

Membrane Filtration BECO® MEMBRAN PFplus

Membrane Filter Cartridges

BECO MEMBRAN PFplus pleated membrane filter cartridges made of polyvinylidene fluoride can be tested for integrity.

They feature a newly developed end cap that results in robust mechanical performance.

BECO MEMBRAN PFplus filter cartridges are the preference for applications under extreme processing conditions, such as microbiological stabilization of various beverages.

Features and Benefits

- Long service life through larger filter area and excellent mechanical stability
- High microbiological retention due to uniform pore sizes
- Very good resistance to sterilization media and cleaning solutions
- The filter can be sterilized many times with steam or hot water
- Used filter cartridges can be stored dry; the membrane retains its wettability and elasticity during storage

Configuration

BECO MEMBRAN PFplus filter cartridges are made using high-quality hydrophilic PVDF membranes. The membranes are protected by polypropylene support fleeces and offer wide chemical compatibility. Cage and core made of polypropylene ensures maximum mechanical stability.



Materials

Filter membrane:	Hydrophilic PVDF
Support fleeces:	Polypropylene
Cage, Core	Polypropylene
End cap/adaptor:	Polypropylene, adapter with reinforcing ring
O-rings:	Silicone (standard)

The plastic components meet the requirements of Directive 10/2011/EC and amendments. All material components meet the FDA guidelines for indirect food additives 21 CFR 175-182.

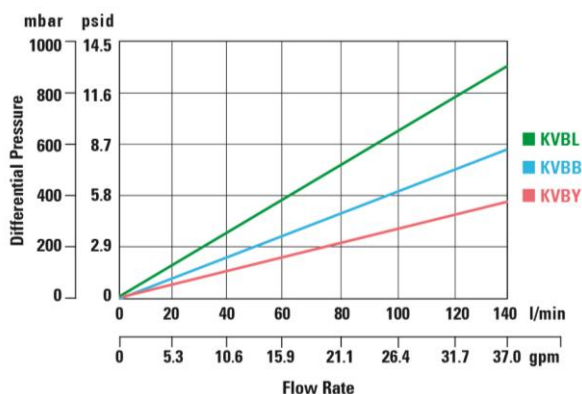
Technical Data

Nominal length	Filter area
30" (750 mm)	25.2 ft ² (2.34 m ²)

Diameter:	2.7 in (69 mm)
Maximum operating temperature:	176 °F (80 °C)
Maximum differential pressure in flow direction:	80 psid at 77 °F (550 kPa, 5.5 bar at 25 °C) 25 psid at 176 °F (170 kPa, 1.7 bar at 80 °C) 5 psid at 250 °F (35 kPa, 0.35 bar at 121 °C)
Maximum differential pressure against flow direction:	50 psid at 77 °F (350 kPa, 3.5 bar at 25 °C) (intermittent)
Steam sterilization:	Max. 250 °F (121 °C) 100 cycles at 228 °F (109 °C) for 30 minutes

Flow Rate

30" with water at 77 °F (25 °C) (standard values)



Integrity Test

Types	Test pressure psig	Test pressure (bar)	Max. diffusion rate per 10" element
KVBL	40	(2.8)	15.2 ml/min
KVBB	22	(1.5)	17.1 ml/min
KVBY	9	(0.6)	9.1 ml/min

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

Titer Reduction

Pore size	Test organism	Titer reduction/cm ² (LRV)
KVBL (0.22 μm)	<i>Pseudomonas aeruginosa</i> ; <i>Escherichia Coli</i>	>10 ⁷ (LRV > 7)
KVBB (0.45 μm)	<i>Lactobacillus hilgardii</i> ; <i>Oenococcus oeni</i>	>10 ⁷ (LRV > 7)
KVBY (0.65 μm)	<i>Saccharomyces cerevisiae</i>	>10 ⁷ (LRV > 7)

Adapter Code

Code 7

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



Ordering Information

BECO MEMBRAN PFplus filter cartridges with protective foil in carton.

Type	Retention rating	Adapter	Nominal length	Gasket
KVBL	0.22 µm	7 = Code 7	3 = 30" (750 mm)	PA = Silicone
KVBB	0.45 µm			
KVBY	0.65 µm			

Example

KVBB		7	3	PA
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BECO MEMBRAN PFplus filter cartridges; 0.45 µm retention rating; Code 7, 30" (750 mm); silicone gasket

Sterilization

Steam Sterilization

With steam at 230 °F (110 °C)/7 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 PFplus 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 4.3.1.6.

Safety

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

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

Disposal

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

Use filter cartridges within 24 months of delivery.

Certified Quality

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

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