

Membrane Filtration

BECO® MEMBRAN PFplus Range



Membrane Filter Cartridges

BECO MEMBRAN PFplus pleated membrane filter cartridges from Eaton's Begerow Product Line, 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.

Characteristics and Advantages

The specific advantages of BECO MEMBRAN PFplus filter cartridge:

- Long service life through larger filter area and excellent mechanical stability
- High microbiological safety 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 of the Membrane Filter Cartridge

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.

The BECO MEMBRAN PFplus filter cartridges meet the customer requirements in terms of safe, gentle, final filtration.



Materials used:

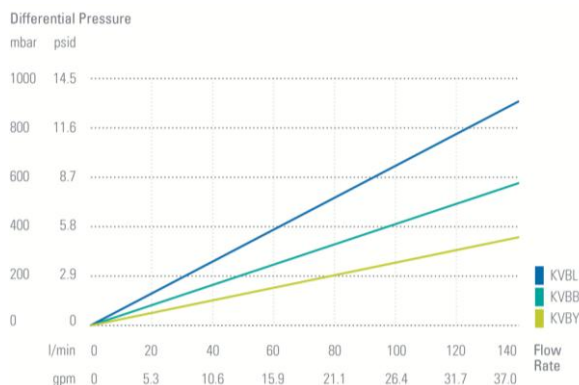
Filter membrane:	Hydrophilic PVDF
Support fleeces:	Polypropylene
Cage, Core	Polypropylene
End cap/adaptor:	Polypropylene, adapter with reinforcing ring
O-rings:	Silicone (standard)

The plastic components meet the requirements of Directive 2002/72/EC and amendments. All material components meet the FDA guidelines for indirect food additives 21 CFR 177-182.

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)



Titer Reduction

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

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
KVBV	9	(0.6)	9.1 ml/min

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

Adapter Code

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



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 Sterilization:

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.

Flushing/Regeneration

BECO MEMBRAN PFplus filter cartridges should be rinsed daily after use in the direction of product flow using filtered (approx. 1 µm), softened water under counter pressure. This will largely 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 usually also remove persistent residues, if used in time. The hot water may remain in the filter overnight.

Note: Detailed information on regeneration and chemical cleaning can be found in Note of Application 1 A 4.3.1.6.

Ordering Information

BECO MEMBRAN PFplus filter cartridges with protective foil in carton.

HS Customs Tariff: 8421 99 00

Type	Retention rating	Adapter	Nominal length	Gasket
KVBL	0.22 µm	7 = Code 7	3 = 30" (75 cm)	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"; silicone gasket

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

BECO MEMBRAN PFplus filter cartridges should be stored 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 monitored constantly to ensure consistently high quality.

All BECO MEMBRAN PFplus filter cartridges are tested for 100% integrity as a part of the manufacturing process.

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of Eaton's filtration products.

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