# BPVWB Capsule Filters

*High Capacity Hydrophobic PVDF Membrane*

CRITICAL PROCESS FILTRATION, INC.

**High capacity membrane for maximum filter life**
**Designed for filtration of air and process gases**
**Vent filtration for the protection of tank contents**

## Applications

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

Biopharmaceutical grade PVWB capsules are manufactured for the critical needs of the pharmaceutical and biotech industry. Made with high capacity hydrophobic polyvinylidene fluoride (PVDF) membrane, these capsules are used for compressed gases, and as vent filters. The high capacity membrane provides high dirt holding capacity, excellent throughput and high efficiency particle retention. Representative filter modules are integrity tested before lot release from manufacturing to assure consistent performance.

The capsule media surface area, filter core design, pleat configuration and pleat packing density have been optimized to provide increased life resulting in lower filtration operating costs.

Biopharmaceutical Grade

## BPVWB Capsule Filters - Filtration Area

| Media | Capsule Length | | | | |
|---|---|---|---|---|---|
| | 2″ | 5″ | 10″ | 20″ | 30″ |
| **High Capacity Hydrophobic PVDF Membrane** | 1.0 $ft^2$ (0.093$m^2$) | 3.0 $ft^2$ (0.279$m^2$) | 6.0 $ft^2$ (0.557$m^2$) | 12.0 $ft^2$ (1.115$m^2$) | 18.0 $ft^2$ (1.672$m^2$) |

## Flow Rate / Filtration Area

The following table represents typical water or air/gas flow at a one psi (69 mbar) pressure differential across a single 2 inch capsule with 1.0 $ft^2$ (0.093 $m^2$) of media with 1/2″ FNPT ports. The test fluids are water or compressed air at ambient temperature. Higher pressure drops are acceptable, but as flows increase the pressure drop of the housing becomes more apparent.

| Pore Size | 0.22 µm | 0.45 µm | 0.65 µm | 0.85 µm | 1.0 µm |
|---|---|---|---|---|---|
| **Water Flow Rates (gpm)** | 0.18 | 0.23 | 0.42 | 0.67 | 1.17 |
| **Air/Gas Flow Rates (scfm)** | >10 | >12 | >14 | >15 | >15 |

* For approximate flow rates for 5″ through 30″ capsules, refer to the appropriate cartridge data sheet

## Construction Materials

| | |
|---|---|
| **Housing** | Polypropylene |
| **Filtration Media** | High Capacity Hydrophobic PVDF Membrane |
| **Media Support** | Polypropylene |
| **End Caps** | Polypropylene |
| **Center Core** | Polypropylene |
| **Outer Support Cage** | Polypropylene |
| **Sealing Method** | Thermal Bonding |

## Maximum Operating Parameters

| | |
|---|---|
| **Liquid Operational Pressure** | 80 psi (5.5 bar) at 20 °C (68 °F) |
| **Gases Operational Pressure** | 60 psi (4.1 bar) at 20 °C (68 °F) |
| **Operating Temperature** | 43 °C (110 °F) at 30 psi (2.1 bar) in water |
| **Forward Differential Pressure** | 50 psid (3.4 bard) at 20 °C (68 °F) |
| **Reverse Differential Pressure** | 40 psid (2.7 bard) at 20 °C (68 °F) |
| **Recommended Changeout Pressure** | 35 psid (2.4 bard) |

## Sanitization/Sterilization

**Autoclave**.....250° F (121° C), 30 min, 5+ cycles
**Chemical Sanitization**.....Industry standard concentrations of hydrogen peroxide, paracetic acid, sodium hypochlorite and other selected chemicals.
**Note**.....BPVWB capsules are not to be used in steam.
**Pre Sterilized**.....BPVWB capsules are offered in both non- and pre- sterilized forms.

## Extractables

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

## USP Biosafety and FDA Compliance

The materials used to construct BPVWB capsule 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 capsule 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 capsule filters are below current USP limits as specified for water for injection.

## Integrity Test Information

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

## Quality Assurance and Standards

Critical Process Filtration uses state of the art computer controlled equipment to consistently produce high quality products as well as significantly reduce hand operations that can compromise quality. All manufacturing and testing is continuously monitored in real time so that data can be quickly and easily analyzed to facilitate improvements in both quality and cost.

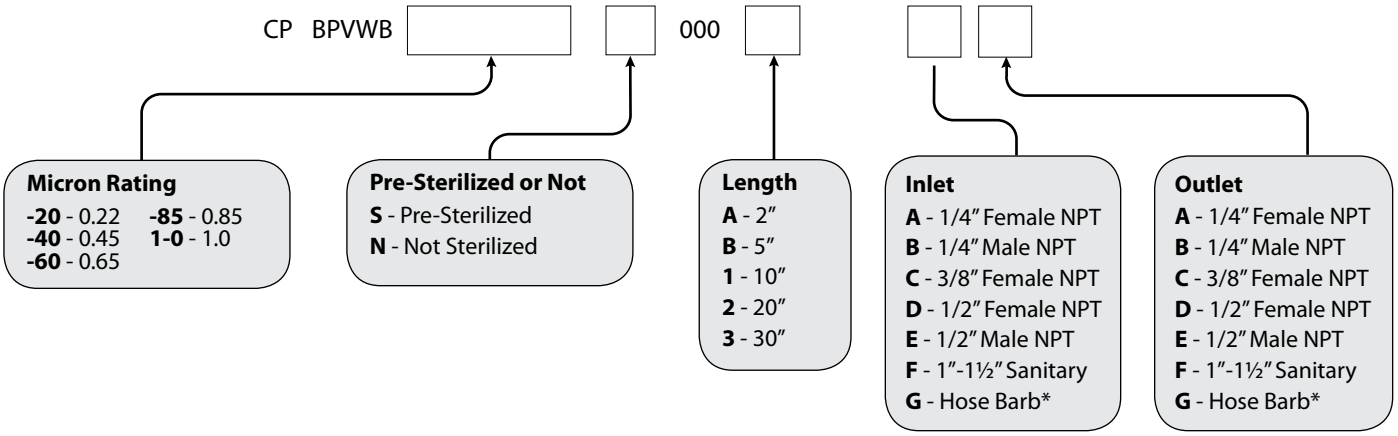
The Critical Process Filtration manufacturing and quality systems meet rigorous ISO 9001:2008 standards. Each operation, including assembly, testing, cleaning, drying and packaging, is done in an appropriately rated clean room. Manufacturing is controlled using a sophisticated manufacturing system that networks work stations, manufacturing centers and inspection points. During the manufacturing and inspection processes, data is collected in real time to allow continuous quality monitoring and full traceability of all materials and processes.

## 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.

## Ordering Information

Capsule order number example: Biopharmaceutical Grade High Capacity Hydrophobic PVDF Membrane, 0.22 Micron Rating, Pre-Sterilized, 10" Length, Sanitary Inlet, Sanitary Outlet = CPBPVWB-20S0001FF.




Hose Barb Diameter Ranges*

| | Minimum | Maximum |
|---|---|---|
| **Outer Diameters** | 11/32" (8.6mm) | 9/16" (14.0mm) |
| **Inner Diameters** | 5/32" (4.0mm) | 13/32" (10.5mm) |

*Request a QUOTE from your area representative*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