SARTORIUS

Product Datasheet

Polyethersulfone Ultrafiltration Cassettes

Protein Purification, Concentration and Diafiltration



DOMINIQUE DUTSCHER SAS

Description

The Polyethersulfone Membrane

The polyethersulfone membrane (PES) is a membrane polymer that is well established in the biotechnological and pharmaceutical industries. The PES membrane is a stable polymer that features a broad pH and temperature range. Membrane regeneration, storage and depyrogenation can be accomplished by using NaOH even at elevated temperatures. Because of these features, the PES membrane is ideally suited for biotechnological applications. Polyethersulfone membranes are designed for use in the biotechnological and pharmaceutical industries.

They can be used for the following applications:

- IgG
- Blood factors
- Enzymes
- Peptides

Product Information

The polyethersulfone membrane has minimal adsorption of proteins, viruses, etc. Membrane retention is unaffected by repeated re-use.

Feature	Benefits
Low adsorption	Minimal loss of proteins
Low protein-binding	High product yield
Wide pH and a wide variety of temperature range	Chemicals can be used for the removal of foulants
High flow rates	Economical filtration runs
Self sealing cassette	No gaskets needed
Silicone sealing compound	No glue
Enlarged inlet and outlet hole	Lower pressure drop

Technical Data

Specifications

Materials of Construction	
Membrane	Polyethersulfone
Screen	PVDF | PP
Sealing compound	Silicone white

Pore Size | Retention Rate

PES ultrafiltration cassettes are available in a choice of the following nominal molecular weight cut offs: 1 kDaa, 5 kDaa, 8 kDa, 10 kDa, 30 kDa, 50 kDa, 100 kDa, 300 kDa

Available Sizes

Sartorius crossflow cassettes are available in **Standard cassette** size for pilot- | production scale and in **Sartocon® Slice** format for reduced volume handling.

Available Filter Holder

Sartorius crossflow cassettes are designed for Sartorius filter holders like Sartocon® Slice (0.1 m² cassettes only), Sartocon®, Sartocon® 2 Plus and different Sartoflow® holder.

Filtration Area

Filter area Sartocon® Cassette	0.7 m²
Filter area Sartocon® Slice Cassette	0.1 m²

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Operating Parameters

Feed pressure, P_{in}	58 psi | 4 bar maximum
Operating temperature	50°C maximum
Air diffusion rates at P_{in} = 15 psi |1 bar	1 k–300 kDa: 50 ml air/min for 0.7 m² filter area| 15 ml air/min for 0.1 m² filter area
Cleaning	NaOH, 1 M; 40°C
Disinfection	NaOH, 1 M, max. 50°C, 30 min
Storage	NaOH, 0.1 M

Thermal Sterilization

30 kDa, 100 kDa and 300 kDa in Silicone White and Silicone Grey at 121°C, 30 min, steaming, 121°C, 40 min, autoclaving

Regulatory Compliance

All materials have passed the USP Biological Reactivity Test. The filtrate meets or exceeds the currently valid USP and EP for sterile Water for Injection, with respect to particulate matter, extractable substances, oxidizable substances, pH dependent maximum conductivity, Ammonia, Chloride, Sulfate, Calcium and Bacteria Endotoxins.

Quality Control

Each filter cassette is individually assigned a serial number, integrity tested and certified.

It complies withrequirements for non-fiber-releasing filters.

If you use holding devices from other suppliers, please contact our Applications Department. A different torque might be needed due to specific variations in design.

For further assistance, please contact your local Sartorius Stedim Biotech field engineer or our Goettingen- based Applications Department in Germany.

Technical References:

Validation Guide
DIR: 3013841 and DIR: 3013845

Directions for Use (Sartocon® Cassettes and Sartocon® Slice Cassettes) DIR: 297293 and DIR:2644899

Retention Rates Polyethersulfone

Substance	Approx. Mol Wt.	1 kDa [%]	5 kDa [%]	8 kDa [%]	10 kDa [%]	PES_{max} kDa [%]	30 kDa [%]	50 kDa [%]	100 kDa [%]	300 kDa [%]
Vitamin B12	1,200	>70	50 –80	–	–	–	–	–	–	–
Cytocrome C	12,400	–	–	99	>95	–	60 –90	–	–	–
Albumin	67,000	–	–	–	–	>99.9	–	>95	<80	–
γ-Globulin	169,000	–	–	–	–	–	–	>99	≥98	<70
Dextran	2,000,000	–	–	–	–	–	–	–	–	>95

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Average Dynamic Water Flux

Permeate flow rate P_{in} = 2 bar, P_{ret} = 0.5 bar, $P_{filtrate}$ = open

Cut off | Pore size	Polyethersulfone l/h/m²
1 kDa	13
5 kDa	42
8 kDa	220
10 kDa	300
30 kDa	610
50 kDa	720
100 kDa	800
300 kDa	1260

Order Information

Available types and order numbers

Cut Off | Pore Size	Sartocon® Cassettes 0.7 m² Filter Area	Sartocon® Slice Cassettes 0.1 m² Filter Area
1 kDa	3021460907E--SW*	3051460901E--SW*
5 kDa	3021462907E--SW*	3051462901E--SW*
8 kDa	3021463407E--SW*	3051463401E--SW*
10 kDa	3021463907E--SW*	3051463901E--SW*
30 kDa	3021465907E--SW*	3051465901E--SW*
50 kDa	3021465007E--SW*	3051465001E--SW*
100 kDa	3021466807E--SW*	3051466801E--SW*
300 kDa	3021467907E--SW*	3051467901E--SW*

* For grey silicone cassettes material number ends with "...--SG"

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DIR No.: 2693719-000-01 | Last modified: 01|2026