Increased Flow Rate With Next Generation, All Teflon Membrane Filter Cartridges

A unique PTFE membrane provides superior flow rate and efficiency maximizing the performance of the all Teflon Advantage™ AF filter cartridge. The Advantage Mega-Pure AF Series of filter cartridges meets or exceeds the requirements for the filtration of UHP liquids used in the fabrication of state-of-the-art microelectronic devices.

The Mega-Pure Advantage AF Membrane Series is available in 0.05µm, 0.1µm, 0.2µm, 0.45µm and 1µm pore sizes.

Applications

UHP Water
- Mixed Acids
- Strippers

UHP Chemicals
- Acids
- Solvents
- Photoresists
- Alkalines
- Developers

Equipment
- Point-of-Use Tools
- Chemical Delivery System
- Cleaning
- Etching
- Photolithography
- Wet Benches

Features and Benefits

Superior Teflon Membrane Yields Maximum Filtration Results
- Unique PTFE membrane ensures high flow rates and superior retention.
- Rinsed to 18 megohm-cm resistivity with pulsed, ozonated, UHP water.
- Available prewetted for immediate use in process.
- Advantage AF cartridges are non-fiber releasing and superior in extractable levels.
- Engineered for high temperature resistance.

Parker’s TQM System Assures Consistent Performance and Reliable Filtration
- Strict quality control measures include rigorous testing for rinse up, shedding, flow rate and extractable levels.
- Integrity-tested and testable in situ.
- Thermally welded, eliminating adhesive extractables.
- Biosafe in accordance with USP Class VI-121° Plastics Tests.
- Specifically designed to ensure cleanliness.
- All materials of construction are FDA listed as acceptable for potable and edible liquid contact according to CFR Title 21.
**Specifications**

**Materials of Construction:**
- Membrane: hydrophobic PTFE
- Membrane Support/Drainage: PFA
- Structural Components: PFA
- O-Ring Material: various
- Sealing Method: thermal welding

**Dimensions:**
- Outside Diameter: 2.5 in (63.5 mm)
- Inside Diameter: 0.875 in (22.2 mm)
- Lengths: 4-30 in (10-76 cm)

**Surface Area (10 in cartridge):**
- Minimum 6.5 ft² (0.6 m²)

**Integrity Test:**
- Bubble Point (Using N₂ and a membrane wet with 100% IPA at 73°F [23°C]):
  - 0.05µm: ≥ 50 psi (3.4 bar)
  - 0.1µm: ≥ 24 psi (1.7 bar)
  - 0.2µm: ≥ 16 psi (1.1 bar)
  - 0.45µm: ≥ 6 psi (0.4 bar)
  - 1µm: ≥ 3 psi (0.2 bar)

**PTFE Cartridges (4 in):**
Flow rate vs. ΔP for a 1 cps liquid @ 73°F (23°C)**

**PTFE Cartridges (10 in):**
Flow rate vs. ΔP for a 1 cps liquid @ 73°F (23°C)**

**Recommended Operating Conditions:**
- Maximum Temperature:
  - 320°F (150°C) at 20 ΔP (1.4 bar)
- Maximum Differential Pressure:
  - Forward: 70 psi (4.8 bar) at 77°F (25°C)
  - Reverse: 50 psi (3.4 bar) at 77°F (25°C)

**Quality Standard**
- Each cartridge is flushed with pulsed UHP ozonated water and monitored downstream for TOC and particle count.
- The release criteria are no TOC contribution (ppb) and less than 4 particles/ml at the rating or greater for 15 minutes.
- Each lot of cartridges is evaluated for metallic ion contribution in 10% HNO₃ after a 24-hour static soak.
- Total metals contribution cannot exceed 25 ppb.

**Flow Advantages**
- Advantage™ AF cartridges offer greater flow rate while decreasing processing time and increasing recirculation, fluid cleanliness, yields and capacity.
- Maintaining the current flow rate while lowering the differential pressure allows Advantage AF cartridges to achieve longer life and lower particle counts.
- Maintaining the current flow rate and differential pressure with Advantage AF cartridges allows the use of smaller filter housings with smaller footprint.
- Maintaining the current flow rate and differential pressure with lower micron-rated Advantage AF cartridges improves yields and provides cleaner fluids.

**Ordering Information**

<table>
<thead>
<tr>
<th>Cartridge Code</th>
<th>Diameter (in)</th>
<th>Length (in)</th>
<th>O-Ring Material</th>
<th>End Cap Configuration</th>
<th>Special Preparation</th>
</tr>
</thead>
<tbody>
<tr>
<td>AF = All Teflon*</td>
<td>A = 2.5</td>
<td>104 = 40</td>
<td>C = CR 503</td>
<td>SC = 226 O-Ring/Fat</td>
<td>W = Prewetted With</td>
</tr>
<tr>
<td>AF = All Teflon*</td>
<td>A = 2.5</td>
<td>1010 = 50</td>
<td>D = CR 570</td>
<td>SF = 226 O-Ring/Fin</td>
<td></td>
</tr>
<tr>
<td>AF = All Teflon*</td>
<td>A = 2.5</td>
<td>120 = 60</td>
<td>E = EPR</td>
<td>TC = 222 O-Ring/Flat</td>
<td></td>
</tr>
<tr>
<td>AF = All Teflon*</td>
<td>A = 2.5</td>
<td>150 = 75</td>
<td>K = KR 4079</td>
<td>TF = 222 O-Ring/Fin</td>
<td></td>
</tr>
<tr>
<td>AF = All Teflon*</td>
<td>A = 2.5</td>
<td>220 = 110</td>
<td>L = KR 8201</td>
<td>BC = 015 O-Ring/Fat</td>
<td></td>
</tr>
<tr>
<td>AF = All Teflon*</td>
<td>A = 2.5</td>
<td>300 = 150</td>
<td>V = Viton*</td>
<td>DC = 116 O-Ring/Fat</td>
<td></td>
</tr>
<tr>
<td>AF = All Teflon*</td>
<td>A = 2.5</td>
<td>400 = 200</td>
<td>T = PFA/Viton*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>AF = All Teflon*</td>
<td>A = 2.5</td>
<td>500 = 250</td>
<td>X = No O-Ring</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* A trademark of E. I. du Pont de Nemours & Co.
** Consult factory for gas flow data.