Acrodisc™ PSF syringe filters

For HPLC, chemical and aqueous filtration

Instructions for Use

DOMINIQUE DUTSCHER SAS

Introduction

Important

Read these instructions carefully before using the products.

Intended use

The products are intended for research use only, and shall not be used in any clinical or *in vitro* procedures for diagnostic purposes.

Background

Description

Acrodisc™ PSF syringe filters are single-use syringe filters intended for automated sample processing and sample clarification. The products are available with single-layer membranes or with multi-layered glass fiber prefilters. The features of this product are as follows:

- High retention capacity.
- Increased column life due to HPLC column protection and good retention efficiency.
- G×F multi-layered prefilter provides high throughput, with improved filtration of difficult-to-filter samples.

Filter media

Acrodisc PSF syringe filters are available with the following filter media choices:

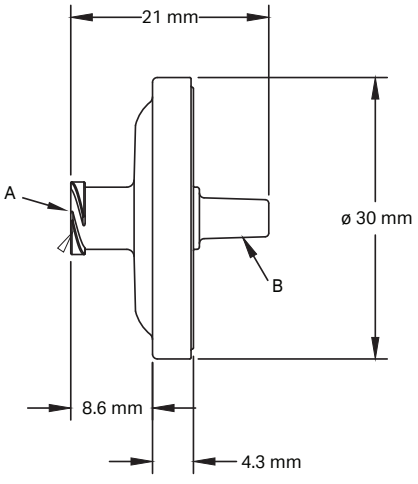
Filter media	Description
NYLON	Hydrophilic nylon
wwPTFE	Hydrophilic polytetrafluoroethylene
PTFE	Hydrophobic polytetrafluoroethylene
PVDF	Hydrophilic polyvinylidene fluoride
GxF Prefilter	Borosilicate glass
IC (PES) Supor™	Hydrophilic polyethersulfone
Supor	Hydrophilic polyethersulfone
Versapor™	Acrylic copolymer on a non-woven support
RC	Hydrophilic regenerated cellulose

Technical information

Technical data

Housing and support:	Polypropylene	
Pore size:	Nylon, PTFE, PVDF, Supor, wwPTFE, IC (PES)	0.2 µm or 0.45 µm
	RC	0.45 µm
	Versapor	0.8 µm or 10 µm
	GxF/glass	1 µm
	GxF Prefilter	40 to 1 µm
Effective filtration area:	3.9 cm^2	
Sample volume:	< 150 mL	
Inlet/outlet connections:	Female threaded Luer inlet, male slip Luer outlet, see the illustration below.	
Maximum operating temperature:	55°C (131°F)	

The illustration below shows the dimensions of Acrodisc PSF syringe filters.



Part	Description
A	Inlet
B	Outlet

Membrane specification

For information about membrane specifications, refer to *Acrodisc PSF syringe filters, CY40643* on cytiva.com.

Operating instructions

Safety

When considering the specific factors of your application, see *Technical data* for correct use. Do not exceed the pressure, temperature, or chemical compatibility recommendations.

High pressures can be obtained when using syringes. The smaller the syringe, the higher the pressure that can be generated. As general guideline, the following pressures can be obtained by hand with the syringes indicated:

Syringe size	20 mL	10 mL	5 mL	3 mL	1 mL
Pressure obtained by hand	0.6 MPa (5.5 bar, 80 psi)	1.0 MPa (9.7 bar, 140 psi)	1.2 MPa (12.4 bar, 180 psi)	1.4 MPa (14 bar, 200 psi)	1.7 MPa (17 bar, 250 psi)

Determine the pressure generated by hand with a specific size syringe and take appropriate safety precautions not to exceed the recommended rating for the device used.

CAUTION
If the Maximum operating pressure is exceeded, bursting of the device can occur resulting in loss of sample or personal injury.

Efficiency

To maximize filtration throughput, use the largest pore size filter that will provide the required purity. To extend filter life, use low flow rates or pressures.

Air locks

Air locks can seriously limit flow rates. To eliminate air locks, point the outlet of the filter device upward during the initiation of liquid flow.

Filter the solution

Note: *Using syringes smaller than 10 mL can generate excessive pressure on the filter, which can exceed the maximum operating pressure.*

Before filling the syringe with sample, draw approximately 1 mL of air into the syringe. This allows the air to follow the sample out of the syringe. This "air purge" minimizes fluid retention within the filter.

Follow the steps below to filter a solution with the syringe filter.

Step	Action
1	Fill the syringe with the solution to be filtered.
2	Holding the syringe filter in one hand and the filled syringe in the other, carefully secure the filled syringe to the inlet of the syringe filter with a twisting motion.
3	Apply gentle pressure to begin filtration and orient the outlet of the syringe filter over a suitable container or other apparatus to collect the filtrate. ***Note:*** *A gentle pressure helps assure maximum throughput.*
4	As the filter removes particulates, filtration can become more difficult (the syringe plunger gets harder to press) and pressure will rapidly increase on the filter. Change syringe filters when resistance becomes excessive. ***Note:*** *Failure to change filter can result in rupture of the housing, which in turn might result in particulates contaminating the filtrate.*

Automation system settings

When automation is first used, it is recommended that the flow rate for filtration is manually determined and programmed into the system.

Bubble point test

Follow these steps to perform a bubble point test if required for your application.

Step	Action
1	Flush the filter device with 1.0 mL or more of the test fluid.
2	After the filter is completely wet, with the outlet pointed upward, apply air under controlled pressure to the inlet until air breaks through the filter and bubbles can be seen at the outlet.
3	The pressure at which air passes through the wetted filter is the bubble point.

See the table below for typical bubble point values.

Bubble point data

All tests have been performed in water, unless IPA is stated in the Comment.

Membrane description	Bubble point (psi)	Comment
GxF/Glass 1µ	no	
GxF/Nylon 0.2µ	≥ 40	
GxF/Nylon 0.45µ	≥ 30	
GxF/PTFE 0.2µ	≥ 15	IPA
GxF/PTFE 0.45µ	≥ 6	IPA
GxF/PVDF 0.2µ	≥ 47	
GxF/PVDF 0.45µ	≥ 9	IPA
GxF/Supor 0.2µ	≥ 46	
GxF/Supor 0.45µ	≥ 25	
GxF/wwPTFE 0.2µ	≥ 12	IPA
GxF/wwPTFE 0.45µ	≥ 7	IPA
IC (PES) 0.2µ	≥ 46	
IC (PES) 0.45µ	≥ 25	
Nylon 0.2µ	≥ 40	
Nylon 0.45µ	≥ 30	
PTFE 0.2µ	≥ 15	IPA
PTFE 0.45µ	≥ 6	IPA
PVDF 0.2µ	≥ 47	
PVDF 0.45µ	≥ 9	IPA
Versapor 0.8µ	≥ 8	
Versapor 10µ	no	

DOMINIQUE DUTSCHER SAS

Membrane description	Bubble point (psi)	Comment
wwPTFE 0.2µ	≥ 12	IPA
wwPTFE 0.45µ	≥ 7	IPA
RC	≥ 36	
RCGF	≥ 36	
GF55	no	
GF92	no	

Chemical compatibility of membrane

Solvent	wwPTFE	PTFE	Glass	Versapor	Nylon	IC, Supor (PES)	PVDF	RC
Acetone	R	R	R	NR	R	NR	NR	R
Acetonitrile	R	R	R	NR	R	R	R	R
Acetic acid, glacial	R	R	R	NR	NR	R	R	NR
n-Butanol	R	R	R	R	R	R	R	R
Chloroform	R	R	R	NR	R	NR	NR	R
Dimethyl formamide	R	R	R	NR	R	NR	NR	LR
Dimethyl sulfoxide	R	R	R	NR	R	NR	R	*
Ethanol	R	R	R	R	R	R	R	R
Acetyl ethyl	R	R	R	R	R	NR	R	R
Ethel ether	R	R	R	-	NR	R	R	R
Hydrochloric acid (1N)	R	R	R	R	R	LR	R	NR
Hexane, dry	R	R	R	R	R	R	R	R
Methanol	R	R	R	NR	R	NR	R	R
Methylene chloride	R	R	R	NR	R	NR	NR	R
Methyl ethyl ketone	R	R	R	-	NR	NR	R	R
N-Methyl pyrrolidone	R	R	R	R	R	R	R	R
Isopropanol	R	R	R	R	R	R	NR	R
Sodium hydrochloride (3N)	R	R	R	NR	R	NR	NR	NR
Tetrahydrofluran	R	R	R	-	R	-	R	R
Tetrahydrofluran/water (50/50)	R	R	R	R	R	R	R	R
Toluene	R	R	R	R	R	R	R	R
Water	R	R	R	-	-	-	-	R

Legend: R = Resistant; LR = Limited Resistant; NR = Non Resistant; - = Insufficient data

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

Ordering information

For ordering information, visit *cytiva.com*.

DOMINIQUE DUTSCHER SAS

DOMINIQUE DUTSCHER SAS

Give feedback on this document

Visit cytiva.com/techdocfeedback or scan the QR code.

cytiva.com

Cytiva and the Drop logo are trademarks of Life Sciences IP Holdings Corporation or an affiliate doing business as Cytiva.

Acrodisc, Supor, and Versapor are trademarks of Global Life Sciences Solutions USA LLC or an affiliate doing business as Cytiva.

Any other third-party trademarks are the property of their respective owners.

© 2024 - 2025 Cytiva

For local office contact information, visit cytiva.com/contact

29747334 AC V:8 03/2025