



sartorius stedim
biotech

Sartocool® PS For the best taste in cold-filtered beer



turning science into solutions

Sartocool® PS

Reliable Performance for your filtration needs

Our No. 1 priority is to offer you products and service of the highest quality at a long term.

You can rely on the superior quality of our products, because all raw materials, semi-finished and finished products according to our quality management system (certified for compliance with ISO 9001) to ensure 100% traceability at all times. Moreover, all raw materials, as well as semi-finished and final products including packaging materials, must meet exactly defined quality specifications and pass stringent quality control tests, which are completely traced and documented.

Particularly final membrane filters, such as Sartocool® PS, must comply with the highest microbiological standards. Therefore, random samples of Sartocool® PS cartridges taken from each lot must pass standard microbiological quality control tests.

All materials used in Sartocool® PS filter cartridges meet FDA requirements and are therefore approved for use in the food and beverage industry without any restrictions. All polypropylene parts used comply with the current USP Plastic Class VI requirements and are biosafe.

Filter area

Sartocool® PS features high flow rates. However, its filter area of 0.79 m² per 10" cartridge is not the only feature responsible for its excellent flow rate performance. Each pleat of filter material has an optimal fold geometry because we carefully selected nonwoven material layers that are ideal for protection and drainage.

Sartocool® PS's innovative membrane material, along with its filter area and construction, enables it to achieve a flow rate performance up to three times higher than that of conventional cartridges. These exceptionally high flow rates possible with Sartocool® PS considerably reduce filter preparation time because you need less equipment for a smaller Sartocool® PS filtration system.

Chemical compatibility

Sartocool® PS cartridges are highly resistant to commercially available regeneration agents and procedures within the entire pH range of 1 to 14. Even if you accidentally use a treatment method not recommended in the instructions, you won't have to fear the consequences – shrinkage, hydrolysis or saponification that would irreversibly damage the filter simply will not occur.

Sartocool® PS's polyethersulfone membrane gives it the mechanical stability required in many applications, such as for filling kegs. This new membrane material withstands the highest mechanical and thermal stress. Moreover, Sartocool® PS has passed pressure pulsation tests thousands of times at a differential pressure of 75 psi (5 bar). Plus, it withstands 50 steam-sterilization cycles at 134°C, each lasting 30 minutes. This means that Sartocool® PS will deliver reliable performance right up to the end of its service life, ensuring smooth operations.

Low adsorption

The polyethersulfone membrane's slight adsorption of unwanted particles and colloids and proteins in beer reduce the load on the final membrane and does not affect the beer characteristics e.g. foam stability. In addition, this low adsorption makes it easier to regenerate the membrane. Unlike other membrane materials, the PESU membrane attains an above-average in-service life because of its slight adsorption.

Hydrophilicity

Many filter materials are hydrophobic by nature. During their manufacture, they must therefore be hydrophilized. The consistency of hydrophilization is responsible for constant flow rates. Many materials have hydrophobic spots left by inconsistent hydrophilization. That is why we gave careful attention to the consistency of hydrophilization right while Sartocool® PS was on the drawing board. As a result, Sartocool® PS reliably delivers consistently high flow rates throughout its service life, thus assuring smooth operations in this respect as well.



Low maintenance system, maximum process security...

Sartocool® PS at a glance

- Validated, testable reliability
- Optimized pore structure
- High flow rate performance [max. 10 hl | (30" x h)]
- Chemical compatibility pH 1–14

Original quality

All materials used in the Sartocool® PS filter cartridge meet the stringent FDA requirements for use in the food and beverage industry.

All polypropylene parts of the cartridge fulfill the requirements of the current USP Plastic Class VI tests to assure their biosafety. Among other properties, the unaltered stability of foam on freshly poured or tapped beer is proof of perfect filtrate quality – right from the beginning of filtration. In other words, beer filtered through Sartocool® PS will retain its original quality in terms of taste and color.

Sartocool® PS and system design

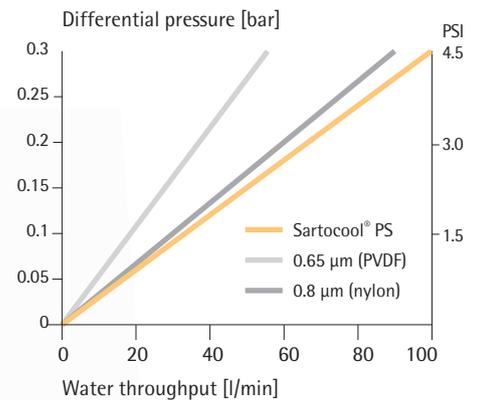
Sartorius Stedim Biotech has more to offer than a world class membrane filter. Sartorius Stedim Biotech supplies beer filtration systems all around the world. The system design covers single filtration systems for feed streams as well as planning, engineering and installation of Sartocool® PS beer filter systems for manual, semi-automatic or fully automated operation.

Whichever Sartocool® PS system you choose, you'll be getting an easy-to-operate, low-maintenance system that provides maximum process security – plus it is so easy to integrate into existing production processes.

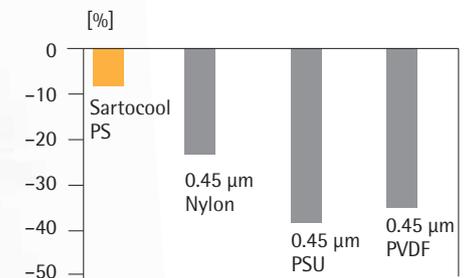
The better taste of a cold filtered beer and the economical benefits

Sartocool® PS enables you to achieve highest microbiological safety for your beer without any additional heat stress. More and more customers prefer cold filtered beer because of its natural taste. Sartocool® PS is our way of matching your customer's requirements the best. We not only want to help you satisfy your

customers' needs, but also to do something for your bottom line. Sartocool® PS is the ideal membrane filter to reduce your overall filtration costs since chemical regeneration can be applied to this membrane filter element. How all this is done? Our specialists will be happy to give you a personal demonstration of the Sartocool® PS innovation along with the wide range of products available for the processing of your beer.



Sartocool® PS Water Flow Rates (l/min) for Cartridges at 20°C (10")



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



... and advance filter cartridge technology

Construction

Sartocool® PS, a filter cartridge with a standard, 70-mm diameter, is available in 10" to 40" heights. It uses only two materials: polypropylene and polyethersulfone. During melt-sealing of the membrane to the core and cage-like outer support, no additional materials are employed. This means that there is no risk of filter materials being released into the product undergoing filtration.

Ideal membrane geometry

The innovative advantage of Sartocool® PS is a special PESU membrane that ideally meets the requirements for the filtration of beer. The membrane geometry was especially developed to retain colloidal substances in the upstream part of the membrane and trust prevent the cartridge from early blockage.

Microbiological safety

Reliable removal of all potential beer-spoilage microorganisms is the No.1 criterion that filter cartridges must meet if they are to be used in microbe-retentive filtration of beer.

Requirements that are generally placed on microbe-retentive or sterilizing filter cartridges include the following:

- They must be integrity-testable
- They must be validated for reproducible retention of microbes

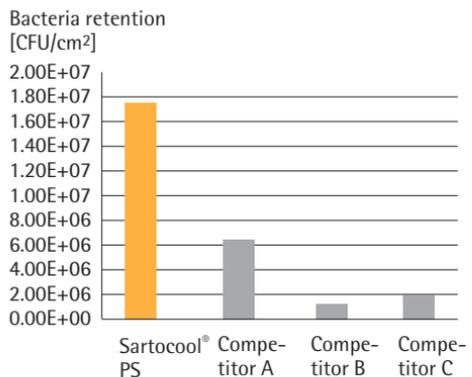
Sartocool® PS exceeds these general requirements by specifically meeting the following conditions:

- Pore size of 0.45 µm
- Validated retention of at least 107 L. lindneri per cm²

A pore size of 0.45 µm correlated with a validated retention rating of 107 beer-spoilage microorganisms per cm² is proof that you do not need to make any compromises when it comes to microbiological security.

Integrity testable

The integrity of Sartocool® PS membrane filter cartridges can be tested daily using the Sartocheck Junior integrity tester, for example. The integrity test serves two important purposes. First, it determines whether the filter cartridges are integer before filtration batch to be checked immediatly at the end of a day.



Technical Specifications

Construction	Polyethersulfone membrane	
Pore size	0.45 μm	
Microbe retention	$> 10^7/\text{cm}^2$ (L. lindneri)	
Test pressure	1.2 bar (~7 psi)	
Max. allowable diffusion	15 ml/min $\times 10''$	
pH compatibility	pH 1–14	
Filter area	0.79 $\text{m}^2/10''$	
Adapter types	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	Hot water (85–95°C, 30 min) Steam (110–121°C, 0.5–1 bar 7–14 psi for 20 min)	
Number of steamsterilization cycles	At least 50	
Materials	Membrane	Polyethersulfone
	Drainage layers	Polypropylene
	Core and outer support	Polypropylene
	End caps	Polypropylene
	O-rings	Silicone

Adapter

25	S-adapter on top, 2-flange bayonet adapter with double O-ring on bottom
27	Closed adapter on top, double O-ring adapter on bottom
28	S-adapter on top, 3-flange bayonet adapter with double O-ring on bottom

Pore sizes

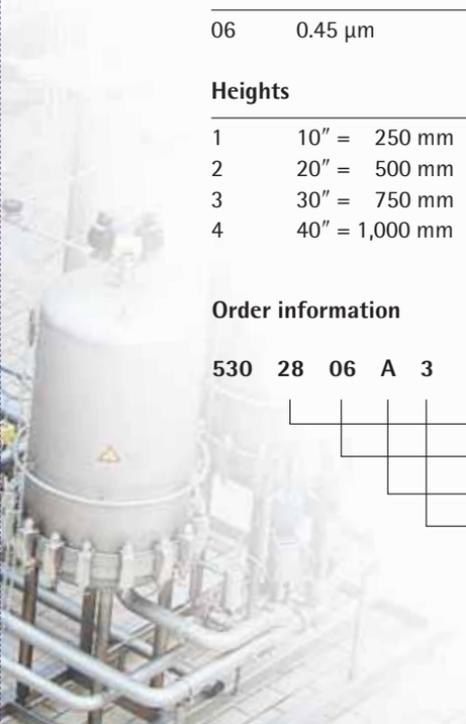
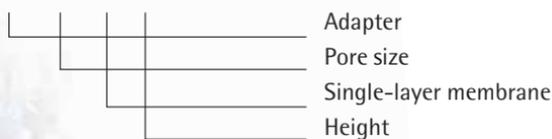
06	0.45 μm
----	--------------------

Heights

1	10" = 250 mm
2	20" = 500 mm
3	30" = 750 mm
4	40" = 1,000 mm

Order information

530 28 06 A 3



Sales and Service Contacts

For further contacts, visit www.sartorius-stedim.com

Europe

Germany

Sartorius Stedim Biotech GmbH
August-Spindler-Strasse 11
37079 Goettingen

Phone +49.551.308.0
Fax +49.551.308.3289

www.sartorius-stedim.com

Sartorius Stedim Systems GmbH
Schwarzenberger Weg 73-79
34212 Melsungen

Phone +49.5661.71.3400
Fax +49.5661.71.3702

www.sartorius-stedim.com

France

Sartorius Stedim Biotech S.A.
ZI Les Paluds
Avenue de Jouques – BP 1051
13781 Aubagne Cedex

Phone +33.442.845600
Fax +33.442.845619

Sartorius Stedim France SAS
ZI Les Paluds
Avenue de Jouques – CS 71058
13781 Aubagne Cedex

Phone +33.442.845600
Fax +33.442.846545

Austria

Sartorius Stedim Austria GmbH
Franzosengraben 12
A-1030 Vienna

Phone +43.1.7965763.18
Fax +43.1.796576344

Belgium

Sartorius Stedim Belgium N.V.
Leuvensesteenweg, 248/B
1800 Vilvoorde

Phone +32.2.756.06.80
Fax +32.2.756.06.81

Denmark

Sartorius Stedim Nordic A/S
Hoerskaetten 6D, 1.
DK-2630 Taastrup

Phone +45.7023.4400
Fax +45.4630.4030

Hungary

Sartorius Stedim Hungária Kft
Kagyló u. 5
2092 Budakeszi

Phone +36.23.457.227
Fax +36.23.457.147

Italy

Sartorius Stedim Italy S.p.A.
Via dell'Antella, 76/A
50012 Antella-Bagno a Ripoli (FI)

Phone +39.055.63.40.41
Fax +39.055.63.40.526

Netherlands

Sartorius Stedim Netherlands B.V.
Edisonbaan 24
3439 MN Nieuwegein

Phone +31.30.6025080
Fax +31.30.6025099

Poland

Sartorius Stedim Poland Sp. z o.o.
ul. Wrzesinska 70
62-025 Kostrzyn

Phone +48.61.647.38.40
Fax +48.61.879.25.04

Spain

Sartorius Stedim Spain SA
C/Isabel Colbrand 10,
Oficina 70
Polígono Industrial de Fuencarral
28050 Madrid

Phone +34.90.2110935
Fax +34.91.3589623

Switzerland

Sartorius Stedim Switzerland AG
Ringstr. 24 a
8317 Tagelswangen

Phone +41.52.354.36.36
Fax +41.44.52.354.36.46

U.K.

Sartorius Stedim UK Limited
Longmead Business Park
Blenheim Road, Epsom
Surrey KT19 9 QQ

Phone +44.1372.737159
Fax +44.1372.726171

America

USA

Sartorius Stedim North America Inc.
5 Orville Drive
Bohemia, NY 11716

Toll-Free +1.800.368.7178
Fax +1.631.254.4253

Sartorius Stedim SUS Inc.
1910 Mark Court
Concord, CA 94520

Phone +1.925.689.6650
Toll Free +1.800.914.6644
Fax +1.925.689.6988

Sartorius Stedim Systems Inc.
201 South Ingram Mill Road
Springfield, MO 65802

Phone +1.417.873.9636
Fax +1.417.873.9275

Argentina

Sartorius Argentina S.A.
Int. A. Avalos 4251
B1605ECS Munro
Buenos Aires

Phone +54.11.4721.0505
Fax +54.11.4762.2333

Brazil

Sartorius do Brasil Ltda
Av. Dom Pedro I, 241
Bairro Vila Pires
Santo André
São Paulo
Cep 09110-001

Phone +55.11.4451.6226
Fax +55.11.4451.4369

Mexico

Sartorius de México S.A. de C.V.
Circuito Circunvalación Poniente No. 149
Ciudad Satélite
53100 Naucalpan, Estado de México

Phone +52.5555.62.1102
Fax +52.5555.62.2942

Asia | Pacific

Australia

Sartorius Stedim Australia Pty. Ltd.
Unit 5, 7-11 Rodeo Drive
Dandenong South Vic 3175

Phone +61.3.8762.1800
Fax +61.3.8762.1828

China

Sartorius Stedim Beijing
Representative Office
No. 33, Yu'an Road,
Airport Industrial Zone B, Shunyi District
Beijing 101300

Phone +86.10.80426516
Fax +86.10.80426580

Sartorius Stedim Shanghai
Representative Office
Room 618, Tower 1, German Centre,
Shanghai, PRC., 201203

Phone +86.21.28986393
Fax +86.21.28986392.11

Sartorius Stedim Guangzhou Office
Room 704, Broadway Plaza,
No. 233-234 Dong Feng West Road
Guangzhou 510180

Phone +86.20.8351.7921
Fax +86.20.8351.7931

India

Sartorius Stedim India Pvt. Ltd.
#69/2-69/3, Jakkasandra
Kunigal Road, Nelamangala Tq
Bangalore – 562 123

Phone +91.80.4350.5361
Fax +91.80.4350.5253

Japan

Sartorius Stedim Japan K.K.
KY Building, 8-11
Kita Shinagawa 1-chome
Shinagawa-ku
Tokyo 140-0001

Phone +81.3.3740.5407
Fax +81.3.3740.5406

Malaysia

Sartorius Stedim Malaysia Sdn. Bhd.
Lot L3-E-3B, Enterprise 4
Technology Park Malaysia
Bukit Jalil
57000 Kuala Lumpur

Phone +60.3.8996.0622
Fax +60.3.8996.0755

Singapore

Sartorius Stedim Singapore Pte. Ltd.
1 Science Park Road,
The Capricorn, #05-08A,
Singapore Science Park 2
Singapore 117528

Phone +65.6872.3966
Fax +65.6778.2494