



# Sartocool® PS 0.45 µm

Membrane Filter Cartridges for the Sterile Filtration of Beer



## Specifications

### Materials

Membrane	Polyethersulfone
Drainage gauze	Polypropylene
Core and supports	Polypropylene
End Caps	Polypropylene
O-Rings	Silicone

### Pore Sizes

0.45 µm

### Available Sizes | Filtration Area

Size 1	10"	0.79 m <sup>2</sup>	8.5 ft <sup>2</sup>
Size 2	20"	1.58 m <sup>2</sup>	17.0 ft <sup>2</sup>
Size 3	30"	2.37 m <sup>2</sup>	25.5 ft <sup>2</sup>
Size 4	40"	3.16 m <sup>2</sup>	34.0 ft <sup>2</sup>

### Available Adapters

25, 27, 28

### Operating Parameters

Max. Allowable Differential Pressure	5 bar   72.5 psi at 20°C
	2 bar   29 psi at 80°C
Max. Allowable Back Pressure	2 bar   29 psi at 20°C

### Sterilisation

#### Autoclaving

134°C, 2 bar (29 psi); 30 min.

#### Hot-steam sterilisation

110– 121°C, 0.5–1 bar [~7psi – ~14psi]  
20 min.

#### Steam sterilisation cycles

at least 50

All materials used in the filter cartridges meet FDA requirements, and can therefore be used in the food and beverage industries. All polypropylene components used are biosafe in accordance with the current USP, Plastics Test Class VI.

## Applications

The Sartocool® PS filter cartridge has been specially designed for the sterile filtration of beer. Its design particularly meets the requirements of the brewing industry; i.e., we have focused on developing an economic process and ensuring microbiological stability.

## Benefits and features of Sartocool® PS

### High Filtration Performance

The extremely large pore volume and density are the decisive reasons for the excellent flow rates of Sartocool® PS. Both the filter area and the pleat geometry are designed for high performance. This has the practical advantage that filter systems can be sized considerably smaller. In part, the number of cartridges installed in existing systems can be greatly reduced, which saves filtration costs. The flow rate of Sartocool® PS is higher than that for all other membrane cartridges used for this purpose (0.45 µm – 0.8 µm).

### Excellent Throughputs

Filterability of beer is the decisive factor determining the throughput of the cartridges. Nevertheless, the optimized membrane geometry of Sartocool® PS minimizes the build-up of β-glucans, and thus gelation, ensuring excellent throughput. Up to now, cleaning processes using conventional caustic soda, which is available in every brewery, achieved outstanding results. The high throughput of Sartocool® PS filter cartridges, when used under optimum conditions, will result in filtration costs that are equal to those of flash pasteurization.

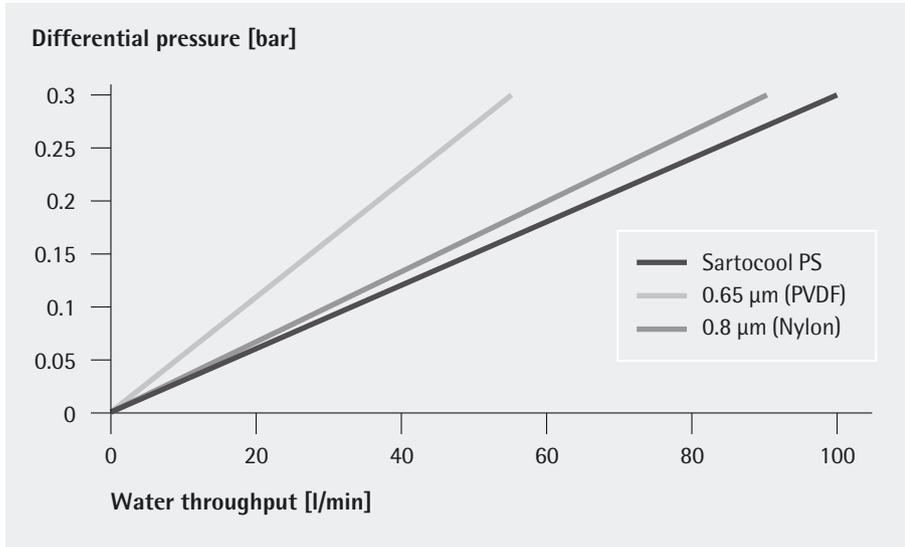
## Stability

Since the Sartocool® PS membrane is made of polyethersulfone, these filter cartridges are chemically resistant within the pH range of 1–14. This means that the cartridges can be regenerated using caustic soda | acids. In practice, Sartocool® PS has undergone 100 cleaning cycles successfully. Moreover, the properties of Sartocool® PS are not affected by sterilization procedures using hot water or steam. The cartridges also feature excellent stability when subjected to mechanical stress. Sartocool® PS filter cartridges are installed upstream of the bottling machine or keg filler, which necessitates a rugged design. Sartocool® PS meets all these design requirements. As a result, Sartocool® PS cartridge filters can withstand thousands of pressure surges of up to 5 bar (~72 psi).

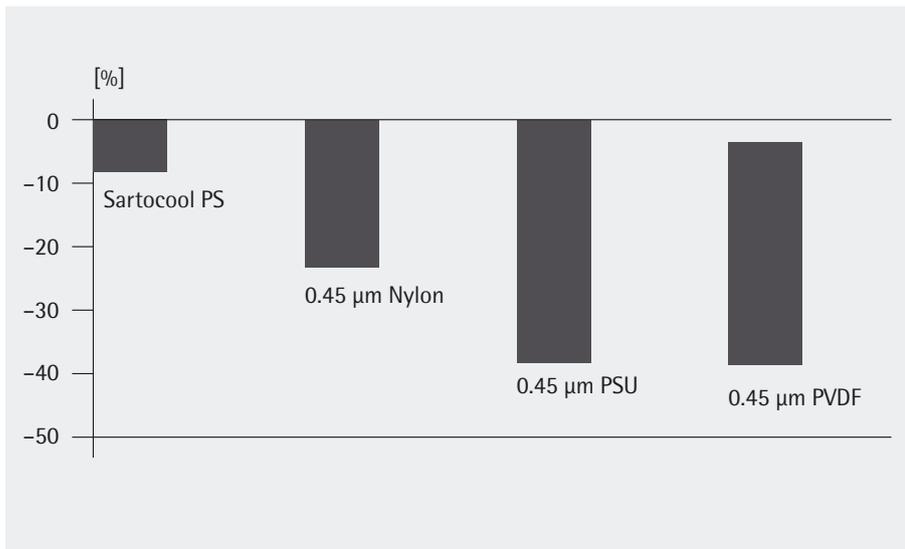
## Microbiological Stability

Sartocool® PS is often connected downstream of the sheet filter to ensure the beer's shelf life. Sartocool® PS offers the highest assurance against beer spoilage microbes, which has been validated by a bacteria challenge test using *Lactobacillus lindneri*. The retention rate is at least 10<sup>7</sup> bacteria/cm<sup>2</sup>.

**Sartocool® PS Water Flow Rates (l/min) for Cartridges at 20°C**



**Stability: Reduction in Flow Rate after 20 Steam-Sterilization Cycles, 134°C, 30 min**



**Order Information**

Order Number	Pore Size (µm)	Pack size [pieces]	Height	Test Pressure (bar   psi)	Max. Allowable Diffusion Rate (ml/min)
530**06A1	0.45	1	10" (250 mm)	1.2   17.4	15
530**06A2	0.45	1	20" (500 mm)	1.2   17.4	30
530**06A3	0.45	1	30" (750 mm)	1.2   17.4	45
530**06A4	0.45	1	40" (1,000 mm)	1.2   17.4	60

\*\* : Adapter Type

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