

# PPD Filters

Pleated Polypropylene Depth Media



PPD cartridge and capsule filters are constructed with pleated Polypropylene depth media for prefiltering critical pharmaceutical and healthcare liquids including water, chemicals and solvents. Pore sizes range from 0.10 to 100  $\mu\text{m}$  and filter sizes scale from laboratory to full production using identical materials to ensure consistent results.

These hydrophilic filters have superior retention and protect downstream filters by removing large amounts of particulate and other contaminants. PPD filters are rated at 99.9% efficiencies at the indicated pore size. Designed for high capacity and long life makes the PPD a very cost-effective filter.

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.

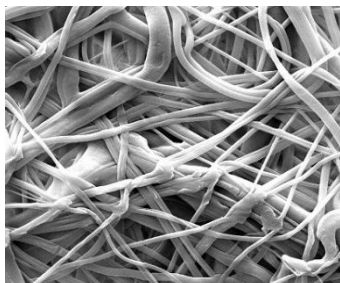
## Clarification & Prefiltration

### Particle Filtration



#### CARTRIDGES – Nominal Dimensions

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



PPD filters are recommended for clarification & prefiltration in:

- Chemicals
- Intermediates
- Buffers
- WFI, Water Purification
- Medications
- Ophthalmics
- Diagnostics
- Device Cleaning



#### 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
<b>Liquid Operational Pressure</b>	N/A	80 psi at 68 °F (5.52 bard at 20 °C)
<b>Gases Operational Pressure</b>	N/A	60 psi at 68 °F (4.14 bar at 20 °C)
<b>Operating Temperature (water)</b>	180 °F at 30 psid (82 °C at 2.07 bard)	110 °F at 30 psid (43 °C at 2.07 bard)
<b>Forward Differential Pressure</b>	80 psid at 68 °F (5.52 bard at 20 °C) (Liquid and Gas)	Liquid - 80 psid at 68 °F (5.52 bard at 20 °C) Gas - 60 psi at 68 °F (4.14 bar at 20 °C)
<b>Reverse Differential Pressure</b>	50 psid at 68 °F (3.45 bard at 20 °C)	50 psid at 68 °F (3.45 bard at 20 °C)
<b>Recommended Changeout Pressure</b>	35 psid (2.41 bard)	35 psid (2.41 bard)

## Sanitization & Sterilization

<b>Filtered Hot Water*</b>	90 °C (194 °F), 30 minutes, multiple cycles, max 3 psid forward flow	N/A
<b>Inline Steam*</b>	275 °F (135 °C), 30 min, 25+ cycles	N/A
<b>Autoclave*</b>	250 °F (121 °C), 30 min, 25+ cycles	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.	

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

## Filtration Area (Nominal)

	CAPSULES	CARTRIDGES AND CAPSULES				CARTRIDGES
	2"	5"	10"	20"	30"	40"
Length	5.08cm	12.7cm	25.4cm	50.8cm	76.2cm	101.6cm
Area	1.1 ft <sup>2</sup>	2.9 ft <sup>2</sup>	6.24 ft <sup>2</sup>	12.48 ft <sup>2</sup>	18.72 ft <sup>2</sup>	24.96 ft <sup>2</sup>
	0.10m <sup>2</sup>	0.27m <sup>2</sup>	0.58m <sup>2</sup>	1.16m <sup>2</sup>	1.74m <sup>2</sup>	2.32m <sup>2</sup>

## Construction Materials

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

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

## Extractables

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

## TOC and Conductivity

PPD 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 PPD 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.

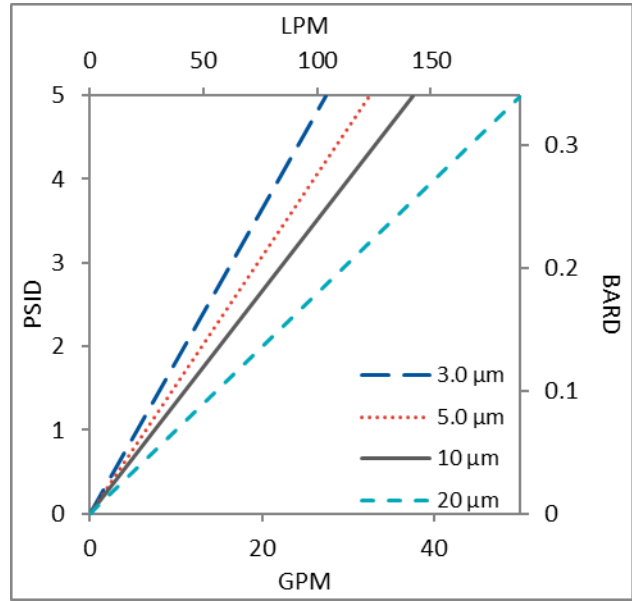
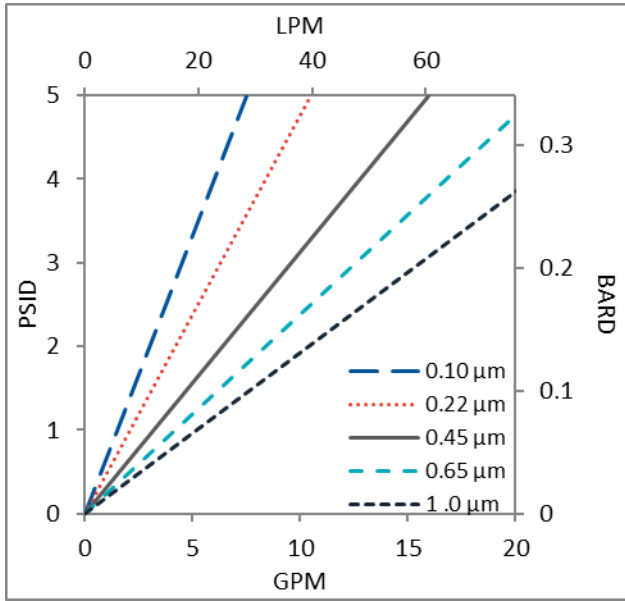
## Non-Fiber Releasing

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

## FDA Compliance

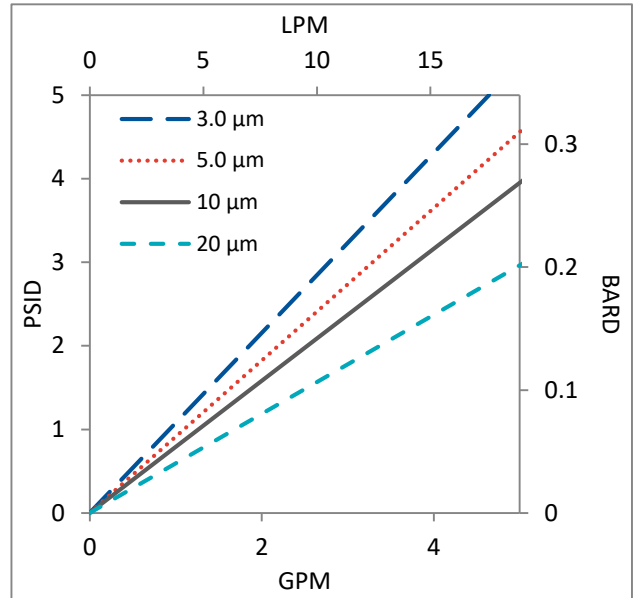
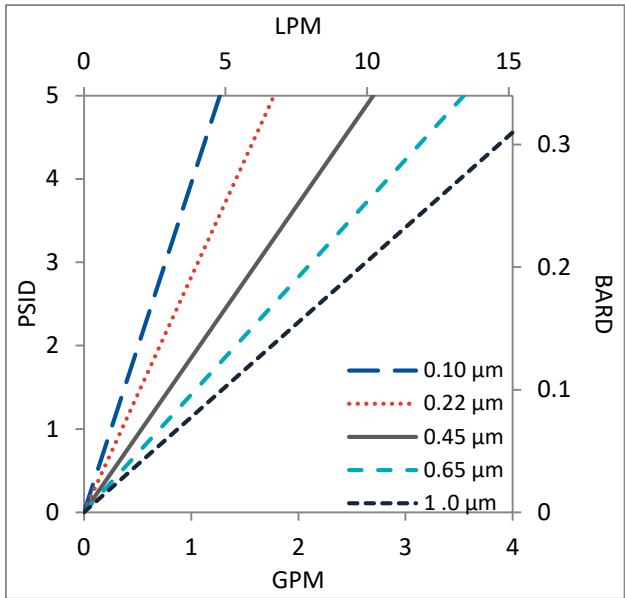
Materials meet the requirements listed by the FDA as appropriate for use in articles intended for repeated food contact as specified in Title 21 CFR sections 174.5, 177.1500, 177.1520, 177.1630, 177.2440, and 177.2600 as applicable.

## Flow Rates for PPD Cartridges by Pore Size



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

## Flow Rates for PPD Capsules by Pore Size



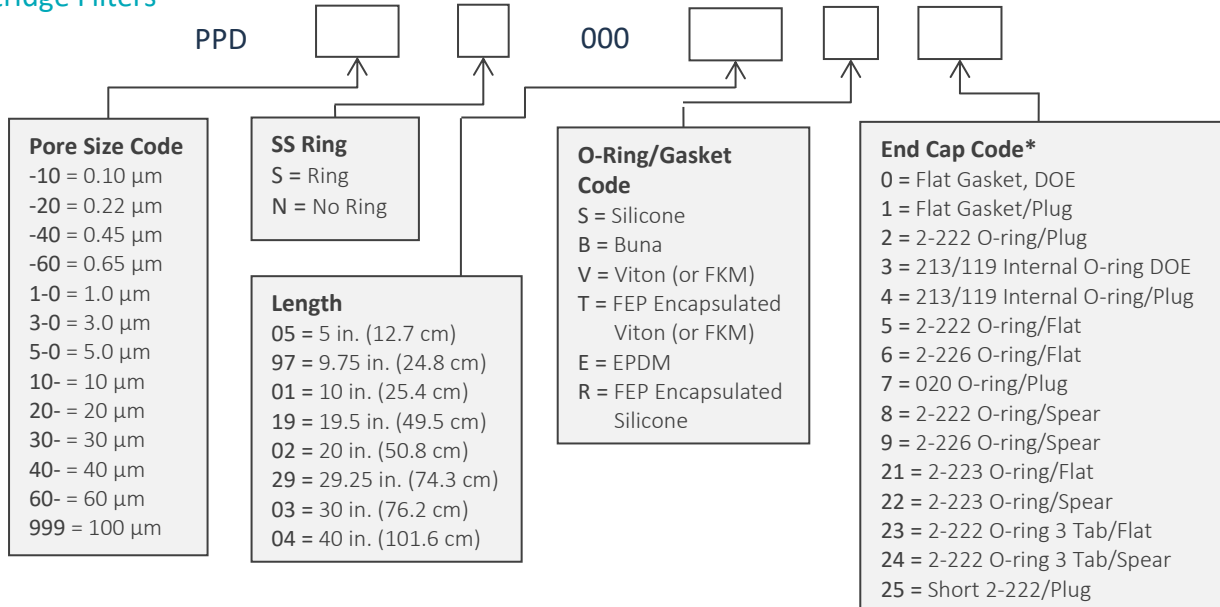
Flow rates for Capsule filters are per square foot of membrane area. The test fluid is water at ambient temperature. Flows are tested using a 2" capsule filter with 1/2" FNPT inlet and outlet ports. Rates will vary based on end configuration of the capsule.

## PPD 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.

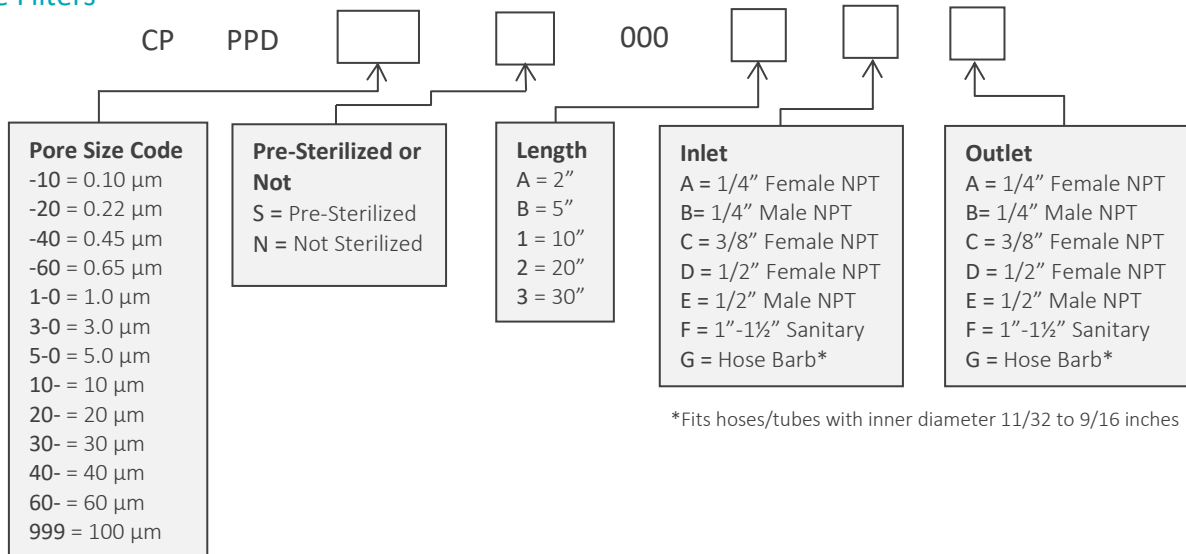
To consult with one of our technical team members, request a quote or place an order:  
call (603) 880-4220 Ext. 106, or send an email to [sales@criticalprocess.com](mailto:sales@criticalprocess.com)

### Cartridge Filters



\*Additional End Configurations Available

### Capsule Filters



\*Fits hoses/tubes with inner diameter 11/32 to 9/16 inches

### 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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