



Sartobind® SingleSep Disposable Capsules

A Separation Technology Based on Microporous Membranes
Operating Instructions

Storage conditions

Sartobind disposable capsules should be stored clean and dry at room temperature, not in direct sunlight. We recommend to use this product within one year from the date of purchase.

Introduction

Sartobind SingleSep capsules represent a new generation of ion exchange chromatography devices based on microporous membranes. They can simply be used in the downstream processing of proteins for single-use chromatography. The ion exchange ligands are coupled to a membrane which is fitted into a conventional housing for easy and quick handling, making ion exchange purification nearly as easy as filtration.

Three sizes of capsules with a strong acidic and a strong basic ion exchange Membrane Adsorber (MA) are available. These products are intended for single use to avoid tedious and costly cleaning and validation procedures. For upscaling to production and downstream processing, Sartorius offers Sartobind MultiSep process scale modules (see chapter Related Products).

Technical Data

Maximum pressure	4 bar, 0.4 MPa, 58 psi
Short term pH stability	2 - 13
Number of layers bed height	15 4 mm
Membrane volume area mini capsule	7 ml 250 cm ²
Membrane volume area 5" capsule	70 ml 2500 cm ²
Membrane volume area 10" capsule	180 ml 6600 cm ²
Minimum static binding capacity per cm ² of membranes	0.8 mg bovine serum albumin on Q membrane, 0.8 mg lysozyme on S membrane

Ordering Information SingleSep Capsules

Order number	Description and type of connectors top and bottom	Quantity
Mini capsules		
92IEXQ42D4-SS--A	Sartobind Q SingleSep mini capsule, sanitary clamp	4
92IEXQ42D4-00--A	Sartobind Q SingleSep mini capsule, hose barb	4
92IEXS42D4-SS--A	Sartobind S SingleSep mini capsule, sanitary clamp	4
92IEXS42D4-00--A	Sartobind S SingleSep mini capsule, hose barb	4
5" capsules		
92IEXQ42D9-SS--A	Sartobind Q SingleSep 5" capsule, sanitary clamp	4
92IEXQ42D9-00--A	Sartobind Q SingleSep 5" capsule, hose barb	4
92IEXS42D9-SS--A	Sartobind S SingleSep 5" capsule, sanitary clamp	4
92IEXS42D9-00--A	Sartobind S SingleSep 5" capsule, hose barb	4
10" capsules		
92IEXQ42D1-SS	Sartobind Q SingleSep 10" capsule, sanitary clamp	1
92IEXS42D1-SS	Sartobind S SingleSep 10" capsule, sanitary clamp	1

Materials

Housing	Polypropylene, FDA approved
Membrane matrix	Stabilized reinforced cellulose, nominal pore size > 3 µm
Membrane thickness average	275 µm/10.8 mils
Ion exchange ligand Sartobind Q	strong basic anion exchanger: quaternary ammonium (R-CH ₂ -N ⁺ (CH ₃) ₃)
Ion exchange ligand Sartobind S	strong acidic cation exchanger: sulfonic acid (R-CH ₂ -SO ₃ ⁻)

Minimum binding capacities BSA (bovine serum albumin or lysozyme) per unit

SingleSep mini	200 mg
SingleSep 5"	2000 mg
SingleSep 10"	5280 mg

Operation Instructions for Sartobind SingleSep Capsules

Important Notes: Capsules should be inspected for damage before use. In case of damage, the capsule has to be replaced. The maximum pressure is 4 bar | 0.4 MPa | 58 psi.

Installation

The Sartobind SingleSep capsules should be installed in the process flow as indicated by an arrow or IN and OUT sign on the capsule and an arrow of flow direction on the label on the 10" capsule.

Install the capsule in-line with the appropriate connectors (clamp | hose barb).

Prevent backpressure damage downstream of the capsule by installation of a tank located between capsule and next valve.



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Operation

Hold the unit in an upright position for proper venting. Take care for the appropriate venting of the unit by opening the venting screw on top of the unit until all air is replaced by equilibration buffer. The membrane contains glycerol which has to be removed before applying the feed solution. We recommend following volumes:

Capsule Size	Volume
Mini capsule, 7 ml	200 ml
Capsule 5", 70 ml	1500 ml
Capsule 10", 180 ml	5000 ml

Capsule	Recommended Flow Rates
92IEXQ42D4-SS--A, 92IEXQ42D4-00--A	0.2 l/min
92IEXQ42D9-SS--A, 92IEXQ42D9-00--A	1.0 l/min
92IEXQ42D1-SS 92IEXS42D1-SS	1.5 l/min

Prefilter the sample through a 0.45 µm membrane filter e.g. Sartobran P filter unit (5231307H9-SS-A).

Certification

We guarantee that Sartorius has manufactured certified Sartobind SingleSep capsules and Sartobind membranes in a controlled environment. They have met the specifications as given here or even exceeded them.

Cytotoxicity

The Sartobind SingleSep capsules have met the specifications for current United States Pharmacopoeia (USP) Plastic Class VI test.

Particulate Matter

The Sartobind SingleSep capsules fulfill requirements for effluent particles below levels set by current USP.

Quality Assurance Tests

The Sartobind SingleSep capsules are tested for total protein binding capacity and flow rate. The Sartobind membranes have been tested for protein binding capacity, thickness, evenness, smoothness and flow rate.

Release

The product has met all Sartorius standards for trace ability and production. The modules, capsules, discs, filters units and membranes are supplied as non-sterile. The capsules can be autoclaved one time at 121 °C for 30 minutes at 0.1 MPa. For more information about validation service and other Membrane Adsorber types contact your local Sartorius representative or visit our homepage: www.sartorius.com.

Related Products for Laboratory Research

Order numbers*	Sartobind MA 75
Q75X	Sartobind Q 75 strong anion exchanger, 15 layers, 4 mm bed height, 2.1 ml, 75 cm ² , 2 units per package
S75X	Sartobind S 75 strong cation exchanger, 15 layers, 4 mm bed height, 2.1 ml, 75 cm ² , 2 units per package
C75X	Sartobind C 75 weak cation exchanger, 15 layers, 4 mm bed height, 2.1 ml, 75 cm ² , 2 units per package
D75X	Sartobind D 75 weak anion exchanger, 15 layers, 4 mm bed height, 2.1 ml, 75 cm ² , 2 units per package

* Other MA sizes: 5 cm², 15 cm² and 100 cm² (1, 3 and 5 layers)

Related Products for Process Chromatography

Order numbers*	Sartobind MultiSep modules for process chromatography
91-X-01K-15-03	Sartobind MultiSep Q, S, C or D 15 layers, 3 cm, 35 ml
91-X-02K-15-06	Sartobind MultiSep Q, S, C or D 15 layers, 6 cm, 70 ml
91-X-05K-15-12	Sartobind MultiSep Q, S, C or D 15 layers, 12 cm, 140 ml
91-X-10K-15-25	Sartobind MultiSep Q, S, C or D 15 layers, 25 cm, 280 ml
91-X-20K-15-50	Sartobind MultiSep Q, S, C or D 15 layers, 50 cm, 560 ml
91-X-02K-30-03	Sartobind MultiSep Q, S, C or D 30 layers, 3 cm, 72 ml
91-X-05K-30-06	Sartobind MultiSep Q, S, C or D 30 layers, 6 cm, 144 ml
91-X-10K-30-12	Sartobind MultiSep Q, S, C or D 30 layers, 12 cm, 288 ml
91-X-20K-30-25	Sartobind MultiSep Q, S, C or D 30 layers, 25 cm, 575 ml
91-X-40K-30-50	Sartobind MultiSep Q, S, C or D 30 layers, 50 cm, 1150 ml
91-X-05K-60-03	Sartobind MultiSep Q, S, C or D 60 layers, 3 cm, 133 ml
91-X-10K-60-06	Sartobind MultiSep Q, S, C or D 60 layers, 6 cm, 266 ml
91-X-20K-60-12	Sartobind MultiSep Q, S, C or D 60 layers, 12 cm, 533 ml
91-X-40K-60-25	Sartobind MultiSep Q, S, C or D 60 layers, 25 cm, 1065 ml
91-X-80K-60-50	Sartobind MultiSep Q, S, C or D 60 layers, 50 cm, 2130 ml

*Replace X by Q, S, C or D ion exchange membrane

Q = Sartobind Q (quaternary ammonium, strong basic anion exchanger),
S = Sartobind S (sulfonic acid, strong acidic cation exchanger),
C = Sartobind C (carboxylic acid, weak acidic cation exchanger),
D = Sartobind D (diethylamine, weak basic anion exchanger).

Sartobind® is a trademark of Sartorius AG, Goettingen, Germany

Sartorius AG
Weender Landstrasse 94-108
37075 Goettingen, Germany
Phone +49.551.308.0
Fax +49.551.308.3289
www.sartorius.com

Use items only as described in this operation instructions and wear gloves, safety glasses and a lab coat. Technical data are subject to change without notice.
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