High Purity - Food and Beverage Grade PES
Hydrophilic Polyethersulfone (PES) Membrane Developed for the Food and Beverage Industry

Food and Beverage Grade PES Cartridges have been designed to comply with all FDA requirements for the food industry. The polyethersulfone membrane exhibits low protein-binding characteristics; making the GFPESS series an excellent choice for fermented beverage applications. Each cartridge is flushed with high purity DI water and 100% integrity tested to ensure the delivery of clean effluent as well as low extractables. The Extended Area option (GFPESSX) offers up to 40% more surface area. This additional area results in significant increases in flowrate and loading capacity in the same footprint.

The 0.2 micron cartridge has been validated with Brevundamol dioxide and exhibits a Log 2 reduction (10^2 organisms/cm²) of the bacteria. Additionally, the 0.45 micron cartridge has been validated with Serratia marscescens and also shows a Log 2 reduction (10^2 organisms/cm²) of the bacteria.

Flow Rate vs Pressure Drop

Construction Materials

- Membrane: Polyethersulfone
- Support Media: Polypropylene
- End Caps: Polypropylene
- Center Core: Polypropylene
- Outer Support Cage: Polypropylene
- O-Rings/Gaskets: Buna, EPDM, Silicone, Viton®, Teflon® Encapsulated Viton®

Sanitization/Sterilization

- Filtered Hot Water: 80°C for 30 min.
- Steam Sterilization: 121°C for 30 min., multiple cycles

Chemicals: Cartridges are chemically compatible with most chemicals and sanitizing agents.

Note: Stainless steel insert option needed for all cartridges being hot water sanitized or steam sterilized.

Typical Applications

- Wine
- Beer
- Juices
- Soft Drinks
- Bottled Water

Dimensions

- Length: 10 to 40 inches (25.4 to 101.6 cm) nominal
- Outside Diameter: 2.5" (63.5 mm)

Maximum Recommended Operating Conditions

- Temperature: 176°F (80°C)

Maximum Differential Pressures

- Forward: 50 PSI (3.4 bar) at 20°C
- Reverse: 40 PSI (2.7 bar) at 20°C

Food Safety Compliance

Materials of construction comply with FDA regulations for food and beverage contact use as detailed in the US Code of Federal Regulations, 21CFR. Materials used to produce filter media and hardware are deemed safe for use in contact with foodstuffs in accordance with EU Directives 2002/72/EC, 1935/2004, and/or 10/2011.

Toxicity

All polypropylene components meet the specifications for biological safety per USP Class VI – 121°C for plastics.

Ordering Information

<table>
<thead>
<tr>
<th>GFPESS</th>
<th>Rating (µ)</th>
<th>A Length</th>
<th>C</th>
<th>End Cap Style</th>
<th>O-Rings/Gaskets</th>
<th>Adders</th>
</tr>
</thead>
<tbody>
<tr>
<td>GFPESSX</td>
<td>0.04</td>
<td>10&quot; (25.4 cm)</td>
<td>2 = DOE Flat Gasket</td>
<td>B = Buna</td>
<td>I = Stainless Steel Insert</td>
<td></td>
</tr>
<tr>
<td>0.1</td>
<td>20&quot; (50.8 cm)</td>
<td>3 = 222 w/ Fin</td>
<td>E = EPDM</td>
<td>CS = 316ss Compression Spring</td>
<td></td>
<td></td>
</tr>
<tr>
<td>0.2</td>
<td>30&quot; (76.2 cm)</td>
<td>4 = 222 w/ Flat Cap</td>
<td>S = Silicone</td>
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<td></td>
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</tr>
<tr>
<td>0.45</td>
<td>40&quot; (101.6 cm)</td>
<td>6 = 226 w/ Flat Cap</td>
<td>V = Viton®</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>0.65</td>
<td>7 = 226 w/ Fin</td>
<td>T = Teflon® Encapsulated Viton®</td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0.8</td>
<td>16 = 213 Internal O-Ring</td>
<td>Z = Teflon® Encapsulated Silicone</td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>

DISCLAIMER: Filtration data presented is representative of performance observed in controlled laboratory testing. It is not given as a warranty, specification or statement of fitness for use. Specific performance can vary widely depending on contaminant type, fluid properties, flow rates and environmental conditions. It is recommended that users conduct thorough qualification testing to assure the product functions as required.