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

A unique PTFE membrane provides superior flow rate, surface area and efficiency maximizing the performance of the all Teflon Advantage™ AF+ membrane filter cartridge. The Mega-Pure Advantage 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

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

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

Features and Benefits

Superior Teflon Membrane Yields Maximum Filtration Results
- Highest flow rate cartridge available for smallest footprint requirement.
- Rinsed to 18 megohm-cm resistivity with pulsed, ozonated, UHP water.
- Unique PTFE membrane ensures high flow rates and superior retention.
- 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
- Core, Sleeve, Adaptors: PFA/PTFE alloy
- End Caps: PFA
- O-Ring Material: various
- Sealing Method: thermal welding

Dimensions:
- Outside Diameter: 3.25 in (82.6 mm)
- Lengths: 4-30 in (10-76 cm)

Surface Area (10 in cartridge):
- Minimum 10.5 ft² (0.9 m²)

Ordering Information

<table>
<thead>
<tr>
<th>Cartridge Code</th>
<th>Pore Size (µm)</th>
<th>Diameter (in)</th>
<th>Length (in)</th>
<th>O-Ring Material</th>
<th>End Cap Configuration</th>
<th>Special Preparation</th>
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<tbody>
<tr>
<td>AF = All Teflon*</td>
<td>0.05</td>
<td>3.25</td>
<td>04</td>
<td>C = CR 503</td>
<td>TC = 222 O-Ring/Fat</td>
<td>W = Prewetted With</td>
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<td>0.1</td>
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<td>10</td>
<td>D = CR 570</td>
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<td>Ozonated UHP</td>
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<td>L = KR 8201</td>
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<td>V = Viton*</td>
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<td>T = PFA/Viton*</td>
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<td>X = No O-Ring</td>
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</table>

Recommended Operating Conditions:
- Maximum Temperature:
  375°F (191°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 contribution (ppb) and less than 4 particles/ml at the rating or greater for 15 minutes.
- Total metals contribution cannot exceed 25 ppb.

Flow Advantages
- Advantage™ AF+ cartridges offer 30% 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.

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

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

Flow Factors (4 in cartridge):

<table>
<thead>
<tr>
<th>Pore Size (µm)</th>
<th>GPM/1 PSID</th>
<th>LPM/1 Bar</th>
<th>PSID/1 GPM</th>
<th>Bar/1 LPM</th>
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</table>

Flow Factors (10 in cartridge):

<table>
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<th>Pore Size (µm)</th>
<th>GPM/1 PSID</th>
<th>LPM/1 Bar</th>
<th>PSID/1 GPM</th>
<th>Bar/1 LPM</th>
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<tr>
<td>0.05</td>
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<td>110</td>
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<td>0.009</td>
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<tr>
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<td>3.3</td>
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<td>0.005</td>
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* A trademark of E. I. du Pont de Nemours & Co.
** Consult factory for gas flow data.