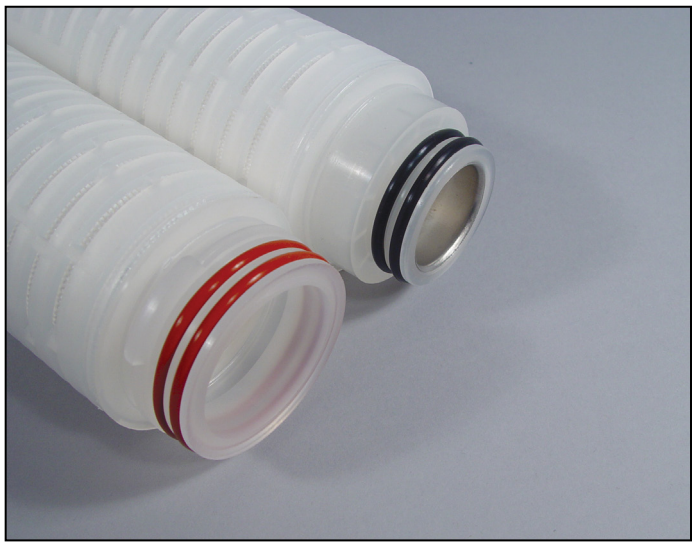
BPVWB Cartridge Filters

High Capacity Hydrophobic PVDF Membrane

CRITICAL PROCESS FILTRATION, INC.



Biopharmaceutical Grade

BPVWB Membrane Filter Cartridges are manufactured with high capacity hydrophobic polyvinylidene fluoride (PVDF) membrane. The high capacity membrane provides high dirt holding capacity, excellent throughput and high efficiency particle retention. These cartridges are designed for compressed gas filtration and vent filtration. Representative cartridge modules from each manufacturing lot are tested before lot release from manufacturing.

The cartridge surface area, filter core design, pleat configuration, and pleat packing density have been optimized to provide increased cartridge life and lower filtration operating costs. Rugged construction ensures repeatable steaming.

Construction Materials

Filtration Media	High Capacity Hydrophobic PVDF Membrane
Media Support	Polypropylene
End Caps	Polypropylene
Center Core	Polypropylene
Outer Support Cage	Polypropylene
Sealing Method	Thermal Bonding
O-rings	Buna, Viton® (or FKM), EP, Silicone, FEP Encapsulated Silicone, FEP Encapsulated Viton (or FKM)

Applications

- Compressed Air
- Fermentation Air
- Solvents
- Pressurized Gases
- Tank Ventilation
- Non-Aqueous Solutions

Dimensions

Length	5 to 40 in. (12.7 to 101.6 cm) nominal
Outside Diameter	2.75 in. (7.0 cm) nominal
Filtration Area	6.0 ft^2 (0.56 m^2) per 10 in. length

Integrity Test Information

Representative samples from each manufacturing lot are tested for integrity to ensure consistent performance.

Maximum Operating Parameters

Differential Pressure	
• **Forward**	50 psid (3.4 bard) at 20 °C (68 °F)
• **Reverse**	40 psid (2.7 bard) at 20 °C (68 °F)
Operating Temperature	82 °C (180 °F) at 10 psid (0.69 bard)
Recommended Changeout Pressure	35 psid (2.4 bard)

Sanitization/Sterilization

Autoclave	121 °C (250 °F), 30 min, multiple cycles
In-line Steam	135 °C (275 °F), 30 min, multiple cycles

For all elevated temperature procedures above, a stainless steel support ring is required.

Chemical Sanitization

Performed using industry standard concentrations of hydrogen peroxide, paracetic acid, sodium hypochlorite, and other selected chemicals.

Total Performance

Critical Process Filtration, Inc. is a vertically integrated manufacturer of filtration products to industries in which filtration is considered a critical part of the manufacturing process. We supply a complete line of products and services to help you cost effectively satisfy all your filtration requirements from a single source.

Quality Assurance and Standards

Critical Process Filtration filters are designed for use in cGMP-compliant processes. Our state of the art manufacturing facility and quality management system both meet ISO 9001:2008 standards. Each operation from assembly and test to cleaning, drying, and packaging is done in appropriately rated clean rooms. Each filter is assigned a lot code to ensure the traceability of manufacturing data and materials. A sophisticated MRP system collects and processes real time data from manufacturing centers and inspection points. This allows variable and attribute data to be quickly and easily analyzed driving constant improvements in both quality and cost.

USP Biosafety and FDA Compliance

The materials used to construct biopharmaceutical grade PVWB cartridge filters are non-toxic and meet the requirements for the MEM Elution Cytotoxicity Test and the requirements for Biological Reactivity Tests in the current version of the United States Pharmacopeia (USP) for Class VI - 121 °C Plastics. In addition, the materials meet the requirements listed by the FDA as appropriate for use in articles intended for repeated food contact as specified in Title 21 CFR sections 174.5, 177.1500, 177.1520, 177.1630, 177.2440, and 177.2600 as appropriate. BPVWB filters comply with Title 21 CFR sections 210.3 (b)(6) and 211.72, for non-fiber releasing filters. The levels of bacterial endotoxins in aqueous extracts from biopharmaceutical grade filters are below current USP limits as specified for water for injection.

Extractables

Biopharmaceutical grade filters typically exhibit low levels of non-volatile residues.

Validation

BPVWB filters rated at 0.22 µm are validated with aerosol challenge tests using modified test protocols for bacterial filtration efficiency. The challenge tests use *Brevundimonas diminuta* (ATCC 19146) with the challenge level at 7.5×10^5 organisms per cm^2 of membrane for 0.22 µm filters.

Critical Process Filtration can provide validation assistance.

Flow Rate

The Typical Flow Rates table represents typical water or air/gas flow at a 1 psid (69 mbard) pressure differential across a single 10 in. cartridge element. The test fluids are water or compressed air at ambient temperature. These values are approximations because of the differences in pressure drop encountered in housings and piping systems. Extrapolation for housings with multiple elements and higher pressure drops can be done for sizing purposes. Exact flow rates will be installation dependent.

Typical Flow Rates

Pore Size	0.22 µm	0.45 µm	0.65 µm	0.85 µm	1.0 µm
Water Flow Rates (gpm)	1.1	1.4	2.5	4.0	7.0
Air/Gas Flow Rate (scfm)	> 62	>72	>85	>91	>91

Ordering Information

Cartridge order numbers have several variables from pore size to end cap type. For example, Biopharmaceutical Grade, High Capacity Hydrophobic PVDF Membrane, 0.22 Micron Rating, With SS Support Ring, 20"Length, Silicone O-Rings, 2-226/Spear End Cap Configuration = BPVWB-20S00002S9.

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Pore Size Code
-20 = 0.22 µm
-40 = 0.45 µm
-60 = 0.65 µm
-85 = 0.85 µm
1-0 = 1.0 µm

316 SS Ring
S = Ring
N = No Ring

Cartridge Length Code
05 = 4.875 in. (12.4 cm)
97 = 9.75 in. (24.8 cm)
01 = 10 in. (25.4 cm)
19 = 19.5 in. (49.5 cm)
02 = 20 in. (50.8 cm)
29 = 29.25 in. (74.3 cm)
03 = 30 in. (76.2 cm)
04 = 40 in. (101.6 cm)

O-ring/Gasket Code
S = Silicone
B = Buna
V = Viton (or FKM)
T = FEP Encapsulated Viton (or FKM)
E = EP
R = FEP Encapsulated Silicone

End Cap Code
0 = Flat Gasket, DOE
1 = Flat Gasket/Plug
2 = 2-222 O-ring/Plug
3 = 213/119 Internal O-ring DOE
4 = 213/119 Internal O-ring/Plug
5 = 2-222 O-ring/Flat
6 = 2-226 O-ring/Flat
7 = 020 O-ring/Plug
8 = 2-222 O-ring/Spear
9 = 2-226 O-ring/Spear
21 = 2-223 O-ring/Flat
22 = 2-223 O-ring/Spear
23 = 2-222 O-ring 3 Tab/Flat
24 = 2-222 O-ring 3 Tab/Spear
25 = Short 2-222/Plug

Request a **QUOTE** *from your area representative*

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