



# Sartocube® – Hydrosart® Ultrafilter Cassette

Protein purification,  
concentration and diafiltration

## Product Information

Hydrosart® is characterized by ultra-low protein adsorption, easy cleaning, higher yields, and long product life. Even with repeated use, Hydrosart® ultrafiltration membrane maintains its performance without fouling or loss of retention.



### Description

Hydrosart® high performance membrane is a stabilized cellulose based membrane that has been optimized for biopharmaceutical process applications. Hydrosart® is stable across a broad pH range, is extremely hydrophilic, making it non-protein binding, and virtually non-fouling. 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. Sartocube® cassettes with Hydrosart ultrafiltration membrane are available in the following nominal molecular weight cutoffs: 2 kD | 5 kD | 10 kD | 30 kD | 100 kD | 300 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
- Monoclonal Antibodies

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	Low Extractables
Enlarged inlet and outlet holes	Lower system pressure drops

Better solvent resistance than Polyethersulfone and Cellulose Triacetate

## Technical Data

### Specifications

Materials of construction	
Membrane	Hydrosart® (stabilized cellulose based membrane)
Gaskets	PVDF
Spacer	Polypropylene
Sealing compound	Silicone white

### 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 | 300 kD

### Available sizes

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

### Available filter holder

Sartocube® Cassettes are designed for Sartorius Stedim Biotech filter holders like, Sartocube® 2 Plus and different SARTOFLOW® holder.

### Filtration area

Filter area Sartocube® Cassette is 3.0 m<sup>2</sup>

Operating parameters	
Feed pressure, P <sub>in</sub>	58 psi   4 bar maximum
Operating temperature	50°C maximum
Max. air diffusion rates at P <sub>in</sub> = 15 psi   1 bar	50 mL air/min for 3.0 m <sup>2</sup> filter area
Cleaning	NaOH, 1 M, 50°C
Disinfection	NaOH, 1 M, 40°C, 30 min
Storage	NaOH, 0.1 M

### Sanitization

NaOH, 1 M, 40°C, 30 min

### 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.: SPC5704-e

Directions for Use  
(Sartocube® ECO Cassettes and Sartocube® Slice ECO Cassettes)  
Publication No.: 1000035949

### Average Dynamic Water Flux

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

Cut Off	Hydrosart® 3.0 m <sup>2</sup> L/h
2 kD	27
5 kD	70
10 kD	170
30 kD	500
100 kD	1,200
300 kD	1,920

### Retention rates Hydrosart®

Substance	Approx. Mol. Wt.	2 kD	5 kD	10 kD	30 kD	100 kD	300 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%	-
Blue Dextran	500,000	-	-	-	-	-	< 90%

## Ordering Information

Available types and order numbers

Cut Off	Sartocube® Cassettes 3.0 m <sup>2</sup> Filter Area
2 kD	302 144 19 30 E-BSW
5 kD	302 144 29 30 E-BSW
10 kD	302 144 39 30 E-BSW
30 kD	302 144 59 30 E-BSW
100 kD	302 144 68 30 E-BSW
300 kD	302 144 79 30 E-BSW

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