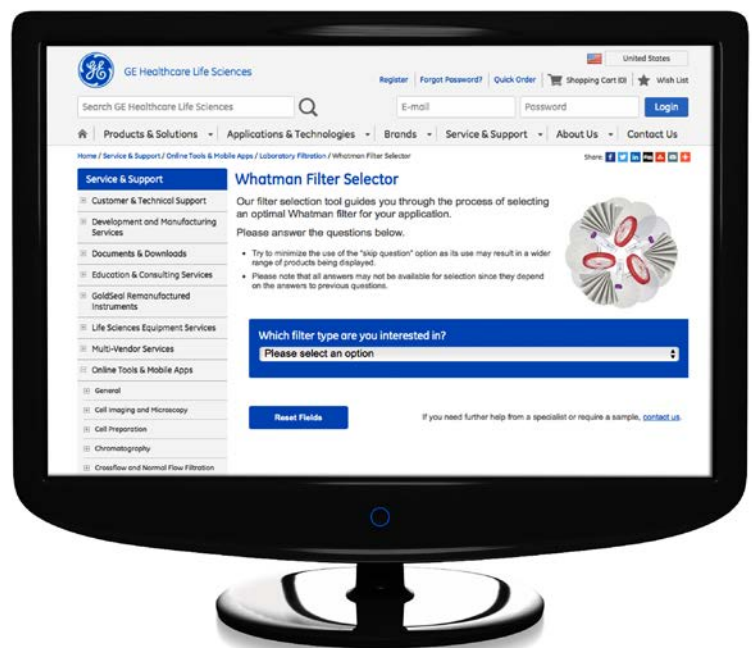
This brochure highlights the Life Sciences filtration solutions offered for the applications shown on page 3. We also offer interactive filter selection tools so you can quickly and easily find a filtration product that will work well for you.



Select your filter online at
gelifesciences.com/LabFilterSelector



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



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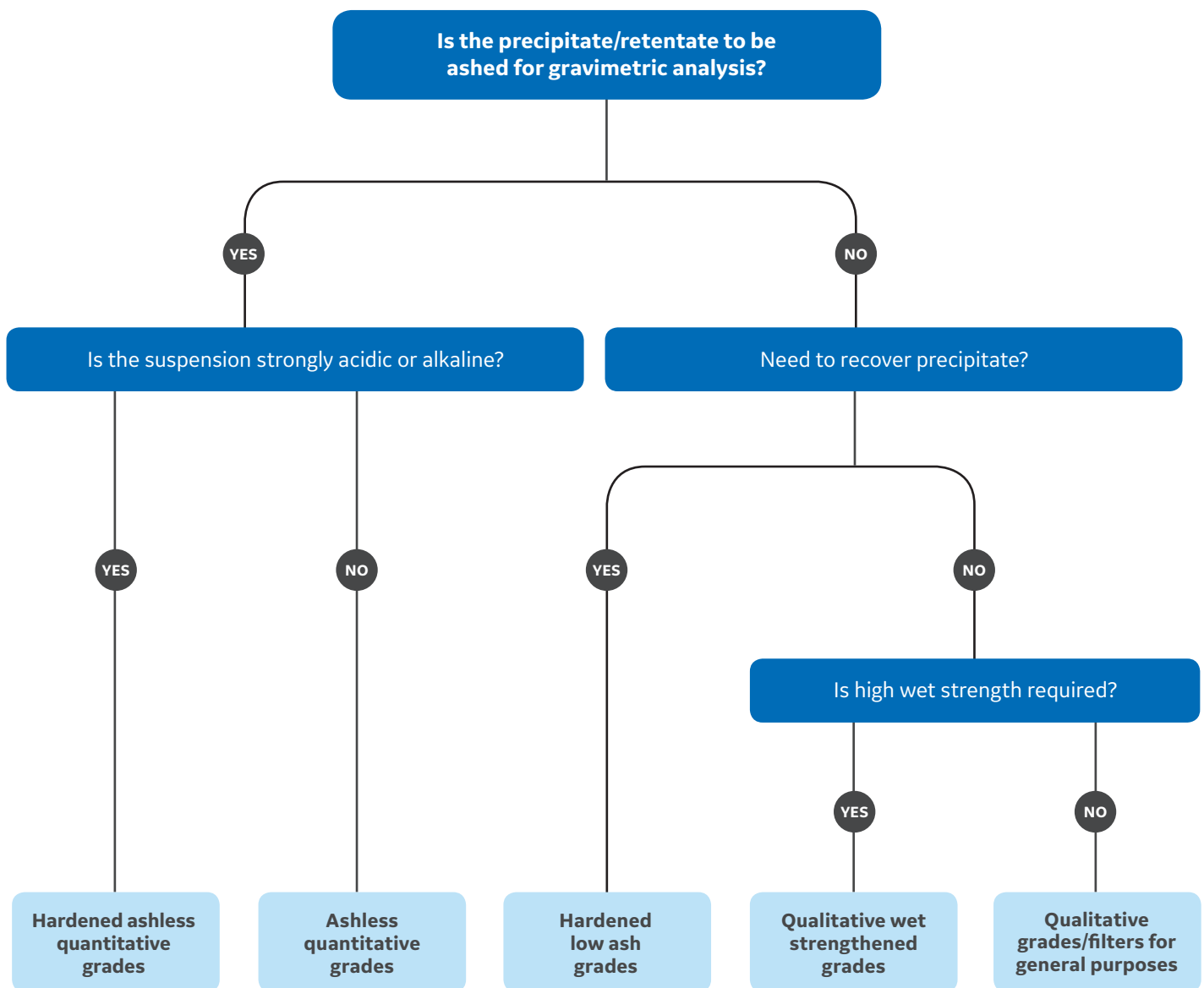
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Cellulose filter papers and products

Key application: clarification and solids retention

Various test methods require that liquid components of a solution be separated from suspended solids prior to analysis. GE offers a wide choice of cellulose filter papers with different flow rates, loading capacities, and chemical resistances to support these applications.



Key application: clarifying sugar solution

Whatman Grade 5 qualitative filter papers have been shown to support ICUMSA methods for measuring sucrose content. Visit gelifescience.com/foodandbeverage for more information.

Key application: degassing carbonated beverages



Qualitative wet strengthened filters.

Technical characteristics of qualitative filter papers and filters for general purposes

Grade	Nominal particle retention in liquid (µm)	Filtration speed (approx) Herzberg (s)	Typical thickness (µm)	Basis weight (g/m ²)	Grade for pre-pleated version	Flow - aspect
Qualitative filters						
1	11	150	180	88	Medium	
2	8	240	190	103	2V	Medium
3	6	325	390	187	Medium - thick	
4	20-25	37	205	96	Very fast	
5	2.5	1420	200	98	Slow	
595 [‡]	4-7	80	150	68	595 ½	Medium to fast - thin
597 [§]	4-7	70	180	85	597 ½	Medium to fast
Filters for general purposes						
0858 [‡]	7-12	55	170	75	0858 ½	Medium to fast - grained
0860 [‡]	7-12	60	180	75	0860 ½	Medium to fast - smooth
2555 [§]	7-12	55	170	75	2555 ½	Medium to fast
Qualitative wet strengthened filters						
113	30	28	420	125	113V	Fast - creped
114	25	38	190	77	114V	Fast - smooth

[‡] Commonly used for degassing and clarification of beer

[§] Commonly used for malt analysis (beer)

Gas bubbles can interfere with accurate colorimetric analysis. Whatman Grade 2V cellulose paper has been shown to remove over 77% of CO₂ from a filtered sample. This filter also comes pre-pleated to save setup time. Visit gelifescience.com/foodandbeverage for more information.

Ordering information†

Diam./Grade	1	2	3	4	5	595	597	113	114
Qualitative filters - flat, 100 per pack									
90 mm	1001-090	1002-090	1003-090	1004-090	1005-090	-	10311809	1113-090	1114-090
110 mm	1001-110	1002-110	1003-110	1004-110	1005-110	10311610	10311810	1113-110	-
125 mm	1001-125	1002-125	1003-125	1004-125	1005-125	10311611	10311811	1113-125	1114-125
150 mm	1001-150	1002-150	1003-150	1004-150	1005-150	10311612	10311812	1113-150	1114-150
185 mm	1001-185	1002-185	1003-185	1004-185	1005-185	-	10311814	1113-185	1114-185
240 mm	1001-240	1002-240	1003-240	1004-240	1005-240	-	10311820	1113-240	1114-240
270 mm	1001-270	1002-270	1003-270	1004-270	-	-	-	-	1114-270
320 mm	1001-320	1002-320	1003-320	1004-320	1005-320	-	10311822	1113-320	-
385 mm	1001-385	1002-385	-	-	-	-	-	-	-

Diam./Grade	2V	595 ½	597 ½	2555 ½	0858 ½	0860 ½	113V	114V
Qualitative filters and filters for general purposes - pre-pleated, 100 per pack								
110 mm	-	10311643	10311843	-	-	-	-	-
125 mm	1202-125	10311644	10311844	-	-	-	1213-125	1214-125
150 mm	1202-150	10311645	10311845	-	10334345	10334547	1213-150	1214-150
185 mm	1202-185	10311647	10311847	10313947	10334347	-	1213-185	1214-185
210 mm	-	10311649	-	-	-	-	-	-
240 mm	1202-240	10311651	10311851	10313951	10334351	10334551	1213-240	1214-240
270 mm	1202-270	10311652	10311852	-	10334352	-	1213-270	1214-320
320 mm	1202-320	10311653	10311853	10313953	10334353	10334553	1213-320	-
385 mm	1202-385	10311654	10311854	-	-	-	-	-

† Contact your local representative for more information on the rest of the Whatman filter paper range



Qualitative filters.

Technical characteristics of ashless quantitative filter papers

Grade	Nominal particle Grade retention in liquid (µm)	Filtration speed (approx) Herzberg (s)	Typical thickness (µm)	Basis weight (g/m ²)	Grade for pre-pleated version	Flow - aspect
40 [‡]	8	340	210	95	-	Medium
41 [‡]	20	54	220	85	-	Fast
42 [‡]	2.5	1870	200	100	-	Slow
43 [‡]	16	155	220	95	-	Medium to fast
44 [‡]	3	995	180	80	-	Slow to medium
589/1 [§]	12-25	25	190	80	589/1 ½	Fast
589/2 [§]	4-12	70	190	85	589/2 ½	Medium to fast
589/3 [§]	<2	750	150	84	-	Slow

[‡] Typical ash content is 0.007%

[§] Typical ash content is 0.01%

Ordering information[†]

Diam./Grade	40	41	42	43	44	589/1	589/2	589/3
Ashless quantitative filters – flat, 100 per pack								
90 mm	1440-090	1441-090	1442-090	1443-090	1444-090	10300009	10300109	-
110 mm	1440-110	1441-110	1442-110	1443-110	1444-110	10300010	10300110	10300210
125 mm	1440-125	1441-125	1442-125	1443-125	1444-125	10300011	10300111	10300211
150 mm	1440-150	1441-150	1442-150	1443-150	1444-150	10300012	10300112	10300212
185 mm	1440-185	1441-185	1442-185	1443-185	1444-185	10300014	10300114	10300214
240 mm	1440-240	1441-240	1442-240	-	1444-240	-	10300120	-
320 mm	1440-320	1441-320	1442-320	-	-	-	-	-

[†] Contact your local representative for more information on the rest of the Whatman filter paper range

Diam./Grade	589/1 ½	589/2 ½
Ashless quantitative filters – pre-pleated, 100 per pack		
110 mm		10300143
150 mm	10300045	10300145



Whatman Grade 40 and 41 ashless filter paper.

Nitrogen, phosphorous, and lipid analysis

What are you testing for?	Method	Product
Nitrogen	Kjeldahl analysis	Weighing boats
Trace elements	Various	Glass or cellulose filter paper
Phosphorus	Colorimetry	Grade 512 1/2 prefolded low phosphate filter paper
Lipids	Soxhlet extraction	Cellulose thimbles

Key application: nitrogen analysis

Nitrogen content analysis is typically done with Kjeldahl techniques, which involve the sampling of an exact amount of sample before transfer to a digestion tube. Low nitrogen content weighing paper makes the sample transfer easy and quick without loss of material and with minimal interference with the end result. The sample might need to be filtered through a Whatman brand qualitative filter paper prior to analysis.



Low nitrogen content weighing boats.

Ordering information

For what use?	Product	Quantity	Product code
Kjeldahl analysis	Grade 609 weighing boats	100/pack	10313032
Phosphorus analysis	Grade 512 1/2*	100/pack	10310643

* For a full list of pack sizes visit gelifsciences.com

Key application: trace element extraction

Most trace element tests are based on extracting a sample and measuring the concentration of trace elements in the liquid phase. Extraction methods can vary between laboratories. The sample then generally needs to be filtered through a qualitative filter paper (p. 5) or glass fiber filter (p. 13) to make sure it will not clog nebulizers or interfere with injection into the analysis instrument. If digested with aqua regia, the sample might be filtered through an ashless filter paper. If syringe filters are used as an additional sample preparation step, please see page 15.

Key application: phosphorus analysis by colorimetry

To determine the phosphorus content, the sample is extracted with a chemical solution and the phosphorus content in the extract is measured by colorimetry. Filtration of the extract through a qualitative filter paper is generally needed before analysis, please see page 8 for ordering information. If an automated method is used for determining phosphorus concentration, acid-resistant filter paper might be needed.

Key application: acid testing

Determination of acid presence and concentration in beverages such as wine can be performed by applying a sample of the liquid to chromatography paper. Allow the paper to separate acidic content, and then dry the paper. The acids that are present in the sample can then be determined by the spots on the paper.



Ordering information

Product	Quantity/pack	Product code
1 Chr sheets, 20 x 20 cm	100	3001-861

Key application: Soxhlet extraction for lipid analysis

Food samples can be prepared for lipid analysis using Soxhlet extraction. Extraction thimbles are widely used for Soxhlet techniques. After extraction samples can be refiltered with a 0.45 µm filter to remove small particles in order to protect your analytical instrument.



Extraction thimbles in Soxhlet extraction apparatus.

Ordering information

Dimensions [†]	Wall thickness	
	1 mm	1.5 mm
10 × 50 mm	2800-105	-
18 × 55 mm	2800-185	-
19 × 90 mm	2800-199	-
22 × 65 mm	2800-226	-
22 × 80 mm	2800-228	10350211
25 × 60 mm	10350416	10350215
25 × 70 mm	-	10350216
25 × 80 mm	2800-258	10350217
25 × 100 mm	2800-250	10350219
26 × 60 mm	2800-266	10350220
27 × 80 mm	-	10350223
28 × 60 mm	-	10350225
28 × 80 mm	2800-288	10350226
28 × 100 mm	2800-280	10350227
28 × 120 mm	2800-282	-
30 × 80 mm	2800-308	10350234
30 × 90 mm	-	10350235
30 × 100 mm	2800-300	10350236
31 × 80 mm	10350437	10350303
33 × 60 mm	-	10350238
33 × 80 mm	2800-338	10350240
33 × 100 mm	2800-330	10350243
33 × 118 mm	2800-331	10350245
33 × 130 mm	-	10350247
33 × 205 mm	-	10350250
33 × 90 mm	-	10350241

Dimensions [†]	Wall thickness		
	1 mm	1.5 mm	2.0 mm
33 × 94 mm	2800-339	10350242	2810-339
34 × 130 mm	-	10350252	-
35 × 120 mm	-	10350254	-
35 × 150 mm	-	10350255	-
37 × 130 mm	2800-373	-	-
40 × 85 mm	-	10350261	-
41 × 123 mm	2800-412	10350265	-
43 × 123 mm	2800-432	2810-432	-
44 × 230 mm	-	-	10350275
48 × 145 mm	-	10350273	-
48 × 200 mm	-	-	10350274
60 × 180 mm	2800-608	-	-
75 × 250 mm	-	-	10350287 [‡]

[†] Internal diameter and external length

[‡] Wall thickness: 2.5 mm

Filtration membranes

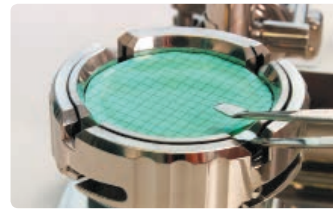
Key application: bacterial detection and measurement

Filtration considerations

Microorganisms in a sample are collected using a microfiltration membrane filter. The membrane can then be transferred onto a microbiological culture medium for further identification and/or quantification of microorganisms.

Membrane filtration methods are commonly used for the detection of microorganisms such as *E. coli*, *Clostridia*, fecal coliforms, *Legionella*, *Staphylococci*, and *Pseudomonas aeruginosa*. These methods involve the use of membrane filters and filtration manifolds.

Workflow



(A) Tight sealing of funnel and membrane reducing any cross contamination to a minimum by special sealing technique.

(B) Apply liquid and allow to filter through.

(C) Easy removal of the membrane.

Membrane material	Cellulose mixed ester	High-flux cellulose nitrate	Nylon (polyamide)	Polycarbonate
Product name	ME	MicroPlus	NL	Nuclepore™
Color	White, black or green	White or black	White	White or black
Pore size	0.2 µm/0.45 µm/ 0.6 µm/0.8 µm	0.45 µm	0.2 µm/0.45 µm	0.2 µm/0.4 µm (and other pore sizes)
Application examples	<i>Enterococcus</i> , <i>E. coli</i> , <i>Clostridia</i> , fecal coliforms, <i>Staphylococcus</i> , <i>Pseudomonas aeruginosa</i> , etc		<i>Legionella</i>	<i>Legionella</i>

Accessories for microbiological control

Product	Description	Quantity/pack	Product code
AS 200	2-place vacuum manifold	1	10 445 890
Funnel dispenser	Automatic dispenser for funnels	1	10 445 870
Funnels 100 mL	PP (autoclavable)	20	10 445 861
Funnels 350 mL	PP (autoclavable)	20	10 445 866
Autoclaving bags	Autoclaving bags for MBS I funnels	20	10 445 868
Membrane-Butler	Manual dispenser for membranes	1	10 477 100



Membrane-Butler.

Key application: filterability testing

Filterability testing can be used to help determine bottling readiness of wine. To determine the filterability index, apply negative pressure to draw a sample of wine through a 0.45 µm membrane.



Microplus membrane filters.

Ordering information

Membrane filters

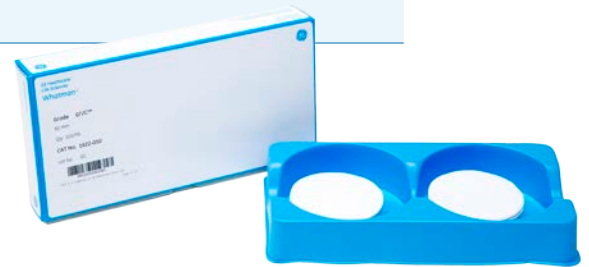
Diameter					25 mm	47 mm	50 mm	
Membrane material/type	Pore size	Color	Sterile	Membrane-Butler compatible	Product code	Product code	Product code	Quantity
Cellulose mixed ester/ME type	0.2 µm	white	yes	no	–	10406970	10406972	100/pack
	0.2 µm	white	yes	yes	–	10408712	10408714	400/pack
	0.45 µm	white	yes	no	–	10406870	10406872	100/pack
	0.45 µm	white	yes	yes	–	10407312	10407314	400/pack
	0.45 µm	black/white grid	yes	yes	–	10409770	–	100/pack
	0.45 µm	black/white grid	yes	yes	–	10407332	–	400/pack
Cellulose nitrate/ Microplus	0.45 µm	white	yes	no	–	10407713	10407714	100/pack
	0.45 µm	white	yes	yes	–	10407112	10407114	400/pack
	0.45 µm	black	yes	no	–	–	10407734	100/pack
	0.45 µm	black	yes	yes	–	10407132	–	400/pack
Polycarbonate/ Nuclepore	0.2 µm	white	no	no	–	111106	111206	100/pack
	0.4 µm	white	no	no	–	111107	111207	100/pack
	0.8 µm	black	no	no	110659	–	–	100/pack
Nylon (Polyamide)/NL	0.4 µm	white	no	no	–	10414112	10414114	100/pack

Glass fiber filters

Key application: moisture and solids analysis

The processes for measuring moisture in food or solids in water are quite similar. In both cases a sample is placed on a filter and weighed. It is then heated to evaporate any water present and weighed again. The difference between the two measurements is the moisture content, and the final weight is the solids content. Such measurements are typically performed using glass fiber filter circles that need additional preparation prior to use. However, GE has developed ready-to-use 934-AH RTU glass fiber filters, which are supplied in a prewashed and preweighed format and enable considerable time savings in the laboratory. 934-AH RTU filters also provide reproducible results and low background contamination.

▶ What are you testing for?	▶ Product	▶ Characteristics and benefits
Moisture content of foodstuff. Solids, including: <ul style="list-style-type: none"> • total suspended • total dissolved • total volatile 	GF/C™ 934-AH™ glass fiber filters	<ul style="list-style-type: none"> • Conform to requirements of standard methodologies for solids testing in water: GF/C for EN 872; 934-AH for Standard Method 2540D • High loading capacity enabling filtration of very turbid samples • Retention of very fine particles
	934-AH RTU	<ul style="list-style-type: none"> • Share same benefits as traditional 934-AH glass fiber filters • Ready-to-use format • Prewashed, preweighed according to 2540D • Each pretreated filter comes in an aluminium pan, with the filter weight clearly noted • Each pan has its own unique barcode



GF/C glass fiber filters meet the requirements of EN 872.

Ordering information

Glass fiber filters for solids analysis, 100/pack

Grades	GF/C	934-AH	934-AH RTU preweighed, prewashed*
Typical particle retention (µm)†	1.2 µm	1.5 µm	1.5 µm
Diameter (mm)	Product code	Product code	Product code
42.5	1822-042	1827-042	9907-042
47	1822-047	1827-047	9907-047
55	1822-055	1827-055	9907-055
70	1822-070	1827-070	–
90	1822-090	1827-090	9907-090

* Each filter is supplied in an individual aluminium pan

† Particle retention rating at 98% efficiency

Filtration device

Key application: chemical analysis

Chemical analyses are commonly performed using analytic instrumentation. Filtration of samples prior to analysis is good practice in order to remove unwanted particles from the analysis and to protect delicate instrumentation from potentially damaging compounds. Key to good sample preparation is selection of an appropriate filter membrane and device. General guidelines on membrane compatibility can be found in the following table. Selection of a broadly compatible membrane such as regenerated cellulose is recommended.

Characteristics of common membranes

Membrane ¹	Solvent compatibility		Qualities	
	Aqueous	Nonaqueous	Low protein binding	Low extractables
RC	+++	+++	+++	+++
CA	+++	-	+++	+
ME	+++	+	+	-
CN	+++	-	-	-
PVDF	+++	+++	+++	+
PP	+++	+++	-	-
NYL	+++	+	-	-
PES	+++	+	+++	+++
PTFE	-	+++	-	+
Anopore™	+++	+	+++	+++
PC	+++	+	+++	+++

¹ RC = regenerated cellulose; CA = cellulose acetate; ME = mixed ester; CN = cellulose nitrate; PVDF = polyvinylidene fluoride; PP = polypropylene; NYL = nylon; PES = polyethersulfone; PTFE = Polytetrafluoroethylene; PC = polycarbonate.

+++ strong characteristic
 + weak characteristic
 - does not have characteristic

Standardize on a single membrane type across applications



Membrane filter

Degas and purify your mobile phase

Mobile phase filtration p. 16



Uniflo™ and Puradisc

Everyday use

Preventive care p. 17



SPARTAN™

Every lot HPLC-tested to ensure low extractables

Method development p. 21



Whatman GD/X™

Processes more sample with less back pressure

Syrups, sludges, and thick samples p. 22



Mini-UniPrep™

Designed for autosamplers and out-of-lab sample prep

Automated processing p.25

Mobile phase filtration

Whatman RC55 and GV 050/2 vacuum filtration unit for solvent filtration

Use the same material for mobile phase filtration and sample filtration to:

- Reduce variation of analysis
- Reduce rate of column clogging
- Enhance lifetime of column

If in-line degassing is required, consider the Whatman In-line filter/degasser.

Choose from two membrane options:

- Nylon – when mobile phase is > 20% aqueous
- Polypropylene – for non-aqueous solvents



Whatman RC55 filters and GV 050/2 vacuum filtration unit.

Ordering information

Description	Quantity/pack	Product code
Regenerated Cellulose circles (RC55), 0.45 µm, 47 mm	100	10410212
Regenerated Cellulose circles (RC55), 0.45 µm, 50 mm	100	10410214
GV 050/2, glass frit filter, hose coupling connection, Erlenmeyer flask 1000 mL (NS45)	1	10442200
Whatman In-line filter/degasser, polypropylene (0.8 mm - 0.4 mm tubing)	1	6725-5002
Whatman In-line filter/degasser, polypropylene (1/8" tubing)	1	6725-5002A
Whatman In-line filter/degasser, nylon (0.8 mm - 0.4 mm tubing)	1	6726-5002
Whatman In-line filter/degasser, nylon (1/8" tubing)	1	6726-5002A



Preventive care: Uniflo and Puradisc 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.

- Manufactured to a high standard in GE facilities operated to ISO 9001:2008 standards
- RC available in 13 mm and 25 mm diameters; hold-up volume < 25 µL for 13 mm and < 100 µL for 25 mm
- Available in non-RC membrane types to support a variety of other applications



Uniflo and Puradisc filters.

Typical data Uniflo and Puradisc Syringe Filters

	4 mm diameter*	13 mm diameter [†]	25 mm diameter [†]	30 mm diameter*
Housing	Polypropylene	Polypropylene	Polypropylene	Polycarbonate
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' 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

* Diameters available for Puradisc only.

[†] Data the same for Puradisc and Uniflo, except: Uniflo filtration area = 0.65 cm²; Max pressure = 67.5 psi (4.7 bar); Volume hold up is < 50 µL; dimensions = 19.6 × 16.9 mm

[‡] Data the same for Puradisc and Uniflo, except: Uniflo filtration area = 4.9 cm²; Max pressure = 67.5 psi (4.7 bar); dimensions = 24.5 × 29.2 mm

[§] Applies to nonsterile filters only. Do not autoclave sterile filters

Ordering information



Uniflo filters

Membrane	Diameter (mm)	Pore size (µm)	Quantity/pack	Product code	
RC	13	0.20	500	10463852	
			1000	10463875	
		0.45	500	10463862	
			1000	10463876	
	25	0.20	500	10463452	
			1000	10463453	
			0.45	500	10463462
				1000	10463463
		1000		10463876	
				10463876	



4 mm Puradisc Syringe Filters

Membrane [†]	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	
	Nylon	PVDF	PES	PVDF	Quantity/pack
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

† Particle Retention Rating

‡ DpPP = Polypropylene Depth Filter



30 mm Puradisc FP Syringe Filters

Description	Diameter (mm)	Pore size (µm)	Membrane/housing*	Connection in/out*	Color code	Quantity/pack	Product code
Individually sterile packed							
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

Sold under license to DE10102744 and foreign equivalents thereof

Certified quality for method development: SPARTAN filters

SPARTAN brand syringe filters are HPLC-certified for confidence and consistent results. Tested and certified for the absence of UV-absorbing substances (210 and 254 nm) with water, methanol, acetonitrile to ensure absence of interfering substances.

- Hydrophilic, low protein-binding membrane made of regenerated cellulose
- Excellent chemical resistance against the standard aqueous and organic HPLC solvents
- 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



SPARTAN filters.

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

Sold under license to DE10102744 and foreign equivalents thereof

High-particulate, challenging sample filtration: Whatman GD/X filters

Filter even the most difficult samples and use less hand pressure with GD/X syringe filters.

- Exceptional loading capacity and fast flow rates – prevents back pressure and clogging of membrane
- Graduated microfiber prefilter from 1 µm to 0.7 µm
- Higher flow rates (3x) compared to unprotected membranes
- Uses glass microfiber-based prefilters



For metals testing and other applications where glass-based compounds could interfere with analysis, we offer a related syringe filter (GD/XP), which uses polypropylene prefilters.

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 ²	4.6 cm ²
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: 1 µm GF/F 0.7 µm	100% borosilicate GMF 150: 1 µm GF/F 0.7 µm

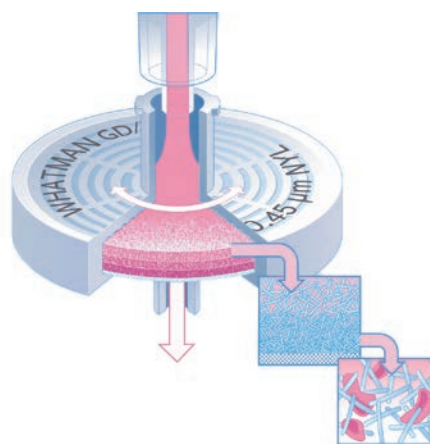
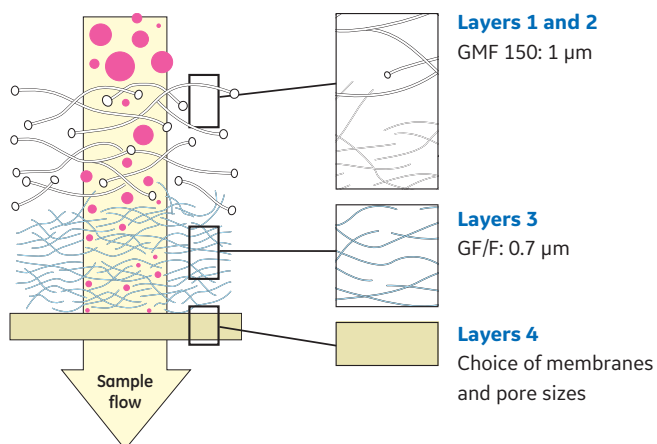
Typical data

GD/XP Syringe Filters

	GD/XP 25 mm
Housing	Polypropylene (pigment-free)
Filtration area	4.6 cm ²
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

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

[†] Not recommended for nylon.



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	-	-	-
	0.45	25	6869-2504	-	-	-
Nylon	0.2	13	6870-1302	6871-1302	-	-
	0.2	25	6870-2502	6871-2502	-	-
	0.45	13	6870-1304	6871-1304	-	-
	0.45	25	6870-2504	6871-2504	-	-
	5	25	6870-2550	6871-2550	-	-
PVDF	0.2	13	6872-1302	-	-	-
	0.2	25	6872-2502	6873-2502	6900-2502	-
	0.45	13	6872-1304	6873-1304	-	-
	0.45	25	6872-2504	6873-2504	6900-2504	-
PTFE	0.2	13	6874-1302	6875-1302	-	-
	0.2	25	6874-2502	6875-2502	-	-
	0.45	13	6874-1304	6875-1304	-	-
	0.45	25	6874-2504	6875-2504	-	-
PES	0.2	13	6876-1302	-	-	-
	0.2	25	6876-2502	6905-2502	6896-2502	6897-2502
	0.45	13	6876-1304	-	-	-
	0.45	25	6876-2504	6905-2504	6896-2504	6897-2504
PP	0.2	13	6878-1302	-	-	-
	0.2	25	6878-2502	-	-	-
RC	0.2	25	6887-2502	-	-	-
	0.45	25	6882-2504	6883-2504	-	-
CA	0.2	13	6880-1302	-	-	-
	0.2	25	6880-2502	-	6901-2502	-
	0.45	13	6880-1304	-	-	-
	0.45	25	6880-2504	-	6901-2504	-
GF/A [‡]	1.6 [†]	13	6882-1316	-	-	-
	1.6 [†]	25	6882-2516	6883-2516	-	-
GF/B [‡]	1 [†]	13	6884-1310	-	-	-
	1 [†]	25	6884-2510	-	-	-
GF/C [‡]	1.2 [†]	13	6883-1312	-	-	-
	1.2 [†]	25	6886-2512	-	-	-
GF/D [‡]	2.7 [†]	13	6888-1327	-	-	-
	2.7 [†]	25	6888-2527	-	-	-
GF/F [‡]	0.7 [†]	13	6890-1307	-	-	-
	0.7 [†]	25	6890-2507	6891-2507	-	-
	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

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



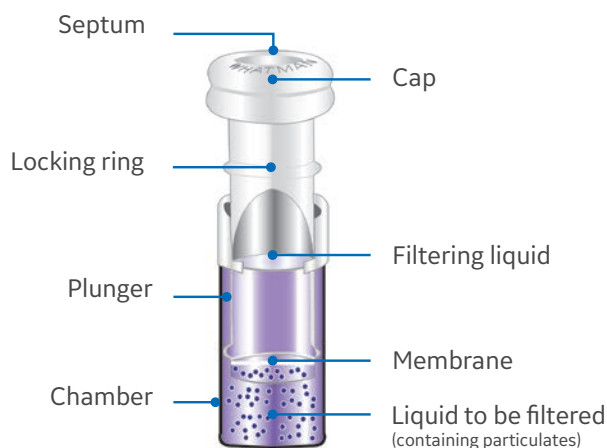
Autosampler and workflow support: Mini-UniPrep filters

Whatman Mini-UniPrep Syringeless Filters – polypropylene or glass chambers

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

Parts of a Mini-UniPrep filter



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)
RC*	0.2	Translucent	Normal	GN203NPERC	GN503NPERC	GN203NPERCSP
RC	0.45	Translucent	Normal	GN203NPURC	GN503NPURC	GN203NPURCSP
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
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

Sample preparation prior to other instrumentation

GE's 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

11 12



Puradisc FP

3* 4 8*
10 13

*Notes:
3 and 8: CA



ReZist

1 4 13



Applications

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. Ion chromatography
8. Filtration of protein-containing samples
9. Filtration of nanoparticles
10. Sterile filtration (use sterile filter
and membrane with pore size 0.2 µm)
11. COD/TOC/DOC
12. Trace metal analysis (ICP/AAS/ICP-MS)
13. 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

Anotop

3 4 6 7
8 9* 10 13

*Notes: 0.02 µm



Anotop Plus

4 5 9*

*Notes: 0.02 µm



Roby

2



SPARTAN

4 8 13



Whatman GD/X

4 5 10 13



Puradisc

3* 4 8* 10
11+ 12* 13

*Notes:
3 and 8: CA, PES, PVDF
11 and 12: PES



Mini-UniPrep

2



GD/XP

4 5 7
11 12 13



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



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 [†]
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 [†]
10463804	Roby 25 NL-GF92	25	0.45	NYL-GF/PP	FLL/ML	yellow	1000
10463807 [#]	Roby 25 RC	25	0.45	RC/PP	FLL/ML	translucent brown	200 [†]
10463806 [#]	Roby 25 RC	25	0.45	RC/PP	FLL/ML	translucent brown	1000
10463809 [#]	Roby 25 RC-GF92	25	0.45	RC-GF/PP	FLL/ML	brown	200 [†]
10463808 [#]	Roby 25 RC-GF92	25	0.45	RC-GF/PP	FLL/ML	brown	1000
10463813 [#]	Roby 25 CA-GF92	25	0.45	CA-GF/PP	FLL/ML	green	200 [†]
10463812 [#]	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 [†]
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 [†]
10463800	Roby 25/GF92	25	> 1	GF/PP	FLL/ML	natural	1000
10463898 [#]	Filter Validation Kit [‡]	25	-	-	FLL/ML	-	150

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

[†] 8 tubes with 25 pieces each

[‡] 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)

[#] Sold under license to DE10102744 and foreign equivalents thereof



Anotop Syringe Filters

Product code	IC certified	Pore size (µm)	Diameter (mm)	Glass prefilter	Sterile blister packed	Quantity/pack
6809-1002	No	0.02	10	No	No	50
6809-1012	No	0.1	10	No	No	50
6809-1022	No	0.2	10	No	No	50
6809-1102	No	0.02	10	No	Yes	50
6809-1112	No	0.1	10	No	Yes	50
6809-1122	No	0.2	10	No	Yes	50
6809-3002	No	0.02	10	Yes	No	50
6809-3012	No	0.1	10	Yes	No	50
6809-3022	No	0.2	10	Yes	No	50
6809-3102	No	0.02	10	Yes	Yes	50
6809-3112	No	0.1	10	Yes	Yes	50
6809-3122	No	0.2	10	Yes	Yes	50
6809-2002	No	0.02	25	No	No	50
6809-2012	No	0.1	25	No	No	50
6809-2022	No	0.2	25	No	No	50
6809-2102	No	0.02	25	No	Yes	50
6809-2112	No	0.1	25	No	Yes	50
6809-2122	No	0.2	25	No	Yes	50
6809-4002	No	0.02	25	Yes	No	50
6809-4012	No	0.1	25	Yes	No	50
6809-4022	No	0.2	25	Yes	No	50
6809-4102	No	0.02	25	Yes	Yes	50
6809-4112	No	0.1	25	Yes	Yes	50
6809-4122	No	0.2	25	Yes	Yes	50
6809-9233	Yes	0.2	10	No	No	100
6809-9232	Yes	0.2	10	No	Yes	50
6809-9244	Yes	0.2	25	No	No	200

IC = ion chromatography

Whatman Autovial™ Syringeless Filters replace syringe-coupled filtration devices with a single, convenient disposable unit. Consisting of a plunger and a graduated filter barrel with a choice of filtration media, Autovial speeds sample preparation—so you can get more work done in less time. Simply pour the sample directly into the filter barrel, insert the plunger, and compress the unit. The filter barrel has a support stand to protect the slip Luer outlet. Autovial Syringeless Filters are designed for filtration both into an autosampler and through direct instrument injection, by connecting a needle to the slip Luer outlet.

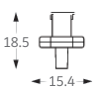
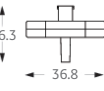
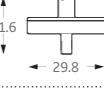
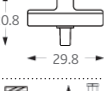
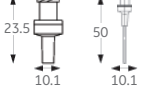
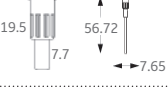
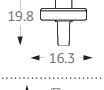
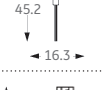
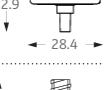


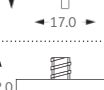
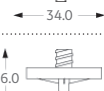
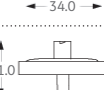
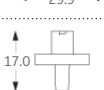



Autovial Syringeless Filters

Product code	Prefilter	Pore size (µm)	Media	Sterile blister packed	Quantity/pack
AV115NPUNYL	None	0.45	NYL	No	50
AV115NPUAQU	None	0.45	PVDF	No	50
AV115NPUORG	None	0.45	PTFE	No	50
AV115UGMF	None	0.45	GMF	No	50
AV125SNAO	-	0.2	NYL	Yes	40
AV125SAQU	-	0.2	PVDF	Yes	40
AV125SORG	Glass	0.2	PTFE	Yes	40
AV125UCA	Glass	0.45	CA	No	50
AV125ENAO	Glass	0.2	NYL	No	50
AV125UNAO	Glass	0.45	NYL	No	50
AV125NPUPSU	None	0.45	PES	No	50
AV125EAQU	Glass	0.2	PVDF	No	50
AV125UAQU	Glass	0.45	PVDF	No	50
AV125NPUAQU	None	0.45	PVDF	No	50
AV125EPP	PP	0.2	PP	No	50
AV125SUPP	PP	0.45	PP	No	50
AV125EORG	Glass	0.2	PTFE	No	50
AV125UORG	Glass	0.45	PTFE	No	50
AV125UGMF	Glass	0.45*	GMF	No	50
AV55UNAO	Glass	0.45	NYL	No	100
AV525UAQU	Glass	0.45	PVDF	No	100
AV525UORG	Glass	0.45	PTFE	No	100
AV525BGMF	Glass	1.0*	GF/B	No	100

* Particle retention rating

Technical data of syringe filters

Name	Dia. (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, 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	75/5.2	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

General laboratory accessories

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



1PS phase separator



Grade 105 lens cleaning tissue



Benchkote™ protection paper



pH paper



Vacu-Guard Pump protection filter

Description	Product name	Dimension	Quantity	Product code	
Phase separation paper <ul style="list-style-type: none"> • 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 <ul style="list-style-type: none"> • 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 <ul style="list-style-type: none"> • 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 <ul style="list-style-type: none"> • 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 <ul style="list-style-type: none"> • 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	
Weighing papers <ul style="list-style-type: none"> • Reliably allow samples to be transferred to scales without adding unwanted substances that could impact analytical results 	Grade 2122 weighing paper	100 × 100 m*	500/pack	10347893	

* Other dimensions available upon request



Fermentation vessel venting

	Membrane type	Filtration area	Product code
Polydisc TF	PTFE	16 cm ²	6720-5002
Hepavent	Hydrophobically treated glass microfiber	16 cm ²	6723-5000
Polyvent	PTFE	500 cm ²	6713-5036
		1000 cm ²	6713-1075
Hepacap	Hydrophobically treated glass microfiber	625 cm ²	2609T
		1300 cm ²	2709T
		2590 cm ²	2809T

Description	Product name	Dimension	Quantity	Product code
Filtration flask for batch filtration <ul style="list-style-type: none"> 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 	Whatman GV050/2 vacuum filtration unit			10442200
Pressure filtration apparatus <ul style="list-style-type: none"> Stainless steel Infusion vessel 2200 mL 	MD142/5/3	142 mm	1	10451610
Pressure filter holder <ul style="list-style-type: none"> PTFE Infusion vessel 1500 mL 	MD142/7/3	142 mm	1	10451710
3-piece filter funnel <ul style="list-style-type: none"> For quick and easy filtration Choice of 3 plates 	Filter funnel	47 mm	1	1950-004
	Filter funnel	90 mm	1	1950-009
	Filter funnel	70 mm	1	1950-017
Membrane holder <ul style="list-style-type: none"> Produced from borosilicate glass Suitable for aqueous and organic solvent filtration 	Vacuum-type glass membrane holder	47 mm	1	1960-004
	Vacuum-type glass membrane holder	90 mm	1	1960-009

Chemical compatibility of membranes and housings*

Selecting the right filter depends on the solvent that you are using for your application. This table will help ensure that you get it right the first time.

Solvent	ANP	CA	CN	PC	PE	GMF	NYL	PP	DpPP	PES	PTFE [‡]	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 [†]	R	R	R	NR	R	R	LR	NR	NR	R	R	R	R
Benzyl alcohol [†]	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 [†]						R	NR	NR	NR		R	R	
Carbon tetrachloride [†]	R	NR	R	LR	R	R	LR	NR	NR	NR	R	R	R
Chloroform [†]	R	NR	R	NR	R	R	NR	LR	LR	NR	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
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

Solvent	ANP	CA	CN	PC	PE	GMF	NYL	PP	DpPP	PES	PTFE [†]	PVDF	RC
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 [‡]	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 [‡]	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 [‡]	R	LR	R	NR	R	R	LR	LR	LR	NR	R	R	R
Trichloroethane [‡]	R	NR	LR	NR	R	R	LR	LR	LR	NR	R	R	R
Trichloroethylene [‡]	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 [‡]	R	R	R			R	LR	LR	LR	LR	R	R	R
Xylene [‡]	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

[†] 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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