EPS Filters provide a wide selection of single layer Polyethersulfone (PES) cartridge and capsule filters 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.

The hydrophilic EPS filters have low extractables for fast rinse-up to conductivity limits and fast rinse-down to TOC limits. EPS 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 Filter are recommended for:
- UPDI Water
- Acids & Bases
- Etch Baths
- Solvents
- Bulk Chemicals
- Plating Solutions

CARTRIDGES – Nominal Dimensions
Length: 5 to 40 in. (12.7 to 101.6 cm)
Outside Diameter: 2.75 in. (7.0 cm)

CAPSULES – Nominal Dimensions
Length: 2 to 30 in. (5.1 to 76.2 cm)
Outside Diameter: 3.50 in. (8.9 cm)
Maximum Operating Parameters

<table>
<thead>
<tr>
<th></th>
<th>CARTRIDGES</th>
<th>CAPSULES</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Liquid Operational Pressure</strong></td>
<td>N/A</td>
<td>80 psi at 68 °F (5.52 bard at 20 °C)</td>
</tr>
<tr>
<td><strong>Gases Operational Pressure</strong></td>
<td>N/A</td>
<td>60 psi at 68 °F (4.14 bar at 20 °C)</td>
</tr>
<tr>
<td><strong>Operating Temperature (water)</strong></td>
<td>180 °F at 30 psid (82 °C at 2.07 bard)</td>
<td>110 °F at 30 psid (43 °C at 2.07 bard)</td>
</tr>
<tr>
<td><strong>Forward Differential Pressure</strong></td>
<td>80 psi at 68 °F (5.52 bard at 20 °C) (Liquid and Gas)</td>
<td>50 psid at 68 °F (3.45 bard at 20 °C)</td>
</tr>
<tr>
<td><strong>Reverse Differential Pressure</strong></td>
<td>50 psi at 68 °F (3.45 bard at 20 °C)</td>
<td>50 psid at 68 °F (3.45 bard at 20 °C)</td>
</tr>
<tr>
<td><strong>Recommended Changeout Pressure</strong></td>
<td>35 psid (2.41 bard)</td>
<td>35 psid (2.41 bard)</td>
</tr>
</tbody>
</table>

Sanitization & Sterilization

<table>
<thead>
<tr>
<th>Method</th>
<th>Pressure/Temp</th>
<th>Cycles</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Filtered Hot Water</strong>*</td>
<td>90 °C (194 °F), 30 minutes, multiple cycles, max 3 psid forward flow</td>
<td>N/A</td>
<td></td>
</tr>
<tr>
<td><strong>Inline Steam</strong>*</td>
<td>275 °F (135 °C), 30 min, 25+ cycles</td>
<td>N/A</td>
<td></td>
</tr>
<tr>
<td><strong>Autoclave</strong>*</td>
<td>250 °F (121 °C), 30 min, 25+ cycles</td>
<td>250 °F (121 °C), 30 min, 25+ cycles</td>
<td></td>
</tr>
</tbody>
</table>

*Cartridge Filters – For all elevated temperature procedures above, a stainless-steel support ring is required.

Filtration Area (Nominal)

<table>
<thead>
<tr>
<th></th>
<th>CAPSULES</th>
<th>CARTRIDGES AND CAPSULES</th>
<th>CARTRIDGES</th>
</tr>
</thead>
<tbody>
<tr>
<td>Length</td>
<td>2”</td>
<td>5”</td>
<td>10”</td>
</tr>
<tr>
<td></td>
<td>5.08cm</td>
<td>12.7cm</td>
<td>25.4cm</td>
</tr>
<tr>
<td></td>
<td>1.2 ft²</td>
<td>3.4 ft²</td>
<td>7.3 ft²</td>
</tr>
<tr>
<td></td>
<td>0.11 m²</td>
<td>0.32 m²</td>
<td>0.68 m²</td>
</tr>
<tr>
<td>Area</td>
<td>2”</td>
<td>5”</td>
<td>10”</td>
</tr>
<tr>
<td></td>
<td>5.08cm</td>
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</tr>
</tbody>
</table>

Integrity Testing

<table>
<thead>
<tr>
<th>PORE SIZE</th>
<th>DIFFUSION TEST PRESSURE*</th>
<th>BUBBLE POINT MINIMUM*</th>
</tr>
</thead>
<tbody>
<tr>
<td>µm</td>
<td>PSIg BARG</td>
<td>PSIg BARG</td>
</tr>
<tr>
<td>0.02</td>
<td>60 4.14 **</td>
<td>**</td>
</tr>
<tr>
<td>0.03</td>
<td>60 4.14 **</td>
<td>**</td>
</tr>
<tr>
<td>0.10</td>
<td>48 3.31 **</td>
<td>**</td>
</tr>
<tr>
<td>0.22</td>
<td>35 2.41 50</td>
<td>3.4</td>
</tr>
<tr>
<td>0.45</td>
<td>20 1.38 25</td>
<td>1.7</td>
</tr>
</tbody>
</table>

DIFFUSION SPECIFICATIONS*

<table>
<thead>
<tr>
<th>Length</th>
<th>2”</th>
<th>5”</th>
<th>10”</th>
<th>20”</th>
<th>30”</th>
<th>40”</th>
</tr>
</thead>
<tbody>
<tr>
<td>mL/min</td>
<td>≤ 3.6</td>
<td>≤ 10.8</td>
<td>≤ 25</td>
<td>≤ 50</td>
<td>≤ 75</td>
<td>≤ 100</td>
</tr>
<tr>
<td>mL/min (0.02 µm)</td>
<td>≤ 4.3</td>
<td>≤ 12.9</td>
<td>≤ 30</td>
<td>≤ 60</td>
<td>≤ 90</td>
<td>≤ 120</td>
</tr>
</tbody>
</table>

Extractables

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

TOC and Conductivity

EPS 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 filters comply with Title 21 CFR sections 211.72 and 210.3 (b)(6), for non-fiber releasing filters.
Flow rates for Cartridge filters are per 10-inch length. The test fluid is water at ambient temperature.

Flow rates for Capsule filters are tested using a 2” capsule filter with 1” sanitary inlet and outlet ports. The test fluid is water at ambient temperature. Flow rates for larger capsules will scale with filtration area. Rates will vary based on end configuration of the capsule.
EPS Filters Ordering Information

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 or contact us here.

Cartridge Filters

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

**SS Ring**
S = Ring  
N = No Ring

**Length**
-05 = 5 in. (12.7 cm)  
-97 = 9.75 in. (24.8 cm)  
-01 = 10 in. (25.4 cm)  
-02 = 20 in. (50.8 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/Plug  
21 = 2-223 O-ring/Plug  
22 = 2-223 O-ring/Plug  
23 = 2-222 O-ring 3 Tab/Flat  
24 = 2-222 O-ring 3 Tab/Spear  
25 = Short 2-222/Plug

**Capsule Filters**

**Pre-Sterilized or Not**
S = Pre-Sterilized  
G = Gamma Stable  
N = Not Sterilized

**Length**
A = 2”  
B = 5”  
1 = 10”  
2 = 20”  
3 = 30”

**Inlet**
A = 1/4” Female NPT  
B = 1/4” Male NPT  
C = 3/8” Female NPT  
D = 1/2” Female NPT  
E = 1/2” Male NPT  
F = 1” Sanitary  
G = Hose Barb*  
H = 1 ½” Sanitary with side vent  
I = ½” Single Stepped Barb with side vent

**Outlet**
A = 1/4” Female NPT  
B = 1/4” Male NPT  
C = 3/8” Female NPT  
D = 1/2” Female NPT  
E = 1/2” Male NPT  
F = 1” Sanitary  
G = Hose Barb*  
H = 1 ½” Sanitary with side vent  
I = ½” Single Stepped Barb with side vent  
IB = ½” Single Stepped Barb with filling bell and side vent

**Side Vent Options**
1 = Luer Lock  
2 = Bleed Valve

**O-Rings**
(Spear Valve Only)
S = Silicone  
E = EP  
V = Viton  
B = Buna  
K = FFKM

*Additional End Configurations Available

*Fits hoses/tubes with inner diameter 11/32 to 9/16 inches