



sartorius

Sartocool® PS

Membrane Filter Cartridges for the Sterile Filtration of Beer



Application

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.

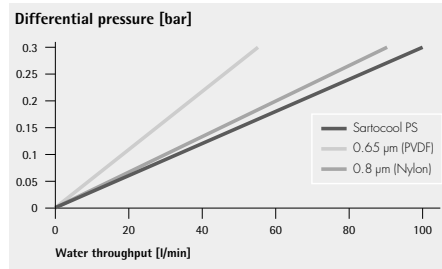
Stability

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 have 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).

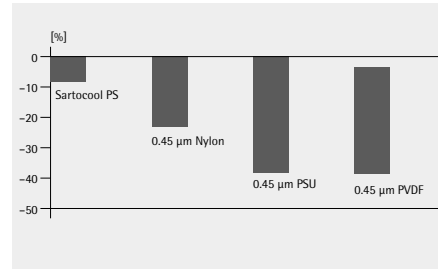
Microbiological Stability

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 107 bacteria/cm².

**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**



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Specifications

Design	Polyethersulfone	
Pore size	0.45 µm	
Microbiological recovery rate	(L. lindneri) >10 ⁷ /cm ²	
Test pressure	1.2 bar (~17 psi)	
Max. allowable diffusion	15 ml/min. × 10"	
pH stability	pH 1-14	
Filter area	0.79m ² 10"	
Adapters	25, 27, 28	
Max. differential pressure	5 bar (~72 psi) at 20°C 2 bar (29 psi) at 80°C	
Max. back pressure	2 bar (29 psi) at 20°C	
Sterilization	Autoclaving (134°C, 2 bar (29 psi); 30 min.) Hot-steam sterilization (110-121°C, 0.5-1 bar [~7psi - ~14psi] 20 min.)	
Steam sterilization cycles	at least 50	
Materials	Membrane	Polyethersulfone
	Drainage gauze	Polypropylene
	Core and supports	Polypropylene
	End caps	Polypropylene
	O-rings	Silicone

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.

Order Number	Pore Size (µm)	Height	Test Pressure (bar psi)	Max. Allowable Diffusion Rate (ml/min)
530..06A1	0.45	10" (250 mm)	1.2 bar 17psi	15
530..06A2	0.45	20" (500 mm)	1.2 bar 17psi	30
530..06A3	0.45	30" (750 mm)	1.2 bar 17psi	45
530..06A4	0.45	40" (1,000 mm)	1.2 bar 17psi	60

Specifications subject to change without notice.
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