CRITICAL PROCESS FILTRATION, INC.

EPM Filters

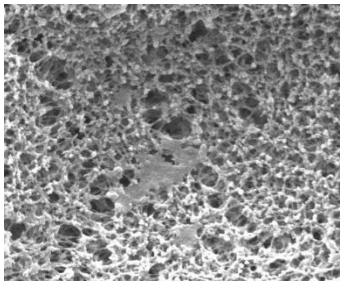
Polypropylene Membrane

EPM cartridge and capsule filters are made with a hydrophobic polypropylene membrane designed for gas and non-aqueous liquid filtration used in electronics manufacturing. Pore sizes range are 0.10 and 0.22 µm and the filter sizes scale from laboratory to full production using identical materials to ensure consistent results.

The hydrophobic EPM filters resist wetting by airborne water droplets, making them ideal for air and gas applications. The broad chemical compatibility of the filters makes them well suited for aggressive chemistries and other non-aqueous liquids.

EPM 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.



EPM filters are recommended for:

- Etchants
- Acids & Bases
- Process Gases/Air
- Tank Vents
- Non-aqueous Solutions
- Solvents

Particle Filtration

Tank Vent & Process Gas

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

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

	CARTRIDGES	CAPSULES
Liquid Operational Pressure	N/A	80 psi at 68 °F (5.51 bard at 20 °C)
Gases Operational Pressure	N/A	60 psi at 68 °F (4.13 bar at 20 °C)
Operating Temperature (water)	180 °F at 30 psid (82 °C at 2.06 bard)	110 °F at 30 psid (43 °C at 2.06 bard)
Forward Differential Pressure	80 psid at 68 °F (5.51 bard at 20 °C) (Liquid and Gas)	Liquid - 80 psid at 68 °F (5.51 bard at 20 °C) Gas - 60 psi at 68 °F (4.13 bar at 20 °C)
Reverse Differential Pressure	50 psid at 68 °F (3.44 bard at 20 °C)	50 psid at 68 °F (3.44 bard at 20 °C)
Recommended Changeout Pressure	35 psid (2.41 bard)	35 psid (2.41 bard)

Sanitization & Sterilization

Filtered Hot Water*	90 °C (194 °F), 30 minutes, multiple cycles, max 3 psid forward flow	N/A
Inline Steam*	275 °F (135 °C), 30 min, 25+ cycles	N/A
Autoclave*	250 °F (121 °C), 30 min, 25+ cycles	250 °F (121 °C), 30 min, 25+ cycles
Chemical Sanitization	Performed using industry standard concentrations of hydrogen peroxide, peracetic acid, sodium hypochlorite and other selected chemicals.	

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

Filtration Area

	CAPSULES	CARTRIDGES AND CAPSULES				CARTRIDGES
Length	2”	5”	10”	20”	30”	40”
	5.08cm	12.7cm	25.4cm	50.8cm	76.2cm	101.6cm
Area	1.2 ft^2	3.4 ft^2	7.3 ft^2	14.6 ft^2	21.9 ft^2	29.2 ft^2
	0.11m^2	0.32m^2	0.68m^2	1.36m^2	2.04m^2	2.72m^2

Integrity Testing

PORE SIZE (µm)	AIR DIFFUSION RATE *
0.10	< 30 cc/min @40 psig (2.8 barg)
0.22	< 30 cc/min @ 35 psig (2.4 barg)

* For membrane wetted with 60% IPA / 40% water solution.

Extractables

EPM filters typically exhibit low levels of non-volatile residues.

TOC and Conductivity

EPM filter water effluent conforms with the TOC and water conductivity standards of SEMI Standard F63 after an appropriate flush with ultrapure water.

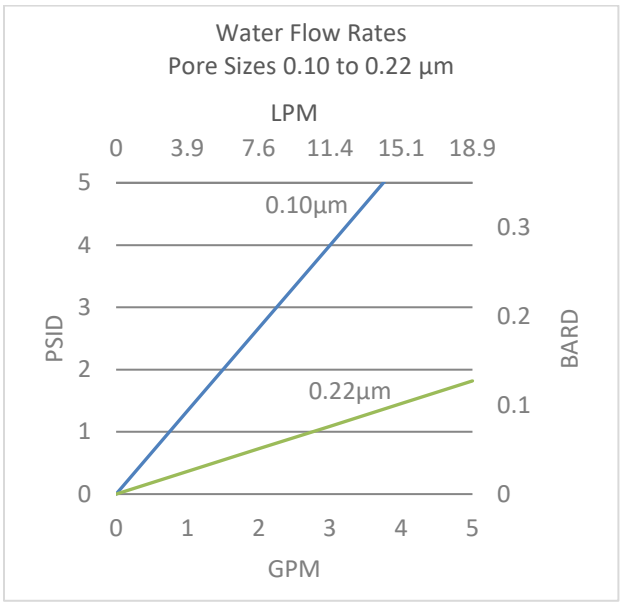
Non-Fiber Releasing

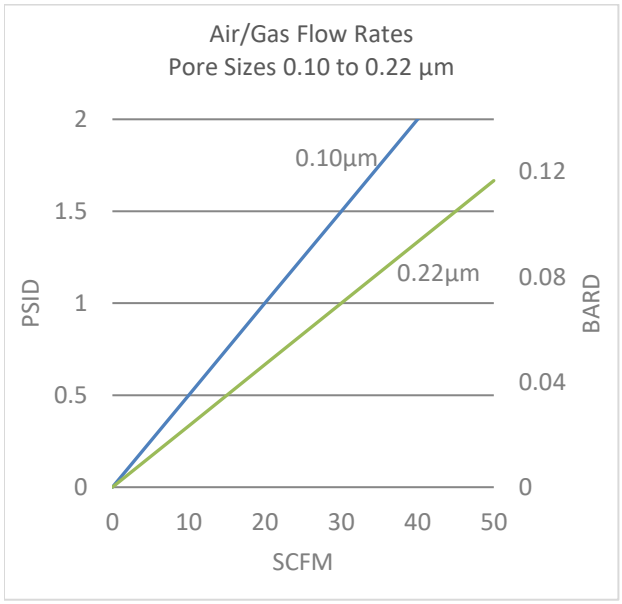
EPM filters comply with Title 21 CFR sections 210.3 (b)(6) and 211.72, for non-fiber releasing filters.

Construction Materials

Filtration Media	Polypropylene Membrane
Media Support	Polypropylene
End Caps, Center Core, Outer Support Cage, Capsule Housing	Polypropylene
Sealing Method	Thermal Bonding
O-Rings/Gaskets Cartridges only	Buna, Viton® (or FKM), EPDM, Silicone, FEP Encapsulated Silicone, FEP Encapsulated Viton (or FKM)

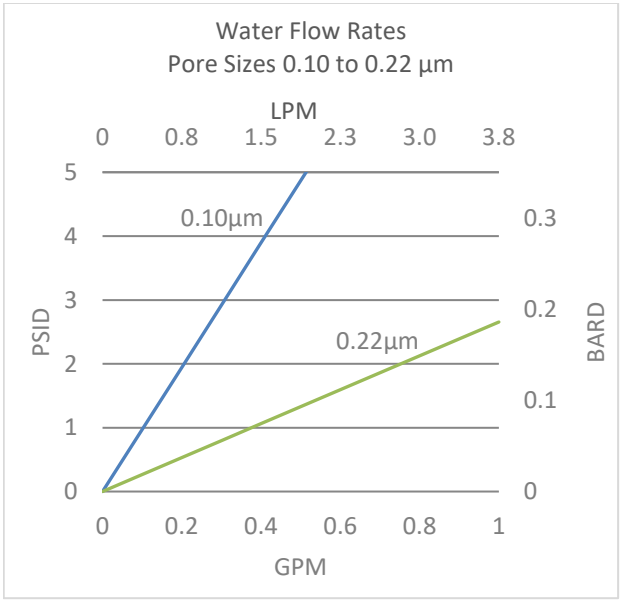
Flow Rates for EPM Cartridges

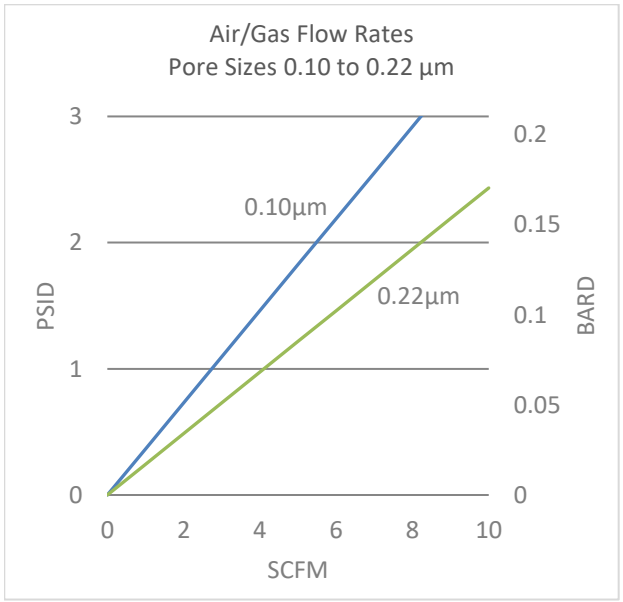




Flow rates for Cartridge filters are per 10-inch length. The test fluid is water or compressed air at ambient temperature.

Flow Rates for EPM Capsules





Flow rates for Capsule filters are per square foot of membrane area. The test fluid is water or compressed air at ambient temperature. Flows are tested using a 2" capsule filter with ½" FNPT inlet and outlet ports. Rates will vary based on end configuration of the capsule.

EPM 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

Cartridge Filters

EPM [ ] [ ] 000 [ ] [ ] [ ]

Pore Size Code
-10 = 0.1 µm
-20 = 0.22 µm

304 SS Ring
S = Ring
N = No Ring

Length
05 = 4.875 in. (12.4 cm)
97 = 9.75 in. (24.8 cm)
01 = 10 in. (25.4 cm)
19 = 19.5 in. (49.5 cm)
02 = 20 in. (50.8 cm)
29 = 29.25 in. (74.3 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 = EPDM
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/Spear
21 = 2-223 O-ring/Flat
22 = 2-223 O-ring/Spear
23 = 2-222 O-ring 3 Tab/Flat
24 = 2-222 O-ring 3 Tab/Spear
25 = Short 2-222/Plug

Capsule Filters

CP EPM [ ] N 000 [ ] [ ] [ ]

Pore Size Code
-10 = 0.1 µm
-20 = 0.22 µm

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”-1½” Sanitary
G - Hose Barb*

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”-1½” Sanitary
G - Hose Barb*

Housings

CPF offers Model CSH sanitary housings in Single-Round (Inline and T-Style) and Multi-Round (3, 6, 8, 12 and 21-round) configurations.

CRITICAL PROCESS FILTRATION, INC.

One Chestnut Street
Nashua, NH 03060
603.880.4420
FAX: 603.880.4536

CriticalProcess.com

Data Sheet EPMDS0919 Rev-