



## Sartoguard PES

### Bioburden Retention with Membrane Prefiltration

#### Product Information

- High total throughput for economic processing
- Onside integrity testable by Diffusion- & Bubble Point Test
- Highly economic sizing for intermediate steps in downstream processing
- Excellent clarification capability and protection of subsequent final Filters or other processing equipment



#### Bacteria Retention Capability

Sartoguard PES filters are available with 0.1  $\mu\text{m}$  and 0.2  $\mu\text{m}$  nominal retention rating. The 0.1  $\mu\text{m}$  rated filters typically provide a LRV of 6 per  $\text{cm}^2$  filtration area for *Brevundimonas Diminuta*. The 0.2  $\mu\text{m}$  rated filters typically provide a LVR of 6 per  $\text{cm}^2$  filtration area for *Serratia Marcescens*.

#### Scalability

Sartoguard PES filter elements are available in a broad range of sizes and formats to provide linear scale-up from R&D to process scale. The wide range of membrane areas from 210  $\text{cm}^2$  to 2.4  $\text{m}^2$  per filter element guarantees greatest flexibility and most economic filter sizing.

#### Applications

Typical applications of Sartoguard PES filter elements include prefiltration of:

- Cell Culture Media
- Downstream Intermediates (before and after UF | DF and chromatography steps)
- Clarified cell culture harvest
- Buffers
- Aseptically filled Small Volume Parenteral
- Protection of final filters

## Technical Data

Available Sizes	Filtration Area	Max. Diffusion [ml/min]		Min. Bubble Point [bar   psi]	
		0.1 µm at 1.5 bar   22 psi	0.2 µm at 1.2 bar   17.5 psi	0.1 µm	0.2 µm
<b>Cartridges, MaxiCaps®   Gamma MaxiCaps® and T-Style MaxiCaps®</b>					
Size 1 (10")	0.8 m <sup>2</sup>   8.6 ft <sup>2</sup>	25	18	2.8   40.5	1.8   26
Size 2 (20")	1.6 m <sup>2</sup>   17.2 ft <sup>2</sup>	50	36	2.8   40.5	1.8   26
Size 3 (30")	2.4 m <sup>2</sup>   25.8 ft <sup>2</sup>	75	54	2.8   40.5	1.8   26
<b>MidiCaps®   Gamma MidiCaps®</b>					
Size 7	0.065 m <sup>2</sup>   0.7 ft <sup>2</sup>	3	3	2.8   40.5	1.8   26
Size 8	0.13 m <sup>2</sup>   1.4 ft <sup>2</sup>	6	4	2.8   40.5	1.8   26
Size 9	0.26 m <sup>2</sup>   2.8 ft <sup>2</sup>	9	6	2.8   40.5	1.8   26
Size 0	0.52 m <sup>2</sup>   5.6 ft <sup>2</sup>	18	12	2.8   40.5	1.8   26
<b>Capsules   Gamma Capsules</b>					
Size 4	0.021 m <sup>2</sup>   0.22 ft <sup>2</sup>	1.1	1.1	2.8   40.5	1.8   26

### Max. Allowable Differential Pressure

#### Cartridges

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

#### T-Style MaxiCaps®, MaxiCaps® | Gamma MaxiCaps®, MidiCaps® | Gamma MidiCaps®

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

#### Capsules | Gamma 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)

### Materials

#### Prefilter Membrane

Polyethersulfone, asymmetric

#### Endfilter Membrane

Polyethersulfone, asymmetric

#### Support Fleece

Polypropylene  
(In-Line Steam sterilizable & autoclavable)  
Polyester  
(γ-irradiatable or γ-irradiatable | autoclavable)

### Pore Size Combination

0.8 + 0.1 µm  
1.2 + 0.2 µm



## Regulatory Compliance

- Each individual element is tested for integrity by Bubble Point and Diffusion test
- 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
- USP Plastic Class VI Test
- Non-fiber releasing according to 21 CFR

## Sterilization

### Cartridges

#### In-Line Steam Sterilization

134 °C, 0.3 bar, 20 min.

Min. 25 Sterilization Cycles

or

#### Autoclaving

134°C, 2 bar, 30 min

Min. 25 Sterilization Cycles

### MaxiCaps®, MidiCaps® & Capsules

#### Autoclaving

134°C, 2 bar, 30 min

Min. 25 Sterilization Cycles (MidiCaps® & MaxiCaps®)

Min. 5 Sterilization Cycles (Capsules)

### Gamma MaxiCaps®, Gamma MidiCaps® & Gamma Capsules

#### Gamma Irradiation

≤ 50 kGy

1 Sterilization Cycle

### T-Style MaxiCaps®

#### Autoclaving

134°C, 2 bar, 30 min

Min. 5 Sterilization Cycles

or

#### Gamma Irradiation

≤ 50 kGy

1 Sterilization Cycle

## Technical References

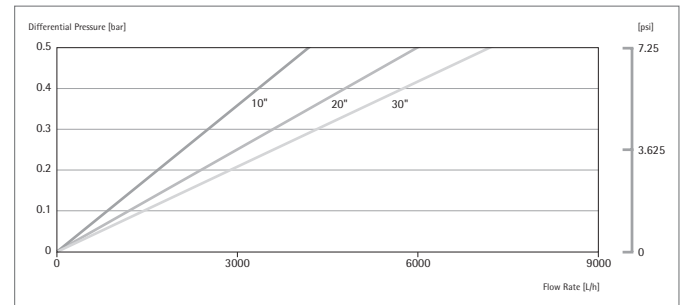
Validation Guide

SPK5782-e

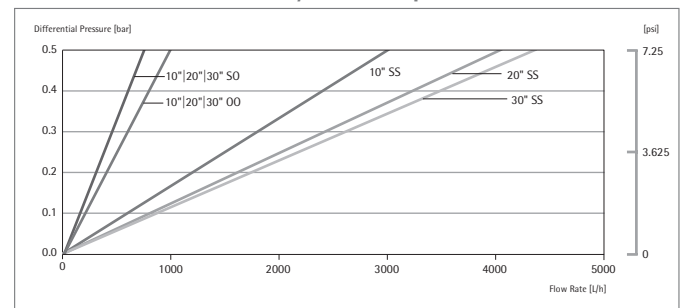
## Performance

### Sartoguard PES 0.2 µm Nominally

#### Water Flow Rates for Standard Cartridges



#### Water Flow Rates for T-Style MaxiCaps®



# Ordering Information



## Cartridge

547	25			
<b>Retention Rates</b>	<b>Pore Size Filter</b>	<b>Filter Size</b>		
58: 0.1 µm 07: 0.2 µm	G: 0.8 µm F: 1.2 µm	1: 0.8 m <sup>2</sup>   8.6 ft <sup>2</sup> (10") 2: 1.6 m <sup>2</sup>   17.2 ft <sup>2</sup> (20") 3: 2.4 m <sup>2</sup>   25.8 ft <sup>2</sup> (30")		



## T-Style MaxiCaps®

547	83				G-		
<b>Retention Rates</b>	<b>Pore Size Filter</b>	<b>Filter Size</b>		<b>Sterilization</b>	<b>Connector Inlet</b>	<b>Connector Outlet</b>	
58: 0.1 µm 07: 0.2 µm	G: 0.8 µm F: 1.2 µm	1: 0.8 m <sup>2</sup>   8.6 ft <sup>2</sup> (10") 2: 1.6 m <sup>2</sup>   17.2 ft <sup>2</sup> (20") 3: 2.4 m <sup>2</sup>   25.8 ft <sup>2</sup> (30")	G-: γ-irradiatable and autoclavable	S: 1½" Tri-Clamp 50 mm O: ½" single stepped hose barb	S: 1½" Tri-Clamp 50 mm O: ½" single stepped hose barb		



## MaxiCaps® | Gamma MaxiCaps®

547	73						
<b>Retention Rates</b>	<b>Pore Size Filter</b>	<b>Filter Size</b>		<b>Sterilization</b>	<b>Connector Inlet</b>	<b>Connector Outlet</b>	
58: 0.1 µm 07: 0.2 µm	G: 0.8 µm F: 1.2 µm	1: 0.8 m <sup>2</sup>   8.6 ft <sup>2</sup> (10") 2: 1.6 m <sup>2</sup>   17.2 ft <sup>2</sup> (20") 3: 2.4 m <sup>2</sup>   25.8 ft <sup>2</sup> (30")	G-: γ-irradiatable --: autoclavable	S: 1½" Tri-Clamp 50 mm O: ½" single stepped hose barb	S: 1½" Tri-Clamp 50 mm O: ½" single stepped hose barb		



## MidiCaps® | Gamma MidiCaps®

547	53								
<b>Retention Rates</b>	<b>Pore Size Filter</b>	<b>Filter Size</b>		<b>Sterilization</b>	<b>Connector Inlet</b>	<b>Connector Outlet</b>	<b>Packing Size</b>		
58: 0.1 µm 07: 0.2 µm	G: 0.8 µm F: 1.2 µm	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: 0.26 m <sup>2</sup>   2.8 ft <sup>2</sup> 0: 0.52 m <sup>2</sup>   5.6 ft <sup>2</sup>	G-: γ-irradiatable --: autoclavable	S: 1½" Tri-Clamp 50 mm O: ½" single stepped hose barb	S: 1½" Tri-Clamp 50 mm O: ½" single stepped hose barb	A: box of 4 (size 7, 8, 9) V: box of 2 (size 0)			



## Capsules | Gamma Capsules

547	13								
<b>Retention Rates</b>	<b>Pore Size Filter</b>	<b>Sterilization</b>	<b>Connector Inlet</b>	<b>Connector Outlet</b>	<b>Packing Size</b>				
58: 0.1 µm 07: 0.2 µm	G: 0.8 µm F: 1.2 µm	G-: γ-irradiatable --: autoclavable	S: ¾" Tri-Clamp 25 mm O: ¼" multiple stepped hose barb	S: ¾" Tri-Clamp 25 mm O: ¼" multiple stepped hose barb	B: box of 5				

Check the availability of your desired configuration with your Sartorius sales representative or online at:



[www.sartorius-stedim.com](http://www.sartorius-stedim.com)

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