EPS Mini-Capsule Filters
Single Layer PES Membrane

EPS Mini-Capsule filters are constructed with a single layer Polyethersulfone (PES) membrane. They are designed for the electronics industry and used for removing fine and ultrafine particles from aqueous liquids. Pore sizes range from 0.02 to 0.45 µm and the filter devices scale from laboratory to full production using identical materials to ensure consistent results.

These hydrophilic filters have low extractables for fast rinse-up to conductivity limits and fast rinse-down to TOC limits. EPS Mini-Capsule filters deliver high flow and throughput with chemical compatibility across a wide pH range. They are commonly utilized in the final filtration of liquids for point of use tools.

EPS filters are pulse power flushed until the rinse effluent reaches 18+ Megohm-cm and less than 3ppb TOC. Each filter is individually tested to ensure integrity.

Critical Process provides unrivaled delivery times, technical consulting before purchasing, and very competitively priced high-performance products. Our comprehensive testing & analysis and validation services support your team whenever they need it. Your process experts partnering with our filtration experts is how we deliver your company’s solution right the first time.

EPS Mini-Capsules are recommended for:
- UPDI Water
- Acids & Bases
- Etch Baths
- Solvents
- Bulk Chemicals
- Plating Solutions

Fine Particle Removal
Clarification & Prefiltration

MINI-CAPSULES – Nominal Dimensions
Body Length: 2.85 in. (7.2 cm)
Overall Length – 3.75 to 5.19 in. (9.5 to 13.2 cm)
Outside Diameter: 2.95 in. (7.5 cm)
### Maximum Operating Parameters

<table>
<thead>
<tr>
<th>MINI-CAPSULES</th>
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</thead>
<tbody>
<tr>
<td><strong>Liquid Operational Pressure</strong></td>
<td>80 psi at 68 °F (5.52 bard at 20 °C)</td>
</tr>
<tr>
<td><strong>Gases Operational Pressure</strong></td>
<td>60 psi at 68 °F (4.14 bard at 20 °C)</td>
</tr>
<tr>
<td><strong>Operating Temperature (water)</strong></td>
<td>110 °F at 30 psid (43 °C at 2.07 bard)</td>
</tr>
<tr>
<td><strong>Forward Differential Pressure</strong></td>
<td>50 psid at 68 °F (3.45 bard at 20 °C)</td>
</tr>
<tr>
<td><strong>Reverse Differential Pressure</strong></td>
<td>40 psid at 68 °F (2.76 bard at 20 °C)</td>
</tr>
<tr>
<td><strong>Recommended Changeout Pressure</strong></td>
<td>35 psid (2.41 bard)</td>
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### Sanitization & Sterilization*

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<tbody>
<tr>
<td><strong>Autoclave</strong></td>
<td>250 °F (121 °C), 30 min, 5+ cycles</td>
</tr>
<tr>
<td><strong>Chemical Sanitization</strong></td>
<td>Performed using industry standard concentrations of hydrogen peroxide, peracetic acid, sodium hypochlorite and other selected chemicals.</td>
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</table>

### Integrity Testing

<table>
<thead>
<tr>
<th>PORE SIZE</th>
<th>BUBBLE POINT MINIMUM*</th>
</tr>
</thead>
<tbody>
<tr>
<td>µm</td>
<td>PSIG</td>
</tr>
<tr>
<td>0.02</td>
<td>**</td>
</tr>
<tr>
<td>0.03</td>
<td>**</td>
</tr>
<tr>
<td>0.10</td>
<td>**</td>
</tr>
<tr>
<td>0.22</td>
<td>50</td>
</tr>
<tr>
<td>0.45</td>
<td>25</td>
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</tbody>
</table>

* For water wetted membrane
** Test pressure exceeds operational limits of mini-capsule filters.

### Filtration Area

<table>
<thead>
<tr>
<th>Single Layer</th>
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<tbody>
<tr>
<td><strong>Area</strong></td>
<td>0.50 ft²</td>
</tr>
<tr>
<td></td>
<td>468 cm²</td>
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</tbody>
</table>

### Construction Materials

<p>| | |</p>
<table>
<thead>
<tr>
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<tbody>
<tr>
<td><strong>Filtration Media</strong></td>
<td>Symmetric PES membrane</td>
</tr>
<tr>
<td><strong>Media Support</strong></td>
<td>Polypropylene</td>
</tr>
<tr>
<td><strong>End Caps, Center Core, Outer Support Cage, Mini-Capsule Housing</strong></td>
<td>Polypropylene</td>
</tr>
<tr>
<td><strong>Sealing Method</strong></td>
<td>Thermal Bonding</td>
</tr>
</tbody>
</table>

### Extractables

EPS Mini-Capsule filters typically exhibit low levels of non-volatile residues and conform with USP <661>/<665>.

### TOC and Conductivity

EPS Mini-Capsule filter water effluent conforms with the TOC and water conductivity standards of SEMI Standard F104 (modified) and F63 after an appropriate flush with ultrapure water.

### Non-Fiber Releasing

The EPS Mini-Capsule filters comply with Title 21 CFR sections 211.72 and 210.3 (b)(6), for non-fiber releasing filters.
Flow rates for Mini-Capsule filters are per filter. The test fluid is water at ambient temperature. Flows are tested using a mini-capsule filter with ½” Sanitary inlet and outlet ports. Rates will vary based on end configuration of the mini-capsule.
EPS Mini-Capsule Filters Ordering Information

All Critical Process filters are configurable to meet customer specifications. Fill in the corresponding codes in the boxes below to build your Part Number.

To consult with one of our technical team members, request a quote or place an order: call (603) 880-4420 Ext. 106, or send an email to sales@criticalprocess.com

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Mini-Capsule Filters

- **MC**: Inlet Vent Port
- **EPS**: Inlet
- **N**: Pore Size Code
- **000**: Outlet
- **Outlet Vent Port**: Outlet

**Pore Size Code**
- -02 = 0.02 μm
- -03 = 0.03 μm
- -10 = 0.10 μm
- -20 = 0.22 μm
- -40 = 0.45 μm

**Inlet**
- 1 = 1/8” Hose Barb
- 2 = 1/4” Hose Barb
- 3 = 1/2” Hose Barb
- 4 = Luer Lock
- 5 = 1/2” Sanitary*
- 6 = 1/4” MNPT

**Inlet Vent Port**
- 1 = 1/8” Hose Barb
- 2 = 1/4” Hose Barb
- 3 = 1/2” Hose Barb
- 4 = Luer Lock
- 5 = 1/2” Sanitary*
- 6 = 1/4” MNPT

**Outlet**
- 1 = 1/8” Hose Barb
- 2 = 1/4” Hose Barb
- 3 = 1/2” Hose Barb
- 3B = 1/2” Hose Barb with Filling Bell
- 4 = Luer Lock
- 5 = 1/2” Sanitary*
- 6 = 1/4” MNPT

**Outlet Vent Port**
- 1 = 1/8” Hose Barb
- 2 = 1/4” Hose Barb
- 3 = 1/2” Hose Barb
- 4 = Luer Lock
- 6 = 1/4” MNPT

*When choosing the Sanitary Inlet/Outlet, the Luer Lock option is required for the Vent Port