

# Hydrosart® Ultrafiltration Cassettes

Protein purification, concentration and diafiltration



## 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
  - Diphtheria
- 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

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

### Available filterholder

Sartorius Crossflow Cassettes are designed for Sartorius filter holders like SartoconSlice (0.1 m<sup>2</sup> Cassettes only), Sartocon, Sartocon 2 Plus, Sartocon 3, and different Sartoflow holder.

### Filtration area

Filter area Sartocon Cassette	0.6 m <sup>2</sup>
Filter area Sartocon Slice Cassette	0.1 m <sup>2</sup>

### Operating parameters

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

# Sartorius Crossflow Filter

## Sterilization

NaOH, 1 M, 40 °C, 30 min

## Regulatory compliance

All materials have passed the current USP Biological Test. The filtrate meets or exceeds USP and EP requirements for Sterile Water for Injection with respect to total solids, oxidizable substances, particulate matter, ammonia, chloride, nitrate, sulfate and heavy metals.

## 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 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.: SPC6001-a

## Typical water flux release data\*

Nominal molecular weight cutoff (kD)	Sartocon Cassettes 0.6 m <sup>2</sup> filter area Permeate* [l/h]	Sartocon Slice Cassettes 0.1 m <sup>2</sup> filter area Permeate* [l/h]
2 kD	7	1.5
5 kD	12	3
10 kD	35	8
30 kD	120	25
100 kD	340	70

\* (Feed pressure, P<sub>in</sub> = 22 psi | 1.5 bar; Retentate pressure, P<sub>out</sub> = closed valve; P<sub>Filtrate</sub> = 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	-	>97%	-	-	-
Cytochrome C	12.400	-	-	>97,5%	-	-
Albumin	67.000	-	-	-	>97,5%	≤60%
γ Globulin	169.000	-	-	-	>97,5%	≥96%

## Order information

Available types and order numbers

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

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