

## FPS Mini-Capsule Filters

Single Layer PES Membrane



FPS Mini Capsule filters consist of a validated, single layer Polyethersulfone (PES) membrane and are used for the sterilizing of aqueous liquids. FPS Mini Capsules have been designed to comply with all FDA requirements for the food industry. Pore sizes range from 0.03 to 1.2  $\mu\text{m}$  and the filter sizes scale from laboratory to full production using identical materials to ensure consistent results.

The FPS Mini Capsule filters have low protein binding characteristics making them a good choice for fermented beverage filtration. These filters provide maximum throughput and handle cleaning and sanitization protocols well.

These products are 100% integrity tested. FPS Mini Capsule filters are flushed to remove manufacturing debris and reduce extractables.

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.

### Bacteria/Yeast/Mold Removal

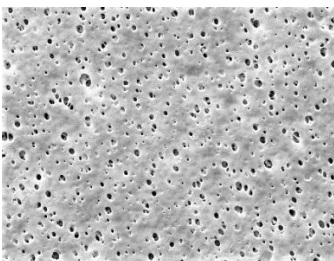


#### MINI-CAPSULES – Nominal Dimensions

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)



FPS Mini Capsule filters are recommended for:

- Wine
- Beer
- Clear Juices
- Aseptically Packaged Liquids
- Bottled Water
- Process Water

## Maximum Operating Parameters

	MINI-CAPSULES
<b>Liquid Operational Pressure</b>	80 psi at 68 °F (5.52 bard at 20 °C)
<b>Gases Operational Pressure</b>	60 psi at 68 °F (4.14 bar at 20 °C)
<b>Operating Temperature (water)</b>	110 °F at 30 psid (43 °C at 2.07 bard)
<b>Forward Differential Pressure</b>	50 psid at 68 °F (3.45 bard at 20 °C)
<b>Reverse Differential Pressure</b>	40 psid at 68 °F (2.76 bard at 20 °C)
<b>Recommended Changeout Pressure</b>	35 psid (2.41 bard)

## Sanitization & Sterilization\*

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

## Filtration Area

	Single Layer
Area	0.50 ft <sup>2</sup>
	468 cm <sup>2</sup>

## Integrity Testing

PORE SIZE	BUBBLE POINT MINIMUM*	
	PSIG	BARG
μm		
0.03	**	**
0.10	**	**
0.22	50	3.4
0.45	25	1.7
0.65	19	1.3
0.80	15	1.0
1.0	10	0.7
1.2	8	0.6

\* For water wetted membrane

\*\* Test pressure exceeds operational limits of mini-capsule filters.

## Construction Materials

<b>Filtration Media</b>	Asymmetric PES membrane
<b>Media Support</b>	Polypropylene
<b>End Caps, Center Core, Outer Support Cage, Mini-Capsule Housing</b>	Polypropylene
<b>Sealing Method</b>	Thermal Bonding

### Validation

FPS Mini Capsule filters are validated using test procedures that comply with ASTM F 838-15(ae1) protocols for the determination of bacterial retention in filters used for liquid filtration. The filters are challenged with the organisms listed below.

- 0.03µm: *Acholeplasma laidlawii*
- 0.10µm: *Brevundimonas diminuta*
- 0.22µm: *Brevundimonas diminuta*
- 0.45µm: *Serratia marcescens*
- 0.65µm: *Saccharomyces cerevisiae*

Validation Guides available upon request.

### Extractables

FPS Mini Capsule filters typically exhibit low levels of non-volatile residues.

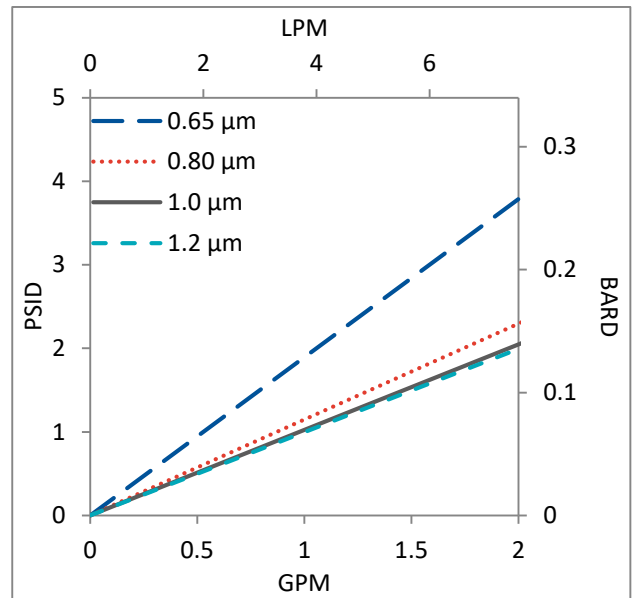
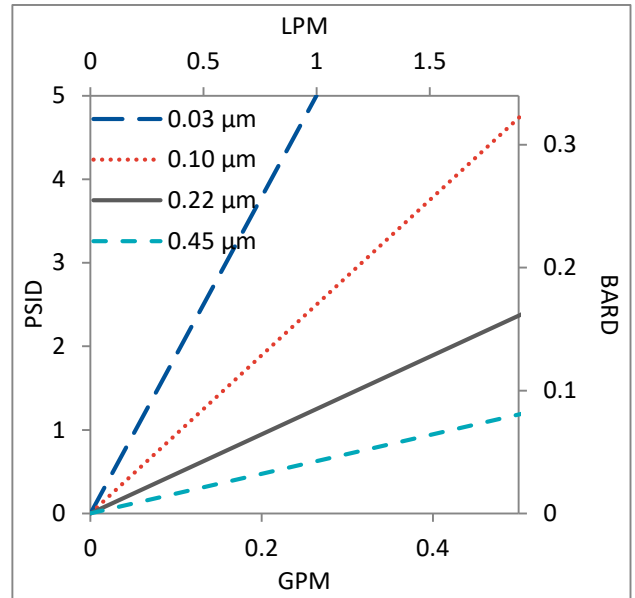
### Non-Fiber Releasing

The FPS Mini Capsule filters comply with Title 21 CFR sections 210.3 (b)(6) and 211.72, for non-fiber releasing filters.

### FDA and EC Compliance

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 applicable. All materials used to make the filters are listed in European Commission Regulation EU/10/2011, Annex 1.

### Flow Rates for FPS Mini-Capsules by Pore Size



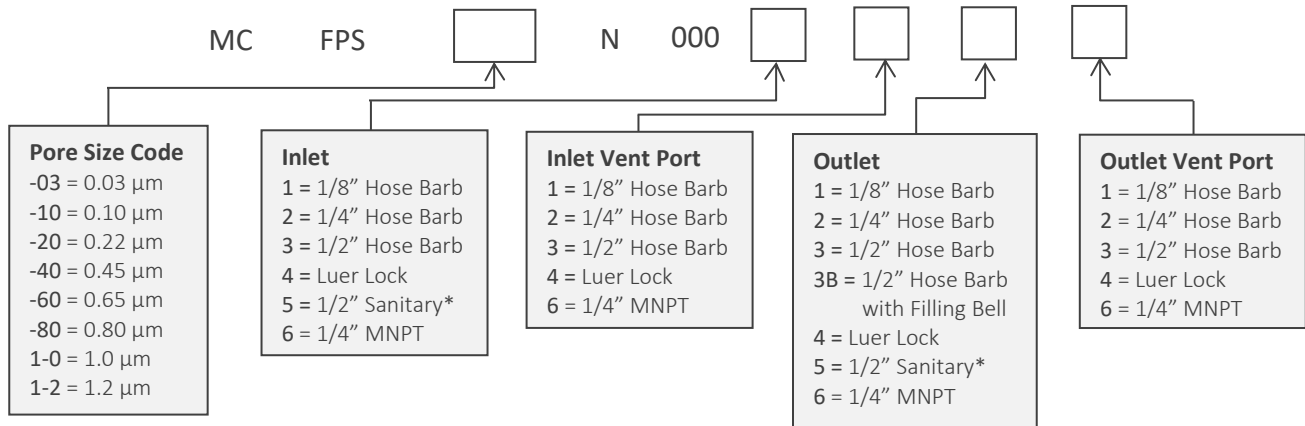
Flow rates for Mini-Capsule filters are per filter. The test fluid is water at ambient temperature. Flows are tested using a mini-capsule filter with 1/2" Sanitary inlet and outlet ports. Rates will vary based on end configuration of the mini-capsule.

## FPS 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) 880-4220 Ext. 106, or send an email to [sales@criticalprocess.com](mailto:sales@criticalprocess.com)

### Mini-Capsule Filters



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



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