

# Sartoguard PES

## Bioburden Retention With Membrane Prefiltration



### Product Information

- High total throughput for economic processing
- Onside integrity testable by Diffusion and 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 µm and 0.2 µm nominal retention rating. The 0.1 µm rated filters typically provide a LRV of 6 per cm<sup>2</sup> filtration area for *Brevundimonas Diminuta*. The 0.2 µm rated filters typically provide a LRV of 6 per cm<sup>2</sup> 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 cm<sup>2</sup> to 2.4 m<sup>2</sup> per filter element provides exceptional flexibility and 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 (nom.) at<br>1.5 bar   22 psi | 0.2 μm (nom.) at<br>1.2 bar   17.5 psi | 0.1 μm (nom.)                 | 0.2 μm (nom.) |
| Cartridges, Maxicaps®   Gamma Maxicaps® and T-Style Maxicaps® |                     |                                      |                                        |                               |               |
| Size 1 (10")                                                  | 0.8 m²   8.6 ft²    | 25                                   | 18                                     | 2.8   40.5                    | 1.8   26      |
| Size 2 (20")                                                  | 1.6 m²   17.2 ft²   | 50                                   | 36                                     | 2.8   40.5                    | 1.8   26      |
| Size 3 (30")                                                  | 2.4 m²   25.8 ft²   | 75                                   | 54                                     | 2.8   40.5                    | 1.8   26      |
| Midicaps®   Gamma Midicaps®                                   |                     |                                      |                                        |                               |               |
| Size 7                                                        | 0.065 m²   0.7 ft²  | 3                                    | 3                                      | 2.8   40.5                    | 1.8   26      |
| Size 8                                                        | 0.13 m²   1.4 ft²   | 6                                    | 4                                      | 2.8   40.5                    | 1.8   26      |
| Size 9                                                        | 0.26 m²   2.8 ft²   | 9                                    | 6                                      | 2.8   40.5                    | 1.8   26      |
| Size O                                                        | 0.52 m²   5.6 ft²   | 18                                   | 12                                     | 2.8   40.5                    | 1.8   26      |
| Capsules   Gamma Capsules                                     |                     |                                      |                                        |                               |               |
| Size 4                                                        | 0.021 m²   0.22 ft² | 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)

## Services

Sartorius Confidence® Validation Services is the perfect complement to Sartoguard PES filters.

Our services provide

- Extractables and leachables service
- Microbiological testing
- Physicochemical testing

in compliance with regulatory requirements. Our local teams of validation experts support you with our tailored and consultative approach to determine the most costeffective solution and give you the confidence you need to succeed.

## Materials

### Prefilter Membrane

Polyethersulfone, asymmetric

### Endfilter Membrane

Polyethersulfone, asymmetric

### Support Fleece

Polypropylene

(In-Line Steam sterilizable and autoclavable)

Polyester

(γ-irradiatable or γ-irradiatable | autoclavable)

## Pore Size Combination

0.8 + 0.1 μm (nom.)

1.2 + 0.2 μm (nom.)

## Regulatory Compliance

- Each individual element is tested for integrity by Diffusion
- 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  
Max. 134 °C, 0.3 bar, 20 min.  
Min. 25 Sterilization Cycles

or

Autoclaving  
Max. 134 °C, 2 bar, 30 min  
Min. 25 Sterilization Cycles

Maxicaps®, Midicaps® & Capsules

Autoclaving  
Max. 134 °C, 2 bar, 30 min  
Min. 25 Sterilization Cycles (Midicaps® and Maxicaps®)  
Min. 5 Sterilization Cycles (Capsules)

Gamma Maxicaps®, Gamma Midicaps® & Gamma Capsules

Gamma Irradiation  
≤ 50 kGy  
1 Sterilization Cycle

T-Style Maxicaps®

Autoclaving  
Max. 134 °C, 2 bar, 30 min  
Min. 5 Sterilization Cycles

or

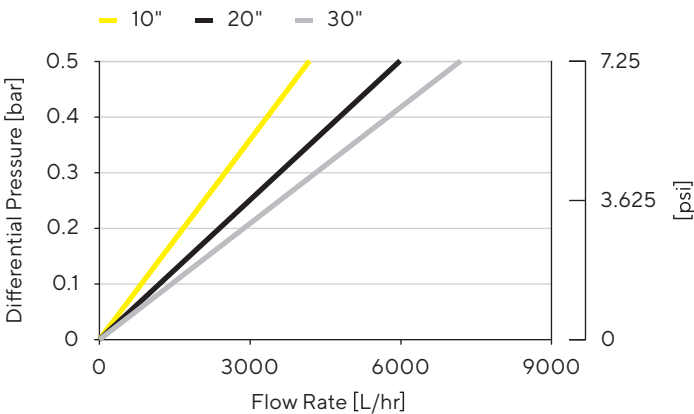
Gamma Irradiation  
≤ 50 kGy  
1 Sterilization Cycle

Technical References

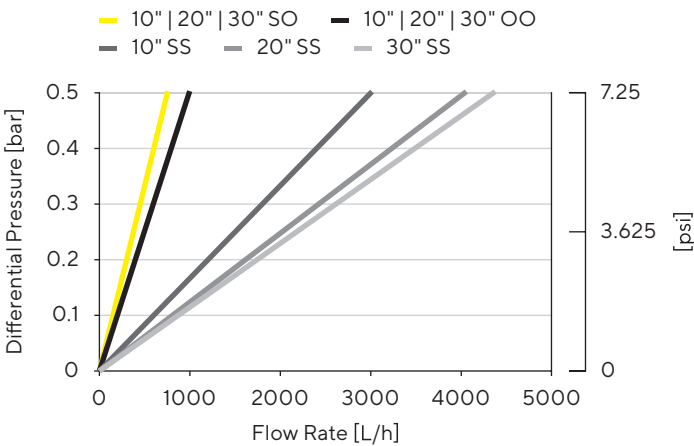
Validation Guide                      DIR No.: 2670060

Performance

Sartoguard PES 0.2 µm (nom.)  
Water Flow Rates for Standard Cartridges



Water Flow Rates for T-Style Maxicaps®



# Ordering Information



## Cartridges

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



## T-Style Maxicaps®

|                                                                  |    |                                                   |   |                                                                                                                                                                                     |    |                                                             |                                                                                                                                |                                                                                                                                 |
|------------------------------------------------------------------|----|---------------------------------------------------|---|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----|-------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------|
| 547                                                              | 83 | ■                                                 | ■ | ■                                                                                                                                                                                   | G- | ■                                                           | ■                                                                                                                              |                                                                                                                                 |
| <b>Retention Rates</b><br>58: 0.1 μm (nom.)<br>07: 0.2 μm (nom.) |    | <b>Pore Size Filter</b><br>G: 0.8 μm<br>F: 1.2 μm |   | <b>Filter Size</b><br>1: 0.8 m <sup>2</sup>   8.6 ft <sup>2</sup> (10")<br>2: 1.6 m <sup>2</sup>   17.2 ft <sup>2</sup> (20")<br>3: 2.4 m <sup>2</sup>   25.8 ft <sup>2</sup> (30") |    | <b>Sterilization</b><br>G-: γ-irradiatable and autoclavable | <b>Connector Inlet</b><br>S: ½" Tri-Clamp<br>50.5 mm<br>O: ½" single stepped<br>hose barb<br>Y: 1" single stepped<br>hose barb | <b>Connector Outlet</b><br>S: ½" Tri-Clamp<br>50.5 mm<br>O: ½" single stepped<br>hose barb<br>Y: 1" single stepped<br>hose barb |



## Maxicaps® | Gamma Maxicaps®

|                                                                  |    |                                                   |   |                                                                                                                                                                                     |   |                                                                |                                                                                                                     |                                                                                                                      |
|------------------------------------------------------------------|----|---------------------------------------------------|---|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---|----------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------|
| 547                                                              | 73 | ■                                                 | ■ | ■                                                                                                                                                                                   | ■ | ■                                                              | ■                                                                                                                   |                                                                                                                      |
| <b>Retention Rates</b><br>58: 0.1 μm (nom.)<br>07: 0.2 μm (nom.) |    | <b>Pore Size Filter</b><br>G: 0.8 μm<br>F: 1.2 μm |   | <b>Filter Size</b><br>1: 0.8 m <sup>2</sup>   8.6 ft <sup>2</sup> (10")<br>2: 1.6 m <sup>2</sup>   17.2 ft <sup>2</sup> (20")<br>3: 2.4 m <sup>2</sup>   25.8 ft <sup>2</sup> (30") |   | <b>Sterilization</b><br>G-: γ-irradiatable<br>--: autoclavable | <b>Connector Inlet</b><br>S: 1½" Tri-Clamp<br>50.5 mm<br>O: ½" single stepped<br>hose barb<br>F: ¾" tri-clamp 25 mm | <b>Connector Outlet</b><br>S: 1½" Tri-Clamp<br>50.5 mm<br>O: ½" single stepped<br>hose barb<br>F: ¾" tri-clamp 25 mm |



## Midicaps® | Gamma Midicaps®

|                                                                  |    |                                                   |   |                                                                                                                                                                                                                     |   |                                                                |                                                                                                                                                                                             |                                                                                                                                                                                                        |   |                                                                                 |  |
|------------------------------------------------------------------|----|---------------------------------------------------|---|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---|----------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---|---------------------------------------------------------------------------------|--|
| 547                                                              | 53 | ■                                                 | ■ | ■                                                                                                                                                                                                                   | ■ | ■                                                              | ■                                                                                                                                                                                           | --                                                                                                                                                                                                     | ■ |                                                                                 |  |
| <b>Retention Rates</b><br>58: 0.1 µm (nom.)<br>07: 0.2 µm (nom.) |    | <b>Pore Size Filter</b><br>G: 0.8 µm<br>F: 1.2 µm |   | <b>Filter Size</b><br>7: 0.065 m <sup>2</sup>   0.7 ft <sup>2</sup><br>8: 0.13 m <sup>2</sup>   1.4 ft <sup>2</sup><br>9: 0.26 m <sup>2</sup>   2.8 ft <sup>2</sup><br>0: 0.52 m <sup>2</sup>   5.6 ft <sup>2</sup> |   | <b>Sterilization</b><br>G-: γ-irradiatable<br>--: autoclavable |                                                                                                                                                                                             | <b>Connector Inlet</b><br>S: 1½" Tri-Clamp<br>50.5 mm<br>O: ½" single stepped<br>hose barb<br>F: ¾" tri-clamp<br>25 mm<br>H: ¼" multiple<br>stepped<br>hose barb<br>(only size 7 with<br>filling bell) |   | <b>Packing Size</b><br>A: box of 4<br>(size 7, 8, 9)<br>V: box of 2<br>(size 0) |  |
|                                                                  |    |                                                   |   |                                                                                                                                                                                                                     |   |                                                                | <b>Connector Outlet</b><br>S: 1½" Tri-Clamp 50.5 mm<br>O: ½" single stepped<br>hose barb<br>F: ¾" tri-clamp 25 mm<br>H: ¼" multiple stepped<br>hose barb (only size 7<br>with filling bell) |                                                                                                                                                                                                        |   |                                                                                 |  |



## Capsules | Gamma Capsules

|                                                                  |    |                                                   |   |                                                                |                                                                                     |   |                                                                                      |    |                                    |
|------------------------------------------------------------------|----|---------------------------------------------------|---|----------------------------------------------------------------|-------------------------------------------------------------------------------------|---|--------------------------------------------------------------------------------------|----|------------------------------------|
| 547                                                              | 13 | ■                                                 | ■ | 4                                                              | ■                                                                                   | ■ | ■                                                                                    | -- | B                                  |
| <b>Retention Rates</b><br>58: 0.1 µm (nom.)<br>07: 0.2 µm (nom.) |    | <b>Pore Size Filter</b><br>G: 0.8 µm<br>F: 1.2 µm |   | <b>Sterilization</b><br>G-: γ-irradiatable<br>--: autoclavable | <b>Connector Inlet</b><br>S: ¾" Tri-Clamp 25 mm<br>O: ¼" multiple stepped hose barb |   | <b>Connector Outlet</b><br>S: ¾" Tri-Clamp 25 mm<br>O: ¼" multiple stepped hose barb |    | <b>Packing Size</b><br>B: box of 5 |

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