Technical Data Sheet

Membrane Filtration
BECO® MEMBRAN PS Pure

Membrane Filter Cartridges

BECO MEMBRAN PS Pure filter cartridges are designed for reliable removal of spoilage microorganisms and meet extended service life requirements of beverages, liquid food, cosmetics, fine chemical and process water final filtration.

Features and Benefits

- The asymmetric polyethersulfone membrane provides high microbiological retention and can be integrity tested
- The high filter area and asymmetric membrane structure of polyethersulfone offers exceptionally high flow rates and outstanding service life
- The special design allows for 72.5 psi (5 bar) differential pressure in the direction of flow and 29 psi (2 bar) differential pressure in reverse to support a long service life
- The high thermal stability allows more than 100 steam sterilization cycles
- Wide broad chemical compatibility from pH 1 - 14
- The large range of retention ratings from 0.2 - 1.0 µm, 3 different adapter codes and lengths from 10" - 40" offers great flexibility
- Eaton can suggest the most economical configuration of pre and final filter

Configuration

BECO MEMBRAN PS Pure filter cartridges are made of high-quality polyethersulfone membranes. Polypropylene support fleeces protect the membrane and provides wide chemical compatibility, while the polypropylene cage and core help to ensure maximum mechanical stability.

Materials

Filter membrane:	Polyethersulfone
Support fleeces:	Polypropylene
Cage, core	Polypropylene
End cap/adapter:	Polypropylene, adapter with reinforcing ring
O-rings:	Silicone (standard)

The plastic components meet the requirements of Directive 10/2011/EC and amendments. All materials used meet the FDA requirements according to 21 CFR.

For more information:

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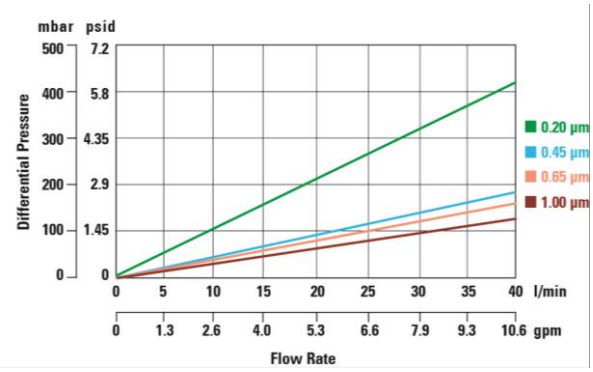
Technical Data

Nominal length	Filter area
10" (250 mm)	8.1 ft² (0.75 m²)
20" (500 mm)	16.1 ft² (1.50 m²)
30" (750 mm)	24.2 ft² (2.25 m²)
40" (1,000 mm)	32.3 ft² (3.00 m²)

Diameter:	2.75 in (70 mm)
Maximum operating temperature:	176 °F (80 °C)
Maximum differential pressure in flow direction:	72.5 psid at 68 °F (500 kPa, 5.0 bar at 20 °C) 29 psid at 176 °F (200 kPa, 2.0 bar at 80 °C) 4 psid at 250 °F (30 kPa, 0.3 bar at 121 °C)
Maximum differential pressure against flow direction:	29 psid at 68 °F (200 kPa, 2.0 bar at 20 °C)
Hot water sanitization:	Max. 194 °F (90 °C), 30 minutes
Steam sterilization:	Max. 250 °F (121 °C) 100 cycles at 221 °F (105 °C) for 30 minutes

Flow Rate

10" with water at 68 °F (20 °C) (standard values)



Integrity Test

Types	Test pressure psig	(bar)	Max. diffusion rate per 10" element
PSP 02	36	(2.5)	</= 20 ml/min
PSP 04	21.8	(1.5)	</= 15 ml/min
PSP 06	14.5	(1.0)	</= 10 ml/min
PSP 10	10.2	(0.7)	</= 15 ml/min

The operation manual supplied with the device describes the procedure for the integrity test.

Titer Reduction

Pore size	Test organism	Titer reduction/cm² (LRV)
PSP02 (0.20 µm)	*Brevundimonas diminuta*	> 10^7 (LRV > 7)
PSP04 (0.45 µm)	*Serratia marcescens*	> 10^7 (LRV > 7)
PSP06 (0.65 µm)	*Saccharomyces cerevisiae*	> 10^7 (LRV > 7)
PSP10 (1.0 µm)	*Saccharomyces cerevisiae*	10^6 (LRV 6)

Adapter Codes

Code 0	Code 2
Single open end (SOE) 2-222 O-ring without spear	Single open end (SOE) 2-222 O-ring triple bayonet adapter with spear
	

Code 7
Single open end (SOE) 2-226 O-ring double bayonet adapter with spear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Ordering Information

BECO MEMBRAN PS Pure filter cartridges with protective foil in carton.

Type	Retention rating	Adapter	Nominal length	Gasket
PSP	02 = 0.20 µm	0 = Code 0	1 = 10" (250 mm)	S = Silicone
	04 = 0.45 µm	2 = Code 2*	2 = 20" (500 mm)	E = EPDM
	06 = 0.65 µm	7 = Code 7	3 = 30" (750 mm)	V = Fluorelastomer
	10 = 1.00 µm		4 = 40"(1,000 mm)	F = FEP encapsulated

* Code 2 can be used instead of Code 5 (2-222 O-ring with spear)

Example

PSP	02	7	1	S

BECO MEMBRAN PS Pure filter cartridges; 0.2 µm retention rating; Code 7, 10" (250 mm); silicone gasket

Sterilization

Steam Sterilization
With steam at 230 °F (110 °C)/7.25 psig (50 kPa, 0.5 bar).

Duration: 30 minutes after steam emerges from all openings of the filtration system.

Hot Water Sanitization
Using water up to 194 °F (90 °C) max.

Duration: at least 30 minutes once the temperature reaches 185 °F (85 °C) from all openings of the filtration system. Soften and filter (ca. 1 µm) the water to avoid lime precipitation that could lead to premature clogging of the filter cartridge.

Regeneration

Rinse BECO MEMBRAN PS Pure filter cartridges after each use in the direction of flow using approximately 1 µm of filtered, softened water under counter pressure. This will primarily remove any deposited, water-soluble haze substances such as polysaccharides (glucanes), proteins, tannins, tartaric acid crystals. Rinsing with hot water (176 °F/80 °C) will typically remove persistent residues, if used in a timely manner. The hot water may remain in the filter overnight.

Note: Detailed information on regeneration and chemical cleaning can be found in Application Note 1 A 4.3.5.1

Safety

When used as directed and handled correctly, there are no known unfavorable effects associated with this product. BECO MEMBRAN PS Pure filter cartridges do not require the provision of safety-relevant information.

Storage, handling and transport does not present any environmental and health risks.

Disposal

BECO MEMBRAN PS Pure filter cartridges should be treated as industrial waste. Any local and other official regulations in relation to the filtered product must be followed.

Storage

Store BECO MEMBRAN PS Pure filter cartridges in their original packaging and in a dry, odor-free and UV ray protected place.

Use filter cartridges within 60 months after production date.

Certified Quality

During the production process, BECO MEMBRAN PS Pure filter cartridges are regularly monitored to ensure consistent excellent quality control and are tested for 100% integrity as a part of the manufacturing process.