

PTM/HT Filters

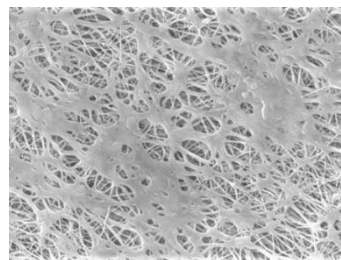
High Temperature PTFE Membrane



PTM/HT cartridge filters are made with Polytetrafluoroethylene (PTFE) membrane and high temperature polypropylene for cartridge hardware and membrane support. The filters are validated for sterilizing in elevated temperature gas and non-aqueous liquid applications (up to 221°F). Pore sizes range from 0.10 to 1.0 μm .

The hydrophobic PTM/HT filters resist wetting by airborne water droplets, making them ideal for air and gas applications. The broad chemical compatibility of the PTM 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.



PTM/HT sterilizing filters are recommended for:

- Compressed Air
- Pressurized Gases
- Fermentation Air
- Solvents

Sterilizing Filters

Tank Vent & Process Gas



CARTRIDGES – Nominal Dimensions

Length: 5 to 40 in. (12.7 to 101.6 cm)

Outside Diameter: 2.75 in. (7.0 cm)

Maximum Operating Parameters

CARTRIDGES	
Operating Temperature (air/gas)	221 °F (105 °C)
Forward Differential Pressure	80 psid at 68 °F (5.52 bard at 20 °C) (Liquid and Gas)
Reverse Differential Pressure	50 psid at 68 °F (3.45 bard at 20 °C)

Sanitization & Sterilization

Filtered Hot Water*	90 °C (194 °F), 30 minutes, multiple cycles, max 3 psid forward flow
Inline Steam*	275 °F (135 °C), 30 min, 25+ cycles
Autoclave*	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.

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

Filtration Area (Nominal)

CARTRIDGES					
Length	5"	10"	20"	30"	40"
	12.7cm	25.4cm	50.8cm	76.2cm	101.6cm
Area	3.8 ft ²	8.2 ft ²	16.4 ft ²	24.6 ft ²	32.8 ft ²
	0.36m ²	0.76m ²	1.52m ²	2.29m ²	3.05m ²

Integrity Testing

PORE SIZE	WATER INTRUSION TEST PRESSURE		BUBBLE POINT MINIMUM*	
	PSIG	BARG	PSIG	BARG
μm				
0.10	35	2.41	22	1.52
0.22	35	2.41	18	1.24
0.45	N/A	N/A	9	0.62
1.0	N/A	N/A	6	0.41

WATER INTRUSION SPECIFICATIONS (mL/10 min)					
Length	5"	10"	20"	30"	40"
0.10μm	≤ 4.3	≤ 10	≤ 20	≤ 30	≤ 40
0.22μm	≤ 5.6	≤ 13	≤ 26	≤ 39	≤ 52

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

Construction Materials

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

Validation

PTM/HT 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 (0.10 μm and 0.22 μm meet the FDA definition of sterilizing grade filters).

0.10 μm : *Brevundimonas diminuta*

0.22 μm : *Brevundimonas diminuta*

0.45 μm : *Serratia marcescens*

Validation Guides available upon request.

Endotoxins

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

Extractables

PTM/HT filters typically exhibit low levels of non-volatile residues.

Toxicity Compliance

Materials used to construct the PTM/HT 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.

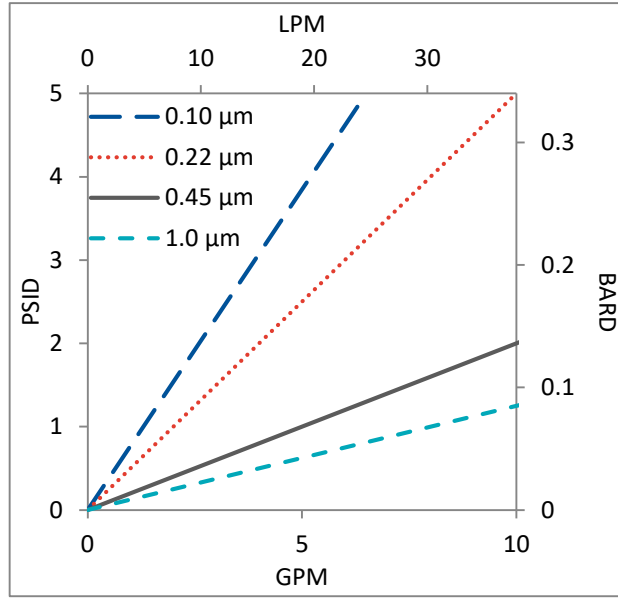
Non-Fiber Releasing

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

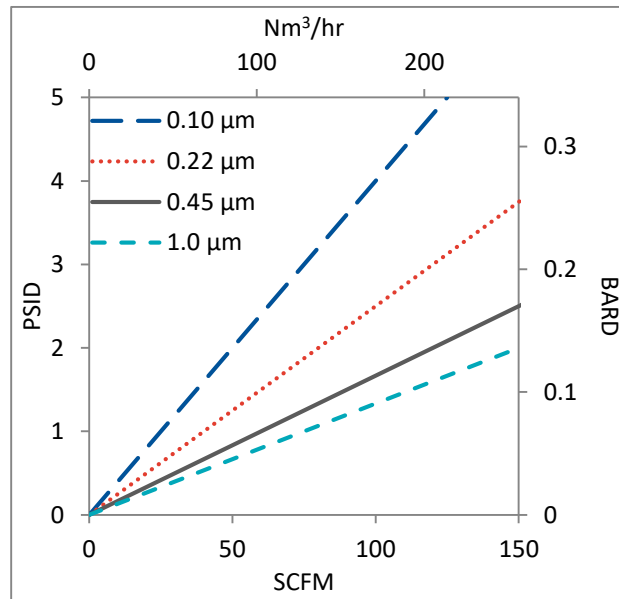
FDA Compliance

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.

Water Flow Rates for PTM/HT Cartridges by Pore Size



Air/Gas Flow Rates for PTM/HT Cartridges by Pore Size



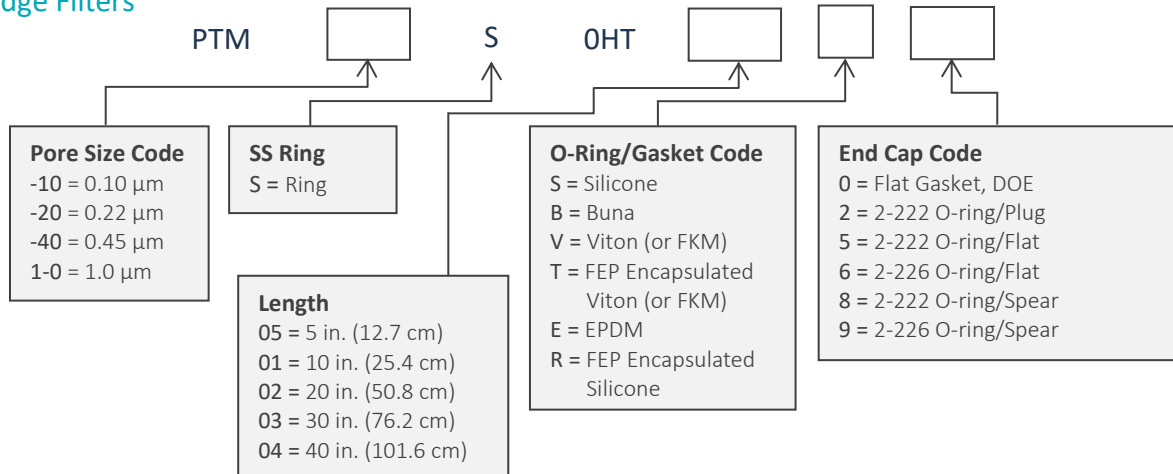
Flow rates for Cartridge filters are per 10-inch length. The test fluid is water or air at ambient temperature.

PTM/HT 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.

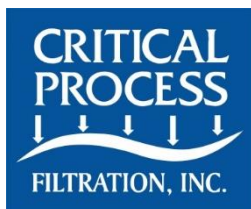
To consult with one of our technical team members, request a quote or place an order:
call (603) 880-4220 Ext. 106, or send an email to sales@criticalprocess.com

Cartridge Filters



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.



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