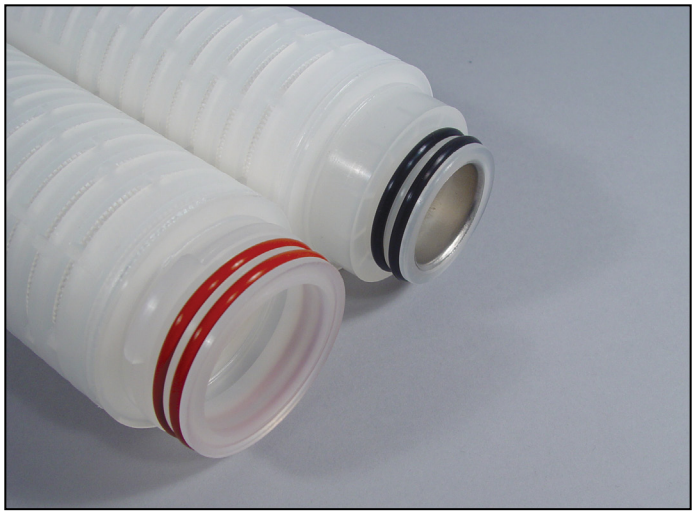
# EPD Cartridge Filters

## Pleated Polypropylene Depth Media

CRITICAL PROCESS FILTRATION, INC.



EPD Depth Filter Cartridges are designed to meet the special needs of the electronics and high-purity chemical industries. Raw materials of construction were specifically chosen to be chemically compatible and to produce minimal extractables when exposed to typical process chemicals and solvents. Each cartridge module is pulse power flushed until the rinse effluent reaches 18+ megohm-cm and less than 3 ppb TOC. Representative cartridge modules from each manufacturing lot are also integrity tested to assure lot quality. EPD cartridges are rated at 99.9% efficiencies at the rated pore size. Our design criteria and special procedures allow us to provide the highest quality electronics grade cartridges.

## Construction Materials

| | |
|---|---|
| **Filtration Media** | Pleated Polypropylene Depth Media |
| **Media Support** | Polypropylene |
| **End Caps** | Polypropylene |
| **Center Core** | Polypropylene |
| **Outer Support Cage** | Polypropylene |
| **Sealing Method** | Thermal Bonding |
| **O-rings** | Buna, Viton® (or FKM), EP, Silicone, FEP Encapsulated Silicone, FEP Encapsulated Viton (or FKM) |

## Dimensions

| | |
|---|---|
| **Length** | 5 to 40 in. (12.7 to 101.6 cm) nominal |
| **Outside Diameter** | 2.75 in. (7.0 cm) nominal |
| **Filtration Area** | 5.8 $ft^2$ (0.54 $m^2$) per 10 in. length (Average - area varies with media thickness and porosity) |

## Applications

- UP DI Water
- Acids and Bases
- Plating Solutions
- Etch Baths
- Chemicals
- Solvents
- Process Water

## Integrity Test Information

Representative sample cartridges are factory tested for integrity before shipment. Field duplication of these tests is not practical because of the absence of commercial portable testing equipment.

## Maximum Operating Parameters

| | |
|---|---|
| **Differential Pressure** | |
| • **Forward** | 50 psid (3.4 bard) at 20 °C (68 °F) |
| • **Reverse** | 40 psid (2.7 bard) at 20 °C (68 °F) |
| **Operating Temperature** | 82 °C (180 °F) at 10 psid (0.69 bard) in water |
| **Recommended Changeout Pressure** | 35 psid (2.4 bard) |

## Sanitization/Sterilization

| | |
|---|---|
| **Filtered Hot Water** | 90 °C (194 °F), 30 minutes, multiple cycles, max 3 psid forward flow |
| **Autoclave** | 121 °C (250 °F), 30 min, multiple cycles |
| **In-line Steam** | 135 °C (275 °F), 30 min, multiple cycles |

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

**Chemical Sanitization**

Carried out using industry standard concentrations of hydrogen peroxide, paracetic acid, sodium hypochlorite, and other selected chemicals.

## Total Performance

Critical Process Filtration, Inc. is a vertically integrated manufacturer of filtration products to industries in which filtration is considered a critical part of the manufacturing process. We supply a complete line of products and services to help you cost effectively satisfy all your filtration requirements from a single source.

Electronics Grade

## Extractables

The levels of extractables in aqueous extracts from E-grade filters are below 3ppb of TOC after product rinse during manufacturing. E-grade filters typically exhibit very low levels of non-volatile residues during startup.

## Flow Rate

The Typical Flow Rates table represents typical water flow at a 1 psid (69 mbard) pressure differential across a single 10 in. cartridge element. The test fluid is water at ambient temperature. Extrapolation for housings with multiple elements and higher pressure drops is acceptable, but as flows increase the pressure drop of the housing becomes more apparent.

## Quality Assurance and Standards

Our goal is to ensure our customers the greatest possible value for their filtration dollar. Our state of the art manufacturing facility and quality management system both meet ISO 9001:2008 standards. Each operation from assembly and test to cleaning, drying, and packaging is done in appropriately rated clean rooms. A sophisticated MRP system collects and processes real time data from manufacturing centers and inspection points. This allows variable and attribute data to be quickly and easily analyzed driving constant improvements in both quality and cost.

**Typical Flow Rates**

| Pore Size | 0.10 µm | 0.22 µm | 0.45 µm | 0.65 µm | 1.0 µm | 3.0 µm | 5.0 µm | 10 µm | 20 µm | 30 µm | 40 µm | 60 µm | 100 µm |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **GPM** | 1.0 | 3.0 | 5.0 | 6.0 | 8.0 | 12 | 16 | 18 | > 20 | > 20 | > 20 | > 20 | > 20 |
| **LPM** | 3.79 | 11.35 | 18.92 | 22.71 | 30.28 | 45.42 | 60.56 | 68.13 | >75.70 | >75.70 | >75.70 | >75.70 | >75.70 |

## Ordering Information

Cartridge order numbers have several variables from pore size to end cap type. For example, Electronics Grade Pleated Polypropylene Depth Media, 0.10 Micron Rating, No SS Support Ring, 20" Length, FEP Encapsulated Viton (or FKM) O-Rings, 2-222/ Flat End Cap Configuration = EPD-10N00002T5.

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**Pore Size Code**
-10 = 0.10 µm
-20 = 0.22 µm
-40 = 0.45 µm
-60 = 0.65 µm
1-0 = 1.0 µm
3-0 = 3.0 µm
5-0 = 5.0 µm
10- = 10 µm
20- = 20 µm
30- = 30 µm
40- = 40 µm
60- = 60 µm
999 = 100 µm

**316 SS Ring**
S = Ring
N = No Ring

**Cartridge Length Code**
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 = EP
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