SARTORIUS

Product Datasheet

Sartocon® Slice 200

Low hold-up volume tangential flow filtration cassette



Product Information

Sartocon® Slice 200 tangential flow filtration (TFF) cassettes are designed for low volume applications.

Target use:
- product discovery
- preclinical trials
- small scale clinical trials

The cassettes are available with polyethersulfone (PES) and Hydrosart® membranes for microfiltration (MF) and ultrafiltration (UF).

Features and Benefits

- **Linear scalability** – Flow geometry and hydraulic dimensions are identical to those found in larger scale-up devices
- **Low hold-up volume** – Working volume requirements can be minimized
- **Low protein-binding** – Easy cleanability and a high product yield

Introduction

Polyethersulfone membrane
Polyethersulfone (PES) membrane is an established mem-brane polymer that is well suited to any bio-pharmaceutical process applications. PES membrane is a stable polymer that can operate in a broad pH and temperature range and withstand aggressive cleaning cycles.

Description

Hydrosart® membrane
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, and depyrogenation is accomplished by using (1N) NaOH at elevated temperatures. These features make Hydrosart® an ideal membrane for biological applications.

Technical Specifications

Materials	Construction
Membrane	Hydrosart® | Polyethersulfone
Filtration area	200 cm²
Screen	PVDF | PP
Sealing compound	Silicone white | Silicone grey

Pore size | retention rate
PES ultrafiltration cassettes are available in the following

nominal molecular weight cut offs: 1 kDa, 5 kDa, 8 kDa, 10 kDa, 30 kDa, 50 kDa, 100 kDa, 300 kDa.

PES Microfilter cassettes are available in 0.1 µm pore sizes. Hydrosart® ultrafiltration cassettes are available in the following nominal molecular weight cut offs: 2 kDa, 5 kDa, 10 kDa, 30 kDa, 100 kDa, 300 kDa.

Hydrosart® microfiltration cassettes are available in 0.2 µm and 0.45 µm pore sizes.

Cassette filter holder
Sartocon® Slice 200 Cassettes are designed to fit into the standard Sartocon® Slice 200 stainless steel holder. Sartocon® Slice 200 Cassettes can also be used in a regular Sartocon® Slice filterholder [order number: 17525–01].

Operating parameters	
Feed pressure, P_{in}	4 bar | 57 psi max.
Operating temperature	50 °C maximum
Air diffusion rates at P_{in} = 15 psi | 1 bar	▪ Diffusion results for ultrafilter (PES and Hydrosart®) < 1 mL/min [ex. 50 kDa < 1.5 mL/min] ▪ Diffusion results for microfilter (PES and Hydrosart®) < 1.5 mL/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 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 requirements 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 application specialist or our Göttingen-based applications department in Germany.

Technical references
Validation Guide

DIR: 3013841 and DIR: 3013845

Directions for use
(Sartocon® Slice 200)

DIR: 297293 and DIR:2644899

Retention coefficient (microfilter)	
Marker	Retention
Bacteria	> 99%
Mammilian cells	> 99%
Mycoplasma	LRV = 7 (PES 0.1 µm)

Average dynamic water flux
Permeate flow rate P_{feed} = 2 bar, P_{ret} = 0.5 bar $P_{permeate}$ = open

Cut-off | pore size	Hydrosart® 200 cm² filter area L/h/m²	Polyethersulfone 200 cm² filter area L/h/m²
1 kDa		13
2 kDa	10	
5 kDa	25	42
8 kDa		220
10 kDa	60	300
30 kDa	170	310
50 kDa		720
100 kDa	550	800
300 kDa	620	1,260
0.1 µm		1,450
0.2 µm	1,500	
0.45 µm	1,800	

Hydrosart® (ultrafilter) [NMWCO]

Substance	Approx. mol. wt.	2 kDa [%]	5 kDa [%]	10 kDa [%]	30 kDa [%]	100 kDa [%]	300 kDa [%]
Vitamin B12	1,200	≥ 88%	–	–	–	–	–
Inulin	5,000	–	≥ 96%	–	–	–	–
Cytocrome C	12,400	–	–	≥ 97,5%	–	–	–
Albumin	67,000	–	–	–	≥ 97,5%	≥ 60%	–
γ-Globulin	169,000	–	–	–	–	≥ 96%	–
Blue dextran	500,00	–	–	–	–	–	< 90%

Protein markers (PES ultrafilter) [NMWCO]

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	< 45	–	–	–	–	–	–
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

Ordering Information

Available Sartocon® Slice 200 types and order numbers

Cut-off | pore size	Hydrosart® 200 cm^2 filter area	Polyethersulfone 200 cm^2 filtration area
1 kDa		3081460902E-SW*
2 kDa	3081441902E-SW*	
5 kDa	3081442902E-SW*	3081462902E-SW*
8 kDa		3081463402E-SW*
10 kDa	3081443902E-SW*	3081463902E-SW*
30 kDa	3081445902E-SW*	3081465902E-SW*
50 kDa		3081465002E-SW*
100 kDa	3081446902E-SW*	3081466802E-SW*
300 kDa	3081447902E-SW	3081467902E-SW*
0.1 µm		3081545802W-SW*
0.2 µm	3081860702W-SW*	
0.45 µm	3081860602W-SW*	

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

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