PTM Micro Capsule Filters

PTFE Membrane

PTM Micro Capsule filters consist of a Polytetrafluoroethylene (PTFE) membrane and is validated for sterilizing the most stringent gas filtration applications and non-aqueous liquids. Pore sizes range from 0.10 to 5.0 µm. Additional filter devices scale from laboratory to full production using identical materials to ensure consistent results.

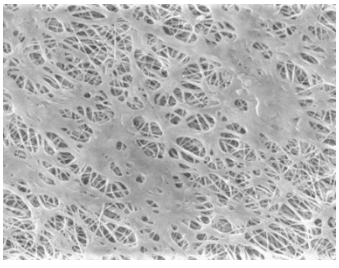
The hydrophobic PTM Micro Capsule filters resist wetting by airborne water droplets, making them ideal for air and gas applications. The broad chemical compatibility of these PTFE-based filters makes them well suited for aggressive solvents and other non-aqueous liquids. Each cartridge module is individually tested using the water intrusion method before it is released from manufacture.

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.

Sterilizing Filters

Tank Vent & Process Gas

MICRO CAPSULES – Nominal Dimensions
Body Length: 1.9 in. (4.8 cm)
Overall Length: 2.8 to 3.8 in. (7.1 to 9.7 cm)
Outside Diameter: 2.6 in. (6.6 cm)



PTM Micro Capsule filters are recommended for:

- Compressed Air
- Pressurized Gases
- Fermentation Air
- Solvents

Maximum Operating Parameters

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

Sanitization & Sterilization

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

Integrity Testing

PORE SIZE	BUBBLE POINT MINIMUM*	
µm	PSIG	BARG
0.10	22	1.52
0.22	18	1.24
0.45	9	0.62
1.0	6	0.41
3.0	2	0.14
5.0	1	0.07

* Bubble Point for membrane wetted with 60% IPA / 40% water solution.

Filtration Area (Nominal)

Area	0.51 ft^2
	474 cm^2

Construction Materials

Filtration Media	PTFE Membrane
Media Support	Polypropylene
End Caps, Center Core, Outer Support Cage, Micro Capsule Housing	Polypropylene
Sealing Method	Thermal Bonding

Validation

PTM Micro 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 challenge level is a minimum of 10^7 organisms per cm^2 of filter media. CPF filters have > 7-log removal when challenged with the organisms listed below (0.10µm and 0.22µm meet the FDA definition of sterilizing grade filters).

0.10µm: *Brevundimonas diminuta*
0.22µm: *Brevundimonas diminuta*
0.45µm: *Serratia marcescens*

Validation Guides available upon request.

Endotoxins

The levels of bacterial endotoxins in aqueous extracts from PTM Micro Capsule filters are below current USP limits as specified for water for injection.

Extractables

PTM Micro Capsule filters typically exhibit low levels of non-volatile residues.

Toxicity Compliance

Materials used to construct the PTM Micro Capsule filters are non-toxic and meet the requirements for the MEM Elution Cytotoxicity Test and the requirements for Biological Reactivity Tests in the current version of the United States Pharmacopeia (USP) for Class VI - 121 °C Plastics.

Non-Fiber Releasing

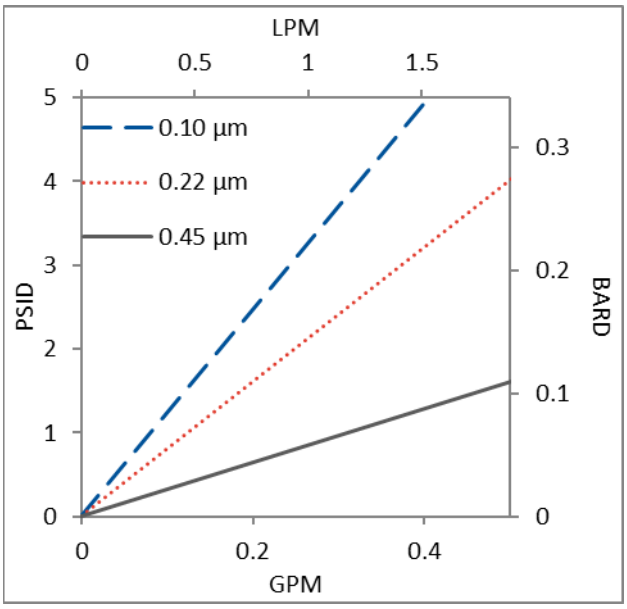
PTM Micro Capsule filters comply with Title 21 CFR sections 210.3 (b)(6) and 211.72, for non-fiber releasing filters.

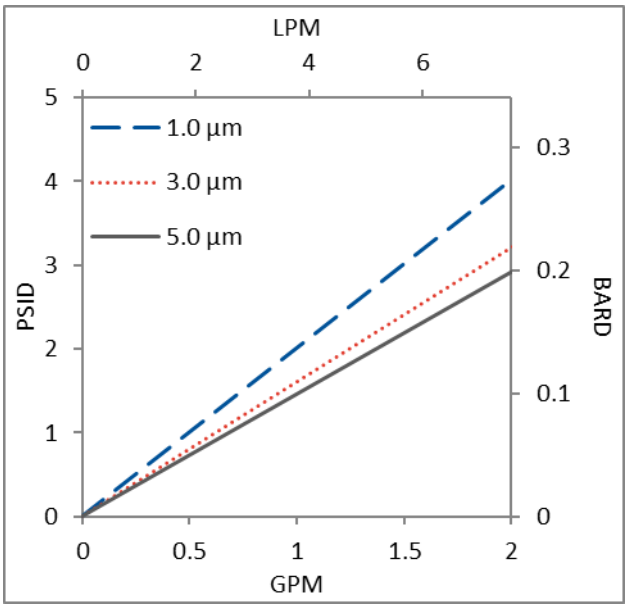
FDA Compliance

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.

Flow Rates for PTM Micro Capsules by Pore Size

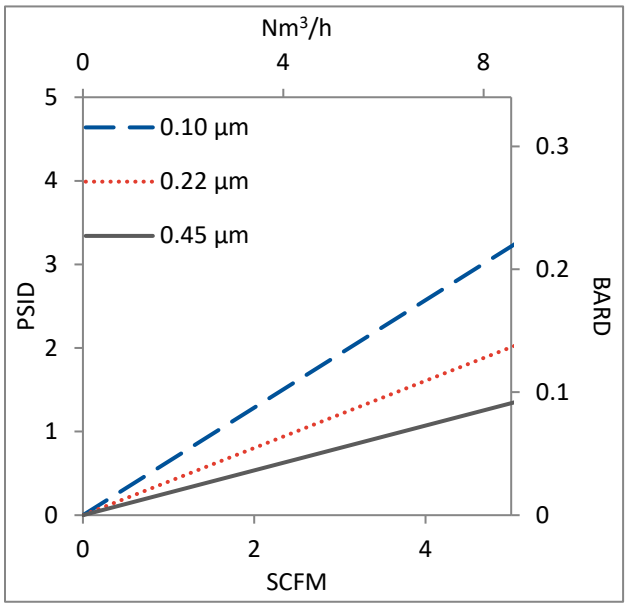
Water

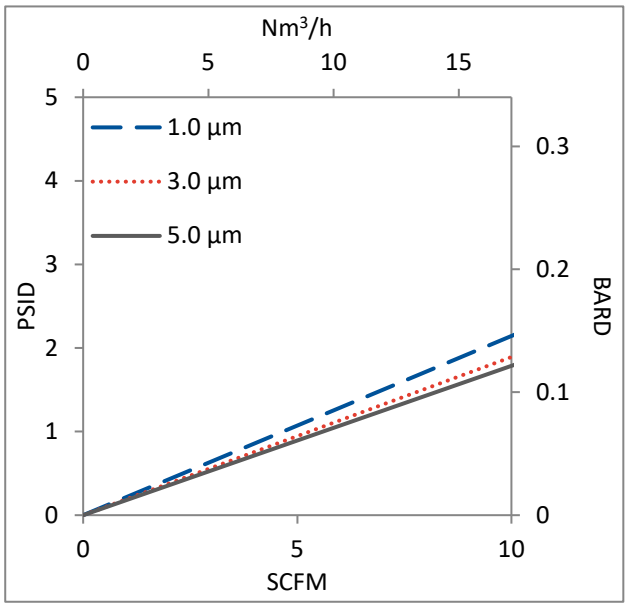




Flow rates for Micro Capsule filters are per filter. The test fluid is water at ambient temperature. Flows are tested using a Micro capsule filter with ½" Sanitary inlet and outlet ports. Rates will vary based on end configuration of the Micro capsule.

Air





Flow rates for Micro Capsule filters are per filter. The test fluid is compressed air at ambient temperature. Flows are tested using a Micro capsule filter with ½" Sanitary inlet and outlet ports. Rates will vary based on end configuration of the Micro capsule.

PTM Micro 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

Micro Capsule Filters

MIC PTM [ ] N 000 [ ] [ ] [ ] [ ] – [ ]

Pore Size Code
-10 = 0.10 µm
-20 = 0.22 µm
-40 = 0.45 µm
1-0 = 1.0 µm
3-0 = 3.0 µm
5-0 = 5.0 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
6 = 1/4" MNPT
7 = Side Bleed Valve

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
7 = Side Bleed Valve

Side Vent O-Ring**
B = Buna
E = EP
S = Silicone
V = Viton (or FKM)
K = FFKM

*When choosing the Sanitary Inlet/Outlet, the Luer Lock or bleed valve option is required for the Vent Port
** O-Ring is only available on Bleed Valve

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Data Sheet PTM Micro DS Rev -