

Fulflo® Advantage™ Filter Cartridges

■ Polypropylene

Pleated Series

Absolute Rated High Efficiency From All-Polypropylene Pleated Cartridges

Fulflo® Advantage™ Cartridges, made of pleated polypropylene microfiber, provide high efficiency and high purity filtration. The high submicron efficiency of the Advantage line makes it an ideal membrane prefilter or cost-effective alternative to membrane cartridges in a wide range of applications.

Advantage Pleated Cartridges are available in 0.3µm, 0.6µm, 1.2µm, 2.5µm, 5µm, 10µm, 20µm, 40µm and 70µm absolute rated pore sizes (99.99% removal; $\beta = 10,000$).

Applications

- Chemicals
- Electronic
- Food & Beverage
- Magnetic Media
- Pharmaceuticals
- Cosmetics
- Medical
- Photographic



Features and Benefits

- All-polypropylene media and construction meet a broad range of performance requirements.
- One-piece fused construction is 100% bonded for maximum cartridge integrity.
- High surface area design provides superior flow rates and extended service life.
- All media and structural components comply with biological, USP XXI Class VI requirements for plastic and are nontoxic per WI-38 Human Cell Cytotoxicity Test.
- All materials of construction are FDA listed as acceptable for potable and edible liquid contact according to CFR Title 21.
- Fixed pore construction provides ultimate particle retention efficiency.
- Major end seal options are available to fit most vessel requirements.
- Advantage cartridges are non-fiber releasing.

Process Filtration Division



Specifications

Filtration Ratings:

- 99.99% at 0.3µm, 0.6µm, 1.2µm, 2.5µm, 5µm, 10µm, 20µm, 40µm and 70µm pore sizes

Materials of Construction:

- Type of Construction: integrally sealed, all-polypropylene pleated media supported by all-polypropylene construction
- Filter Media: composite, spunbonded/melt blown continuous polypropylene microfiber matrix
- Pleat Support Layer (Upstream): polypropylene
- Pleat Drainage Layer (Upstream): polypropylene
- Media Support Core: high-strength polypropylene

- Media Protective Cage: molded polypropylene
- Pleat Pack Side Seal: fused polypropylene
- DOE Caps: polypropylene
- SOE Caps/O-Ring Adaptors: polypropylene
- Gaskets (DOE Style): Buna-N, FDA grade (standard)
- O-Rings (SOE Style): silicone, FDA grade (standard)
- Optional Gasket Materials: (non-FDA): EPR, Viton,* silicone
- Optional O-Ring Materials: (non-FDA): EPR, Viton,* Buna-N, Teflon* encapsulated Viton*

Recommended Operating Conditions:

- Maximum Temperature: 200°F (93°C)
- Maximum Temperature @ 35 psid: 160°F (71°C)
- Change Out DP: 35 psi (2.4 bar)
- Maximum DP @ Ambient 70°F (21°C): 70 psi (4.8 bar)
- Maximum DP @ 200°F (93°C): 20 psi (1.4 bar)

Dimensions:

- Overall Length: See catalog sheet C-2090. SOE fits standard vessels with O-ring seals.
- Cartridge Outside Diameter: 2-11/16 in
- Cartridge Inside Diameter: DOE: 1-1/16 in
SOE: 25/32 in

Advantage™ Length Factors

Length (in)	Length Factor
10	1.0
20	2.0
30	3.0
40	4.0

Advantage Cartridge Flow Factors (psid/gpm @ 1 cks)

Rating (µm)	Flow Factor
0.3	1.600
0.6	0.900
1.2	0.770
2.5	0.300
5	0.120
10	0.020
20	0.020
40	0.010
70	0.008

Liquid Particle Retention Ratings (µm) @ Removal Efficiency of:

Cartridge	β=10000 Absolute	β=1000 99.9%	β=100 99%	β=50 98%	β=20 95%	β=10 90%
AP 003	0.3	<0.3	<0.3	<0.3	<0.3	<0.3
AP 006	0.6	0.5	<0.3	<0.3	<0.3	<0.3
AP 012	1.2	1	0.6	0.4	<0.3	<0.3
AP 025	2.5	2.1	1	0.6	<0.3	<0.3
AP 050	5	3.8	1.4	0.8	0.4	<0.3
AP 100	10	6.6	2	1.1	0.5	<0.5
AP 200	20	12.7	3.1	1.8	0.8	<0.5
AP 400	40	22	5.8	3.2	1.2	0.6
AP 700	70	50	22	15	8	5.2

Flow Rate and Pressure Drop Formulas:

$$\text{Flow Rate (gpm)} = \frac{\text{Clean DP} \times \text{Length Factor}}{\text{Viscosity} \times \text{Flow Factor}}$$

$$\text{Clean DP} = \frac{\text{Flow Rate} \times \text{Viscosity} \times \text{Flow Factor}}{\text{Length Factor}}$$

Beta Ratio (β) =

$$\frac{\text{Upstream Particle Count @ Specified Particle Size and Larger}}{\text{Downstream Particle Count @ Specified Particle Size and Larger}}$$

$$\text{Percent Removal Efficiency} = \left(\frac{\beta - 1}{\beta} \right) \times 100$$

Performance determined per ASTM F-795-88. Single-Pass Test using AC test dust in water at a flow rate of 2.5 gpm per 10 in (9.5 lpm per 254 mm) cartridge.

Notes:

- Clean DP is PSI differential at start.
- Viscosity is centistokes. Use Conversion Tables for other units.
- Flow Factor is DP/GPM at 1 cks for 10 in (or single).
- Length Factors convert flow or DP from 10 in (single length) to required cartridge length.

Ordering Information

AP	025	10	A	N	DO	01
Cartridge Code	Particle Removal Rating (µm)	Nominal Length (in)	Support Construction	Gasket/O-Ring Material	End Cap Configurations	Special Options
AP = Advantage Polypropylene	003 = 0.3 006 = 0.6 012 = 1.2 025 = 2.5 050 = 5 100 = 10 200 = 20 400 = 40 700 = 70	10 20 30 40	A = Heavy-Wall Polypropylene	E = EPR N = Buna-N S = Silicone V = Viton* T = PFA Encapsulated Viton*	DO = Double Open End (DOE) DX = DOE With Core Extender SC = 226 O-Ring/Cap SF = 226 O-Ring/Fin TC = 222 O-Ring/Cap TF = 222 O-Ring/Fin	B = 100% Bubble-Point Test 01 = Single Cartridge Packaging No Symbol = No Option

Process Filtration Division

* A trademark of E. I. du Pont de Nemours & Co.

For pleated cartridge configurations and dimensions, see Bulletin A-700 in the Appendix.

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