

## Biofil™ 1

### Polyethersulfone Membrane Cartridge Filters



**Porvair Biofil™ 1 cartridges utilise a single layer of polyethersulfone (PES) membrane, providing a filter with effective bioburden retention properties to support the manufacture of food and beverage products.**

The inherently hydrophilic and asymmetric nature of the PES membrane facilitates high flux rates and enhances the wettability characteristics of the cartridges.

By combining this membrane with quality all-polypropylene support components and high integrity manufacturing techniques, Biofil™ 1 filter cartridges are ideally suited to the most demanding process conditions.

#### Typical Applications

- Beverages
- Mineral Water
- Pure water supply

#### Ordering Information

| Product Code: 1 2 3 4 5 6 |                                    |            |   |  |   |
|---------------------------|------------------------------------|------------|---|--|---|
| 1: Membrane               | 2: Pore rating                     | 3: Version | 4: Length (Nominal)   | 5: End Fitting   | 6: Seals  |
| B Biofil™ 1               | 20 0.2µm<br>45 0.45µm<br>65 0.65µm | S Standard | 1 10" (254mm)<br>2 20" (508mm)<br>3 30" (762mm)<br>4 40" (1016mm)<br>5 5" (125mm) | A Code 3<br>B Code 7<br>C Code 8<br>F N SOE<br>K Code 2<br>M DOE<br>U 224, fin | A Ethylene Propylene<br>B Silicone<br>C Viton®<br>D Nitrile<br>E FEP Encap. Viton®<br>G FEP Encap. Silicone |

## Features and Benefits

- Guaranteed microbial ratings
- Excellent hydrolysis resistance
- Excellent chemical compatibility
- Suitable for steam sterilising
- Full traceability
- Controlled manufacturing environment

## Specifications

### Materials of Manufacture

|                            |                  |
|----------------------------|------------------|
| Filter membrane:           | Polyethersulfone |
| Membrane support:          | Polypropylene    |
| Irrigation mesh (support): | Polypropylene    |
| Drainage layer:            | Polypropylene    |
| Inner core:                | Polypropylene    |
| Outer support:             | Polypropylene    |
| End fittings:              | Polypropylene    |
| Support ring:              | Stainless steel  |

All polymeric materials used in the manufacture of Biofil™ 1 are FDA CFR 21 & EC 10/2011 compliant.

### Cartridge Dimensions (Nominal)

|                            |  |
|----------------------------|--|
| Effective Filtration Area: | 0.6m <sup>2</sup> (6.5ft <sup>2</sup> )<br>(per 10" module)  |
| Diameter:                  | 70mm (2.8")  |
| Length:                    | 1 module: 254mm (10")<br>2 modules: 508mm (20")<br>3 modules: 762mm (30")<br>4 modules: 1016mm (40") |

### Gaskets and O-Rings

FDA approved Ethylene Propylene, FEP encapsulated, Silicone, Viton® or Nitrile.

### Maximum Differential Pressure

Normal flow direction at:

|               |                |
|---------------|----------------|
| 20°C (68°F):  | 5.0bar (73psi) |
| 80°C (176°F): | 2.4bar (35psi) |

Reverse flow direction at:

|              |                |
|--------------|----------------|
| 20°C (68°F): | 3.0bar (44psi) |
|--------------|----------------|

### Operating Temperature

Maximum continuous: 80°C (176°F)

### Sterilisation

*In situ* steam 50 x 30 minute cycles at 135°C (275°F)  
Hot water 100 cycles at 90°C (194°F)

### Integrity Testing

Each Biofil™ 1 module of every cartridge is individually integrity tested, which correlates to the HIMA and ASTM F838-20 bacterial challenge tests. Non-destructive integrity tests, such as Pressure Hold, Diffusive Flow and Bubble Point, can be performed by customers. Please contact us for procedural detail.

### Clean Water Flow Rates

- A 254mm (10") Biofil™ 1 single cartridge exhibits the flow- $\Delta P$  characteristics indicated below, for solutions with a viscosity of 1 centipoise.

