CRITICAL PROCESS FILTRATION, INC.

PTR/HT Filters

High Temperature PTFE Membrane

PTR/HT filters are validated Polytetrafluoroethylene (PTFE) membrane cartridge filters assembled with high temperature polypropylene components. They are used for sterilizing in process gas applications and tank vents operated at elevated temperatures (up to 221°F). The PTR/HT membrane has a pore size of 0.22 µm.

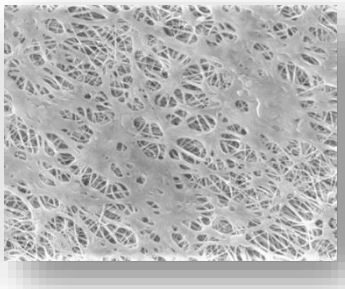
These hydrophobic PTR/HT filters have high air flow and low pressure drops. Each cartridge module is individually integrity tested using the water intrusion method before it is released from manufacture.

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

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



PTR/HT filters are recommended for:

- Tank Vents
- Compressed Air
- Pressurized Gases
- Fermentation Air

Operated at elevated temperatures

Maximum Operating Parameters

	CARTRIDGES
Operating Temperature	221 °F (105 °C)
Forward Differential Pressure	80 psid at 68 °F (5.52 bard at 20 °C)
Reverse Differential Pressure	50 psid at 68 °F (3.45 bard at 20 °C)
Recommended Maximum Service Life	1 Year

Sanitization & Sterilization

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.

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

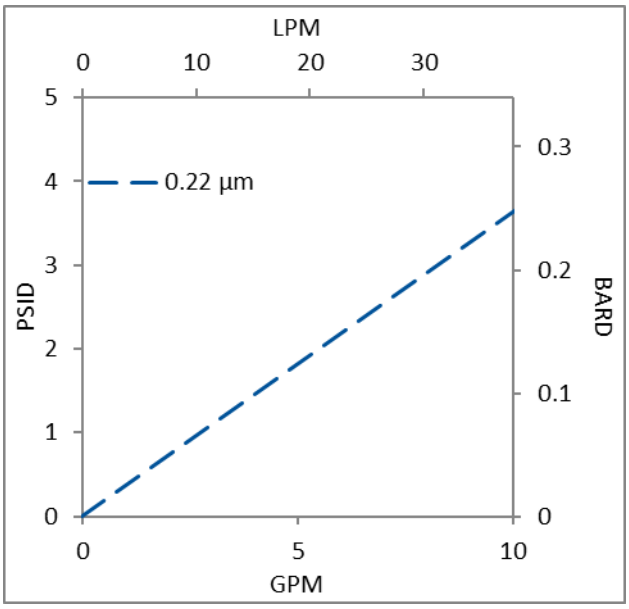
PORE SIZE	WATER INTRUSION TEST PRESSURE		BUBBLE POINT MINIMUM*	
µm	PSIG	BARG	PSIG	BARG
0.22	35	2.41	18	1.24

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

WATER INTRUSION SPECIFICATIONS (mL/10 min)

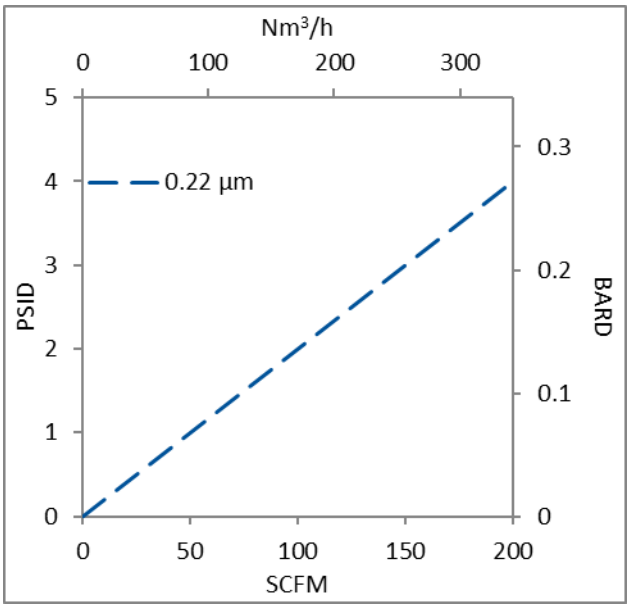
Length	5”	10”	20”	30”	40”
0.22µm	≤ 5.6	≤ 13	≤ 26	≤ 39	≤ 52

Water Flow Rates for PTR/HT Cartridges by Pore Size



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

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



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

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

PTR/HT cartridges are validated using test procedures that comply with the intent of BFE protocols for the determination of bacterial retention in filters used for air and gas filtration. The challenge level for the 0.22 µm filter membrane is 7.5 x 10^7 organisms per cm^2 of filter media of Brevundimonas diminuta (ATCC 19146).

PTR/HT filters are also 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 *Brevundimonas diminuta* organisms per cm^2 of filter media. CPF filters have > 7-log removal when challenged with the *Brevundimonas diminuta* (0.22µm meets the FDA definition of sterilizing grade filters).

Validation Guides available upon request.

Endotoxins

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

Extractables

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

TOC and Conductivity

The PTR/HT filters conform with TOC standards of USP <643> and the water conductivity standards of USP <645> after an appropriate flush with purified water.

Toxicity Compliance

Materials used to construct the PTR/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

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

FDA Compliance

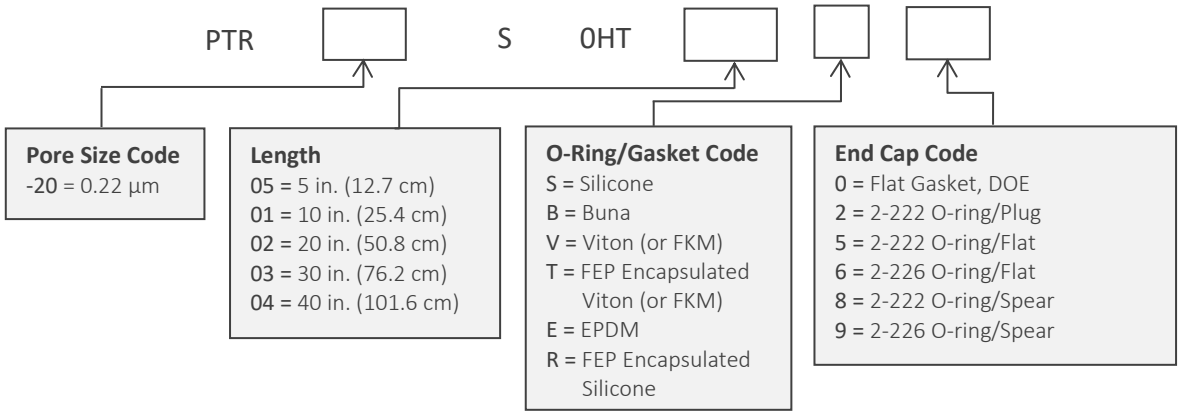
Materials meet the requirements listed by the FDA as appropriate for use in articles intended for repeated food contact as specified in Title 21 CFR sections 174.5, 177.1500, 177.1520, 177.1630, 177.2440, and 177.2600 as applicable.

PTR/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) 880-4420 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.

CRITICAL PROCESS FILTRATION, INC.

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Data Sheet PTRHTDS Rev-