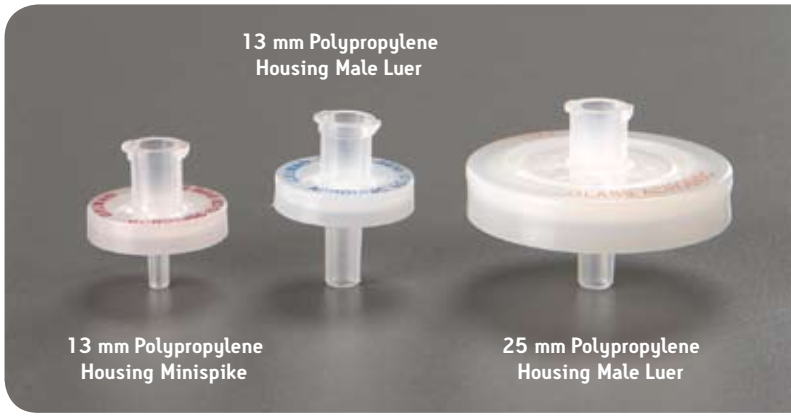
PALL LIFE SCIENCES SAMPLE AND SOLVENT FILTRATION PRODUCTS

Filtration of samples and solvents is a preventative maintenance procedure that saves lab time and money. Filtration provides immediate protection for the components of column and instrumentation by minimizing down time.

Pall Life Sciences filters have been Certified for Compliance; which means they have been designed and developed to assist customers in complying with their regulatory and quality objectives.

Waters carries a broad range of Pall Life Sciences filter products, a range of different membranes for solvent and sample compatibility, and a variety of devices for various filtration applications.



Choosing the right filter for your application

To choose the right filter you need to consider sample characteristics; volume, pore size, and decide if the sample may require pre-filtration if it is laden with particulate matter.

Membrane Choices

GHP Acrodiscs® - Hydrophilic propylene membrane suitable for aqueous, organic and has low protein binding.

Nylon Acrodiscs - Hydrophilic nylon membrane

GHP Acrodiscs GF and Nylon Acrodiscs GF - Designed with a glass fiber prefilter over the membrane for hard to filter samples laden with particulate matter.

Glass Fiber Acrodiscs - Can be used alone or as a prefilter with another Acrodisc in series.

Acrodisc LC (PVDF) - Hydrophilic polyvinylidene fluoride good for aqueous and organic solvents.

Acrodisc CR (PTFE) - Used for aggressive organic solvents

Versapor Acrodiscs - acrylic copolymer on a non-woven support

Ion Chromatography (IC) Acrodiscs - Hydrophilic polyethersulfone certified to contain low ionic backgrounds

Pore and Device Size

The follow chart can be used as a guideline in choosing the pore size and device. Waters recommends a 0.2 µm pore size filter for chromatography columns with a 3 µm particle size or less. For sample volumes less than 10 mL, choose a 13 mm diameter Acrodisc filter.

PORE SIZE	0.2 µm		0.45 µm	
Membrane Device	Column Particle	Sample Volume	Column Particle	Sample Volume
Acrodisc 13 mm	<=3µm	<10mL	>3µm	<10mL
Acrodisc 13 mm Mini spike	<=3µm	<10mL	>3µm	<10mL
Acrodisc 25 mm	<=3µm	<10mL	>3µm	<10mL

Waters has created an online tool at www.waters.com/filterselector to guide you in selecting the proper filter product for sample. The tool guides you through three questions concerning, column particle size, volume of sample and the nature of the sample. The selection tool returns filter recommendations most suited to your application.

Solvent Compatibility Chart

R = RESISTANT
LR = LIMITED RESISTANCE
NR = NOT RESISTANT
• = INSUFFICIENT DATA

	Acetone	Acetonitrile	Acetic acid, glacial	n-Butanol	Chloroform	Dioxane	Dimethyl formamide	Dimethyl sulfoxide	Ethanol	Ethyl acetate	Ethyl ether	Freon TF	Hydrochloric acid (1N)	Hexane, dry	Methanol	Methylene chloride	Methyl ethyl ketone	N-Methylpyrrolidone	Isopropanol	Sodium hydroxide (5N)	Tetrahydrofuran	Tetrahydrofuran/water (50/50)	Toluene	Water
GH Polypro Syringe Filters																								
GHP Acrodisc® 13 (13 mm)	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R
GHP Acrodisc (25 mm)	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R
GHP Acrodisc GF (25 mm)	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R
PTFE Syringe Filters																								
Acrodisc 4CR PTFE (4 mm)	R*	R	R	R	LR	R	R*	R*	R	R*	R	R	R	R	R	LR	R*	R*	R	LR	LR	•	LR*	R
Acrodisc 13CR PTFE (13 mm)	R*	R	R	R	R	R	R*	R*	R	R*	R	R	R	R	R	R	R*	R*	R	R	R	R	R*	R
Acrodisc CR PTFE (25 mm)	R*	R	R	R	R	R	R*	R*	R	R*	R	R	R	R	R	R	R*	R*	R	R	R	R	R*	R
PVDF Syringe Filters																								
Acrodisc LC13 PVDF (13 mm)	NR*	R	R	R	R	R	NR*	NR*	R	R*	R	R	R	R	R	R	NR*	NR*	R	NR	R	R	R*	R
Acrodisc LC PVDF (25 mm)	NR*	R	R	R	R	R	NR*	NR*	R	R*	R	R	R	R	R	R	NR*	NR*	R	NR	R	R	R*	R
Nylon Syringe Filters																								
Nylon Acrodisc 4 (4 mm)	R*	R	R	R	NR	•	R*	R*	R	R*	NR	R	NR	R	R	NR	R*	R*	R	R	NR	LR	R*	R
Nylon Acrodisc 13 (13 mm)	R*	R	R	R	NR	•	R*	R*	R	R*	NR	R	NR	R	R	NR	R*	R*	R	R	NR	LR	R*	R
Nylon Acrodisc (25 mm)	R*	R	R	R	NR	•	R*	R*	R	R*	NR	R	NR	R	R	NR	R*	R*	R	R	NR	LR	R*	R
Nylon Acrodisc GF (25 mm)	R*	R	R	R	NR	•	R*	R*	R	R*	NR	R	NR	R	R	NR	R*	R*	R	R	NR	LR	R*	R
Ion Chromatography Syringe Filters																								
IC Acrodisc (13 mm & 25 mm)	NR	LR	NR	R	NR	•	NR	NR	•	LR	R	LR	•	LR	R	NR	•	NR	•	•	NR	•	R	R
Glass Fibre Syringe Filters																								
GF Acrodisc	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	LR	R	R	R	R
Acrylic Copolymer Syringe Filters																								
Non-sterile Acrodisc (25 mm)	NR	NR	NR	R	NR	NR	NR	NR	R	NR	NR	R	LR	NR	R	NR	NR	NR	R	R	NR	NR	NR	R
Disc Filters																								
GH Polypro	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R
FP Verciel (PVDF)	NR	R	R	R	R	LR	NR	NR	R	R	R	R	R	R	R	R	LR	NR	R	NR	LR	•	R	R
Nylaflo (Nylon)	R	R	NR	R	NR	R	R	R	R	R	R	LR	NR	•	LR	NR	NR	R	R	R	R	R	NR	R
TF (PTFE)	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R

Note:

R = Resistant

No significant change was observed in flow rate or bubble point of the membrane.

* UV absorbance was set at 254 nm

LR = Limited Resistance

Moderate changes in physical properties or dimension of the membrane were observed. The filter may be suitable for short term, non-critical use at room temperature.

NR = Not Resistant

The membrane is basically unstable. In most cases, extensive shrinkage or swelling occurs. The filter may gradually weaken or partially dissolve after extended exposure.

Syringe Filter Product Chart

ACRODISC 13 mm							
			0.2 µm			0.45 µm	
	Pack Size	100	300	1000	100	300	1000
Sample	Membrane						
Aqueous	NYLON	WAT200524	WAT200525	WAT200834	WAT200520	WAT200521	WAT200832
	LC (PVDF)	WAT200806	WAT200807		WAT200512	WAT200513	WAT200827
Non Polar	CR (PTFE)	WAT200506	WAT200507	WAT200823	WAT200502	WAT200503	WAT200821
Protein	LC (PVDF)	WAT200806	WAT200807		WAT200512	WAT200513	WAT200827
Ion Chromatography	IC	WAT200810	WAT200811	WAT200844	WAT200812	WAT200813	WAT200842
ACRODISC 13 mm MINI SPIKE							
			0.2 µm			0.45 µm	
	Pack Size	100	300	1000	100	300	1000
Sample	Membrane						
Aqueous	GHP	WAT097962	WAT097963		WAT200516	WAT200517	WAT200830
	NYLON	WAT200562	WAT200563	WAT200835	WAT200564	WAT200565	WAT200836
	LC (PVDF)	WAT200804	WAT200805	WAT200838	WAT200560	WAT200561	WAT200828
Non Polar	CR (PTFE)	WAT200556	WAT200557	WAT200824	WAT200558	WAT200559	WAT200825
	GHP	WAT097962	WAT097963		WAT200516	WAT200517	WAT200830
Protein	LC (PVDF)	WAT200804	WAT200805	WAT200838	WAT200560	WAT200561	WAT200828
	GHP	WAT097962	WAT097963		WAT200516	WAT200517	WAT200830
ACRODISC 25 mm							
Aqueous	GHP	WAT097964	WAT097965		WAT200514	WAT200515	WAT200829
	NYLON	WAT200522	WAT200523	WAT200833	WAT200518	WAT200519	WAT200831
	LC (PVDF)	WAT200808	WAT200809	WAT200839	WAT200510	WAT200511	WAT200826
Aqueous - precipitate laden samples	GHP GF*				WAT200802	WAT200803	WAT058853
	NYLON GF*				WAT200800	WAT200801	WAT200846
	GF**				WAT200818	WAT200819	WAT200840
	Versapor						WAT200841
Non Polar	CR (PTFE)	WAT200504	WAT200505	WAT200822	WAT200500	WAT200501	WAT200820
	GHP	WAT097964	WAT097965		WAT200514	WAT200515	WAT200829
Protein	LC (PVDF)	WAT200808	WAT200809	WAT200839	WAT200510	WAT200511	WAT200826
Ion Chromatography	IC	WAT200814	WAT200815	WAT200845	WAT200816	WAT200817	WAT200843

Note:

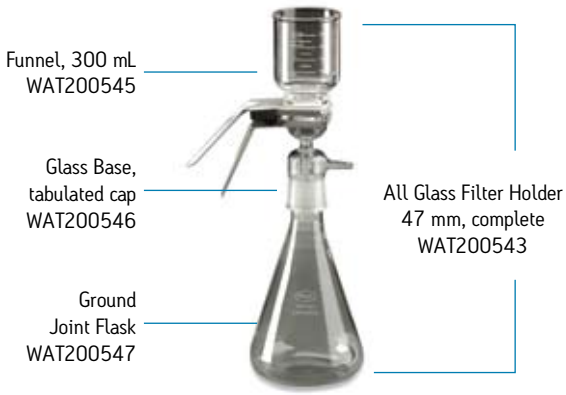
CR (PTFE)	PTFE
GF**	glass fiber filter only 1µm
GHP	hydrophilic propylene
GHP GF*	hydrophilic propylene / glass fiber prefilter
IC	polyethersulfone - certified for low ionic backgrounds
LC (PVDF)	hydrophilic polyvinylidine fluoride
NYLON	hydrophilic nylon
NYLON GF*	hydrophilic nylon / glass fiber prefilter
Versapor	acrylic copolymer on a non-woven support

Solvent Filtration Membranes

Description	Qty.	Diameter	Pore Size	Part No.
PVDF Filter	100/pkg	47 mm	0.45 µm	WAT200530
Nylon Filter	100/pkg	47 mm	0.45 µm	WAT200532
PTFE Filter	100/pkg	47 mm	0.45 µm	WAT200534
	100/pkg	13 mm	0.45 µm	WAT200536
GH PolyPro® Filter	100/pkg	47 mm	0.45 µm	WAT200537
Supor (PES) Filter	100/pkg	47 mm	0.45 µm	WAT200538
	100/pkg	13 mm	0.45 µm	WAT200540
PVDF Filter	100/pkg	47 mm	0.2 µm	WAT200531
Nylon Filter	100/pkg	47 mm	0.2 µm	WAT200533
PTFE Filter	100/pkg	47 mm	0.2 µm	WAT200535
GHP	100/pkg	47 mm	0.2 mm	186003524
Supor (PES) Filter	100/pkg	47 mm	0.2 µm	WAT200539
Thick Glass Filter	100/pkg	10 mm	1.0 µm	WAT200541
A/E Glass Filter	100/pkg	10 mm	1.0 µm	WAT200542

Solvent Filtration Apparatus

The 300 mL capacity 47 mm Glass Filter Funnel and 1 Litre capacity 47 mm Glass Funnel/Support Assembly are ideal for vacuum filtration of liquids and degassing of HPLC solvent and mobile phases. The 100% borosilicate glass construction assures resistance to even the most aggressive solvents.



Description	Part No.
Solvent Filtration Apparatus 110 V, 60 Hz	WAT085113
Solvent Filtration Apparatus 220 V, 50 Hz	WAT085102
All Glass Filter Holder 47 mm, complete	WAT200543
Forceps, SS	WAT200544
Funnel, 300 mL	WAT200545
Glass Base, tabulated cap	WAT200546
Ground Joint Flask	WAT200547
Swinney Holder	WAT200566
Vacuum Pump 110 V, 60 Hz	WAT085114
Vacuum Pump 110 V, 50 Hz	WAT085123
Vacuum Pump 220 V, 50 Hz	WAT085115

Austria and European Export (Central South Eastern Europe, CIS and Middle East) 43 1 877 18 07, **Australia** 61 2 9933 1777, **Belgium** 32 2 726 1000, **Brazil** 55 11 4134 3788, **Canada** 1 800 252 4752 x2205, **China** 86 21 6879 5888, **CIS/Russia** +497 727 4490/290 9737, **Czech Republic** 420 2 617 1 1384, **Denmark** 45 46 59 8080, **Finland** 358 9 5659 6288, **France** 33 1 30 48 72 00, **Germany** 49 6196 400600, **Hong Kong** 852 2964 1800, **Hungary** 36 1 350 5086, **India and India Subcontinent** 91 80 2837 1900, **Ireland** 353 1 448 1500, **Italy** 39 02 265 0983, **Japan** 81 3 3471 7191, **Korea** 82 2 6300 4800, **Mexico** 52 55 5524 7636, **The Netherlands** 31 76 508 7200, **Norway** 47 6 384 60 50, **Poland** 48 22 6393000, **Puerto Rico** 1 787 747 8445, **Singapore** 65 6593 7100, **Spain** 34 936 009 300, **Sweden** 46 8 555 11 500, **Switzerland** 41 56 676 70 00, **Taiwan** 886 2 2543 1898, **United Kingdom** 44 208 238 6100, **All other countrie s: Waters Corporation U.S.A.** 1 508 478 2000/1 800 252 4752

Waters

THE SCIENCE OF WHAT'S POSSIBLE.™

May 2010 Printed in the U.S.A. 720003538EN VW-PDF

Waters Corporation
34 Maple Street
Milford, MA 01757 U.S.A.
T: 1 508 478 2000
F: 1 508 872 1990
www.waters.com