SARTORIUS

Product Datasheet

Sartocon® ECO

Polyethersulfone Ultrafiltration Cassettes

Description

The Polyethersulfone Membrane
The polyethersulfone membrane (PESU) is a membrane polymer that is well established in the biotechnological and pharmaceutical industries. The PESU 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 PESU membrane is ideally suited for biotechnological applications. Polyethersulfone membranes are designed for use in the biotechnological and pharmaceutical industries.

Applications:

- IgG
- Blood factors
- Enzymes
- Peptides

Product Profile

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

Feature	Benefits
Low feed flow requirements (low cross flow)	Low pump energy consumption
Compatible with competitive pump capacity	Excellent performance in all crossflow systems
Thin channel design	High mass transfer at low feed flow rates
Low adsorption	Minimal loss of protein
Wide pH and temperature stability	Chemicals can be used for foulants removal
Self sealing cassette	No need for gaskets
No use of glues	Low extractables
Enlarged feed and retentate ports	Lower system pressure drops
Silicone sealing compound	Low extractables
Enlarged feed and retentate ports	Lower system pressure drops

Technical Data

Specifications

Materials of construction	
Membrane	Polyethersulfone
Gaskets	Polypropylene
Spacer	Polypropylene
Sealing compound	Silicone white

Pore Size | Retention Rate

PESU ultrafiltration cassettes are available in a choice of the following nominal molecular weight cut offs:
10 kD, 30 kD, 100 kD, 300 kD

Available Sizes

Sartorius crossflow cassettes are available in standard cassette size for pilot-|production scale and in Sartocon® Slice as well as Sartocon® Slice 200 format for reduced volume handling.

Available Filter Holder

Sartorius crossflow cassettes are designed to fit standard Sartorius filter holders like Sartocon® Slice, Sartocon® 2 Plus, and Sartoflow® 10 and 20 holders.

Filtration Area

Filtration area Sartocon® Slice 200	0.02 m^2
Filter area Sartocon® Slice Cassette	0.14 m^2
Filter area Sartocon® Cassette	0.7 m^2
Filter area Sartocube® Cassette	3.5 m^2

Operating Parameters

Feed pressure, P_{in}	58 psi | 4 bar maximum
Operating temperature	50°C maximum
Air diffusion rates at at P_{in} = 15 psi | 1 bar	≤ 50 ml air/min for 0.7 m^2 and 3,5 m^2 filter area|≤ 15 ml air/min for 0.14 m^2 filter area|≤ 1.5 ml air/min for 0.02 m^2 filter area
Cleaning	NaOH, 1 M, 40°C
Disinfection	NaOH, 1 M, max. 50°C, 30 min
Storage	NaOH, 0.1 M

Thermal Sterilization

t.b.d.

Regulatory Compliance

All materials have passed the USP Biological 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 with cGMP requirements for non-fiber-releasing filters and is filed under the Drug Master File Number DMF 5967 by the Food and Drug Administration, Washington, DC. Validation information is available upon request.

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
Publication No.: SPC5709-e

Directions for Use (Sartocon® Cassettes and Sartocon® Slice Cassettes) Publication No.: SPC6055-a

Order Information

Available types and order numbers

Cut Off	Sartocube® Cassettes 3.5 m² Filter Area	Sartocon® Cassettes 0.7 m² Filter Area	Sartocon® Slice Cassettes 0.14 m² Filter Area	Sartocon® Slice 200 Cassettes 0.02 m² Filter Area
10 kD	3M21463935E-BSW	3M21463907E--SW	3M51463901E--SW	3M81463902E--SW
30 kD	3M21465935E-BSW	3M21465907E--SW	3M51465901E--SW	3M81465902E--SW
100 kD	3M21466835E-BSW	3M21466807E--SW	3M51466801E--SW	3M81466802E--SW
300 kD	3M21467935E-BSW	3M21467907E--SW	3M51467901E--SW	3M81467902E--SW

Retention Rates Polyethersulfone

Substance	Approx. Mol. Wt.	10 kD [%]	30 kD [%]	100 kD [%]	300 kD [%]
Vitamin B12	1,200	–	–	–	–
Cytocrome C	12,400	>95	60–90	–	–
Albumin	67,000	–	–	>95	–
γ-Globulin	169,000	–	–	>99	<70
Dextran	2,000,000	–	–	–	<95

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
10 kD	160
30 kD	350
100 kD	450
300 kD	600

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