

# Sartoguard NF

## Membrane Prefilters with Nanofleece Technology



### Product Information

- Exceptional clarification capabilities
- Innovative nanofleece for increased performance of PES membranes
- Protection of downstream filters and bioburden reduction

Sartoguard NF filter elements feature a unique combination of Polyethersulfone (PES) membranes and PES nanofleece technology. The combination of the innovative nanofleece with the proven performance of PES membranes results in outstanding total throughput performance, high flow rates and exceptional clarification capabilities.

Sartoguard NF filters are the ideal choice for prefiltration applications where removal of particles and bioburden control is required for protection of sterilizing grade 0.2  $\mu\text{m}$  and 0.1  $\mu\text{m}$  rated membrane filters.

## Nanofleece Technology

The ultrafine structure of the nanofleece provides a unique retention system for fine particles in combination with exceptionally high flow rates. The nanofleece effectively protects the downstream PES membranes and leads to an outstanding total throughput performance of this filter type, resulting in a significant reduction in filtration costs.

## Reliable Retention

Sartoguard NF filters are available with 0.1 µm and 0.2 µm nominal retention rating. The 0.1 µm and 0.2 µm rated filters typically provide a titer reduction of >10<sup>6</sup> per cm<sup>2</sup> filtration area for *Brevundimonas diminuta* and *Serratia marcescens*, respectively.

## Chemical Compatibility

All active materials of the Sartoguard NF filters (membranes and nanofleece) are made of PES that is compatible with a broad range of chemicals from pH 1–14.

## Single-Use-Technology

Sartoguard NF filters are also available as Gamma Maxicaps<sup>®</sup>, T-Style Maxicaps<sup>®</sup> and Gamma Midicaps<sup>®</sup> for easy integration into single-use processing solutions. They are gamma irradiatable and can be directly connected to single-use bags to be delivered as pre-sterilized assemblies.

## Applications

- Pharmaceuticals
- Buffers
- Cell culture media
- Ophthalmics
- Large volume parenterals

## Technical Data

Available Sizes	Filtration Area
<b>Cartridges, Gamma Maxicaps<sup>®</sup>, T-Style Maxicaps<sup>®</sup></b>	
Size 1	0.65 m <sup>2</sup>   7.0 ft <sup>2</sup>
Size 2	1.3 m <sup>2</sup>   14.0 ft <sup>2</sup>
Size 3	1.95 m <sup>2</sup>   21.0 ft <sup>2</sup>
<b>Gamma Midicaps<sup>®</sup></b>	
Size 7	0.065 m <sup>2</sup>   0.7 ft <sup>2</sup>
Size 8	0.13 m <sup>2</sup>   1.4 ft <sup>2</sup>
Size 9	0.22 m <sup>2</sup>   2.35 ft <sup>2</sup>
Size 0	0.44 m <sup>2</sup>   4.7 ft <sup>2</sup>
<b>Capsules</b>	
Size 4	0.019 m <sup>2</sup>   0.20 ft <sup>2</sup>

## Max. Allowable Differential Pressure

### Cartridges

5 bar | 72.5 psi at 20 °C  
2 bar | 29 psi at 80 °C

### Gamma Midicaps® | Gamma Maxicaps® | T-Style Maxicaps®

5 bar | 72.5 psi at 20 °C  
3 bar | 43.5 psi at 50 °C

### Capsules Size 4

4 bar | 58 psi at 20 °C  
2 bar | 29 psi at 50 °C

## Max. Allowable Back Pressure

2 bar | 29 psi at 20 °C  
(for all elements)

## Max. Operating Pressure

Cartridges | T-Style Maxicaps® |  
Gamma Maxicaps | Gamma Midicaps®  
5 bar | 72.5 psi at 20 °C

### Capsules

4 bar | 58 psi at 20 °C

## Materials

### Prefilter Membrane

Polyethersulfone

### Endfilter Membrane

Polyethersulfone

### Filter active Fleece

Polyethersulfone Nanofleece

### Support Fleece

Polypropylene  
(in-line steam sterilizable & autoclavable)  
Polyester  
( $\gamma$ -irradiatable | autoclavable)

### Core

Polypropylene

### End Caps

Polypropylene

### Capsule Housing

Polypropylene

### O-Rings

Silicone  
(optional: EPDM or  
Fluoroelastomer)

## Pore Size Combination

0.2  $\mu\text{m}$  + 0.1  $\mu\text{m}$  (nom.)

0.8  $\mu\text{m}$  + 0.2  $\mu\text{m}$  (nom.)



## Regulatory Compliance

- Designed, developed and manufactured in accordance with an ISO 9001 certified Quality Management System
- Meet or exceed the requirements for WFI quality standards set by the current USP
- Non-pyrogenic according to USP Bacterial Endotoxins
- Pass USP Plastic Class VI Test
- Non-fiber releasing according to 21 CFR 210.3 (b) (6) and 211.72

## Sterilization

### Cartridges

In-Line Steam Sterilization

Max. 134 °C, 0.5 bar | 7.25 psi, 20 min.

Min. 25 Sterilization Cycles

or

Autoclaving

Max. 134 °C, 2 bar | 29 psi, 30 min

Min. 25 Sterilization Cycles

### Gamma Midicaps®

Autoclaving

Max. 134 °C, 2 bar | 29 psi, 30 min

Min. 5 Sterilization Cycles

or

Gamma Irradiation

≤ 50 kGy

1 Sterilization Cycle

### Gamma Maxicaps® | T-Style Maxicaps®

Autoclaving

Max. 134 °C, 2 bar | 29 psi, 30 min

Min. 5 Sterilization Cycles

or

Gamma Irradiation

< 50 kGy

1 Sterilization Cycle

### Capsules Size 4

Autoclaving

Max. 134 °C, 2 bar | 29 psi, 30 min

Min. 25 Sterilization Cycles

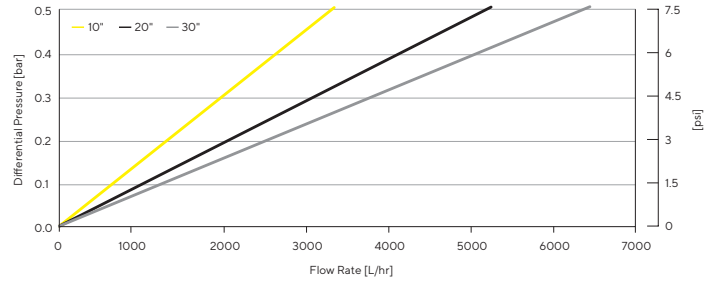
## Technical References

Validation Guide

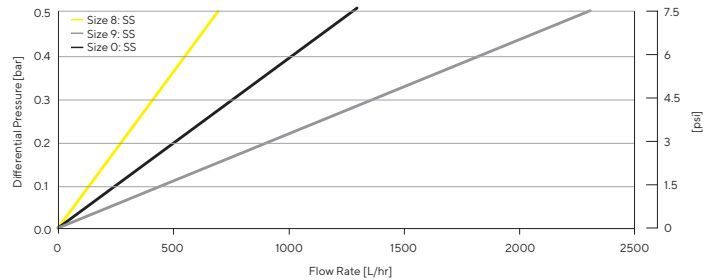
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## Performance

### Water Flow Rates for Standard Cartridges of Sartoguard NF 0.2 µm nominally



### Water Flow Rates for Gamma Midicaps® of Sartoguard NF 0.2 µm nominally



# Ordering Information

## Cartridges



546	25	■	■	■			
<b>Retention Rates</b> 58: 0.1 µm (nom.) 07: 0.2 µm (nom.)		<b>Pore Size Filter</b> M: 0.2 µm G: 0.8 µm		<b>Filter Size</b> 1: 0.65 m <sup>2</sup>   7.0 ft <sup>2</sup> (10") 2: 1.3 m <sup>2</sup>   14.0 ft <sup>2</sup> (20") 3: 1.95 m <sup>2</sup>   21.0 ft <sup>2</sup> (30")			

## Gamma Maxicaps®



546	73	■	■	■	G-	■	■	
<b>Retention Rates</b> 58: 0.1 µm (nom.) 07: 0.2 µm (nom.)		<b>Pore Size Filter</b> M: 0.2 µm G: 0.8 µm		<b>Filter Size</b> 1: 0.65 m <sup>2</sup>   7.0 ft <sup>2</sup> (10") 2: 1.3 m <sup>2</sup>   14.0 ft <sup>2</sup> (20") 3: 1.95 m <sup>2</sup>   21.0 ft <sup>2</sup> (30")		<b>Sterilization</b> G-: γ-irradiatable and autoclavable	<b>Connector Inlet</b> S: 1½" Tri-Clamp 50.5 mm O: ½" single stepped hose barb F: ¾" tri-clamp 25 mm	<b>Connector Outlet</b> S: 1½" Tri-Clamp 50.5 mm O: ½" single stepped hose barb F: ¾" tri-clamp 25 mm

## Gamma Midicaps®



546	53	■	■	■	G-	■	■	--	■
<b>Retention Rates</b> 58: 0.1 µm (nom.) 07: 0.2 µm (nom.)		<b>Pore Size Filter</b> M: 0.2 µm G: 0.8 µm		<b>Filter Size</b> 7: 0.065 m <sup>2</sup>   0.7 ft <sup>2</sup> 8: 0.13 m <sup>2</sup>   1.4 ft <sup>2</sup> 9: 0.22 m <sup>2</sup>   2.35 ft <sup>2</sup> 0: 0.44 m <sup>2</sup>   4.7 ft <sup>2</sup>		<b>Sterilization</b> G-: γ-irradiatable and autoclavable	<b>Connector Inlet</b> S: 1½" Tri-Clamp 50.5 mm O: ½" single stepped hose barb F: ¾" tri-clamp 25 mm H: ¼" multiple stepped hose barb (only size 7 with filling bell)		<b>Packing Size</b> A: box of 4 (size 7, 8, 9) V: box of 2 (size 0)
							<b>Connector Outlet</b> S: 1½" Tri-Clamp 50.5 mm O: ½" single stepped hose barb F: ¾" tri-clamp 25 mm H: ¼" multiple stepped hose barb (only size 7 with filling bell)		

## T-Style Maxicaps®



546	83	■	■	■	G-	■	■	
<b>Retention Rates</b> 58: 0.1 µm (nom.) 07: 0.2 µm (nom.)		<b>Pore Size Filter</b> M: 0.2 µm G: 0.8 µm		<b>Filter Size</b> 1: 0.65 m <sup>2</sup>   7.0 ft <sup>2</sup> (10") 2: 1.3 m <sup>2</sup>   14.0 ft <sup>2</sup> (20") 3: 1.95 m <sup>2</sup>   21.0 ft <sup>2</sup> (30")		<b>Sterilization</b> G-: γ-irradiatable and autoclavable	<b>Connector Inlet</b> S: 1½" Tri-Clamp 50.5 mm O: ½" single stepped hose barb Y: 1" single stepped hose barb	<b>Connector Outlet</b> S: 1½" Tri-Clamp 50.5 mm O: ½" single stepped hose barb Y: 1" single stepped hose barb

## Capsules



546	13	■	■	4	■	■	■	--	B
<b>Retention Rates</b> 58: 0.1 µm (nom.) 07: 0.2 µm (nom.)		<b>Pore Size Filter</b> M: 0.2 µm G: 0.8 µm		<b>Sterilization</b> --: autoclavable	<b>Connector Inlet</b> S: ¾" Tri-Clamp 25 mm O: ¼" multiple stepped hose barb		<b>Connector Outlet</b> S: ¾" Tri-Clamp 25 mm O: ¼" multiple stepped hose barb		<b>Packing Size</b> B: box of 5


Check the availability of your desired configuration with your Sartorius sales representative or online at [sartorius.com](http://sartorius.com)

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