sartorius stedim biotech

Hydrosart® Ultrafiltration Cassettes

Protein purification, concentration and diafiltration

Crossflow Filtration

Description

The Hydrosart® Membrane

Hydrosart is a stabilized cellulose based membrane that has been optimized for the biotechnological and pharmaceutical industry. The Hydrosart membrane is a stable polymer that features a broad pH range. Hydrosart is also extremely hydrophilic, making it non-protein binding, virtually non-foul, and has extremely high flux. Membrane regeneration, storage and depyrogenation can be accomplished by using NaOH even at elevated temperatures. These features make Hydrosart an ideal membrane for biological applications. Hydrosart ultrafiltration cassettes are available in the following nominal molecular weight cutoffs: 2 kD | 5 kD | 10 kD | 30 kD | 100 kD

Applications

Hydrosart ultrafiltration membranes are designed for use in the biotechnological and pharmaceutical industries. They can be used for the following applications:

- Oligonucleotide
- Proteins
  Albumin, even with 40% EtOH
  Hemoglobin
- Coagulation factors
  Factor VIII
  Factor III
- Vaccines
  Tetanus
  Diphteria
- Monoklonal Antibodies

Product profile

Hydrosart shows minimal adsorption of proteins, viruses, etc. Membrane retention is unaffected by repeated re-use.

The Hydrosart ultrafiltration membrane can be re-used without any less cleaning loss of integrity or performance.

Feature	Benefits
Non-adsorptive	No loss of proteins, easy to clean, sustained flux
Non-protein binding	High product yield
Wide pH and temperature range	More choices in sanitizing agents
High flow rates	Economical filtration runs
Self sealing cassette	No gaskets needed
Silicone sealing compound	No glue
Enlarged inlet and outlet holes	Lower pressure drop

Better solvent resistance than Polyethersulfone and Cellulose Triacetate

Specifications

Materials of construction

Membrane	Hydrosart (stabilized cellulose based membrane)
Gaskets	PVDF
Spacer	Polypropylene
Sealing compound	Silicone grey

Pore size | Retention rate

Hydrosart ultrafiltration cassettes are available in a choice of the following nominal molecular weight cut offs:
2 kD | 5 kD | 10 kD | 30 kD | 100 kD

Available sizes

Sartorius Stedim Biotech Crossflow Cassettes are available in **Standard Cassette** size for pilot- | production scale and in **Sartocon Slice** format for reduced volume handling.

Available filterholder

Sartorius Stedim Biotech Crossflow Cassettes are designed for Sartorius Stedim Biotech filter holders like Sartocon Slice (0.1 m^2 Cassettes only), Sartocon, Sartocon 2 Plus, and different Sartoflow holder.

Filtration area

Filter area Sartocon Cassette	0.6 m^2
Filter area Sartocon Slice Cassette	0.1 m^2

Operating Parameters

Feed pressure, P_{in}	58 psi | 4 bar maximum
Operating temperature	50°C maximum, at 20°C
Max. air diffusion rates at P_{in} = 15 psi | 1 bar	15 ml air/min for 0.6 m^2 filter area 5 ml air/min for 0.1 m^2 filter area
Cleaning	NaOH, 1 M, 40°C
Disinfection	NaOH, 1 M, 40°C, 30 min
Storage	NaOH, 0.1 M

Sterilization
2 kD | 5 kD | 30 kD | 100 kD, 121°C, 30 min., steaming; 121°C, 110 min, autoclaving

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 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.: SPC5701-e

Directions for Use (Sartocon Cassettes and Sartocon Slice Cassettes)
Publication No.: SPC6032

Average Dynamic Water Flux*

Nominal molecular weight cutoff (kD)	2 kD	5 kD	10 kD	30 kD	100 kD
Permeate Flow Hydrosart l/h/m^2	10	18	50	136	370

* (Feed pressure, P_{feed} = 29 psi | 2.0 bar; Retentate pressure, P_{ret} = 7.3 psi | 0.5 bar; P_{perm} = open valve)

Retention rates Hydrosart®

Substance	Approx. Mol. Wt.	2 kD	5 kD	10 kD	30 kD	100 kD
Vitamin B12	1,200	≥88%	–	–	–	
Inulin	5,000	–	≥96%	–	–	
Cytochrome C	12,400	–	–	≥97.5%	–	
Albumin	67,000	–	–	–	≥97.5%	≤60%
γ Globulin	169,000	–	–	–		≥96%

Order information
Available types and order numbers

Type	Filter area	Cut off	Order no.
Sartocon Cassettes	0.6 m^2	2 kD	302 144 19 06 E--SG
Sartocon Cassettes	0.6 m^2	5 kD	302 144 29 06 E--SG
Sartocon Cassettes	0.6 m^2	10 kD	302 144 39 06 E--SG
Sartocon Cassettes	0.6 m^2	30 kD	302 144 59 06 E--SG
Sartocon Cassettes	0.6 m^2	100 kD	302 144 68 06 E--SG
Sartocon Slice Cassettes	0.1 m^2	2 kD	305 144 19 01 E--SG
Sartocon Slice Cassettes	0.1 m^2	5 kD	305 144 29 01 E--SG
Sartocon Slice Cassettes	0.1 m^2	10 kD	305 144 39 01 E--SG
Sartocon Slice Cassettes	0.1 m^2	30 kD	305 144 59 01 E--SG
Sartocon Slice Cassettes	0.1 m^2	100 kD	305 144 68 01 E--SG

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Publication No.: SPC2027-e11011
Order No.: 85030-509-91
Ver. 01 | 2011