

Advantage™ AF+ Filter Cartridges

■ PTFE Membrane

Mega-Pure Membrane Series

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

A unique PTFE membrane provides superior flow rate, surface area and efficiency maximising the performance of all the 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

- Ozonated
- Cold
- Hot

- Mixed Acids
- Strippers

Equipment

UHP Chemicals

- Acids
- Solvents
- Photoresists
- Alkalines
- Developers

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



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-fibre 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.

Process Filtration Division

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Parker
Filtration

Mega-Pure Membrane Series

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: 82.6mm
- Lengths: 10-76 cm

Surface Area (10 in cartridge):

- Minimum 0.9 m²

Integrity Test:

- Bubble Point (Using N₂ and a membrane wet with 100% IPA at 23°C:
 - 0.05µm: ≥ 3.4 bar
 - 0.1µm: ≥ 1.7 bar
 - 0.2µm: ≥ 1.1 bar
 - 0.45µm: ≥ 0.4 bar
 - 1µm: ≥ 0.2 bar

Recommended Operating Conditions:

- Maximum Temperature: 150°C at ΔP 1.4 bar
- Maximum Differential Pressure:
 - Forward: 4.8 bar at 25°C, 2.1 bar at 127°C
 - Reverse: 3.4 bar at 25°C

Quality Standard

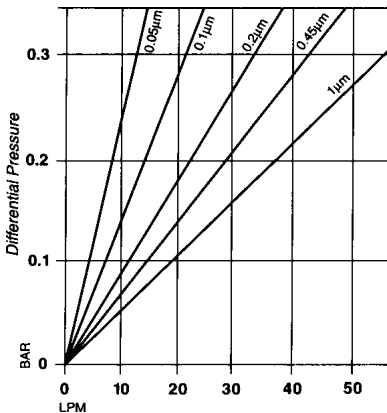
- Each cartridge is flushed with pulsed UHP ozonated water and monitored downstream for TOC and particle count.
- The release criteria are no TOC contribution (ppb) and less than 4 particles/ml at the rating or greater for 15 minutes.
- Each lot of cartridges is evaluated for metallic ion contribution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

Flow Advantages

- Advantage™ AF⁺ cartridges offer 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.

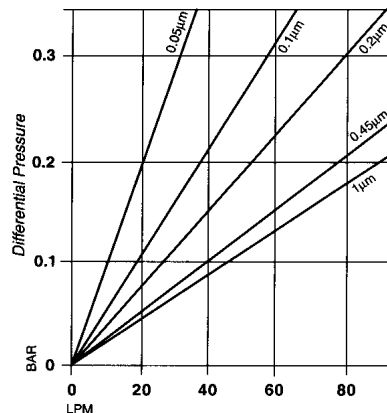
PTFE Cartridges (102mm/4 inch):

Flow rate vs. ΔP for a 1 cps liquid @ 23°C



PTFE Cartridges (254mm/10 inch):

Flow rate vs. ΔP for a 1 cps liquid @ 23°C



Flow Factors (102mm/4 inch cartridge):

Pore Size (µm)	l/min/ bard	bard/ l/min
0.05	44	0.024
0.1	71	0.015
0.2	110	0.009
0.45	153	0.007
1	181	0.005

Flow Factors (254mm/10 inch cartridge):

Pore Size (µm)	l/min/ bard	bard/ l/min
0.05	110	0.009
0.1	181	0.005
0.2	274	0.004
0.45	389	0.003
1	455	0.003

Ordering Information

AF+	D	C	10	T	TC	W
Cartridge Code	Pore Size (µm)	Diameter	Length (mm)	O-Ring Material	End Cap Configuration	Special Preparation
AF+ = All Teflon*	D = 0.05 S = 0.1 F = 0.2 R = 0.45 Q=1	mm 82.55	04 = 102 10 = 254 20 = 508 30 = 764	C = CR 503 D = CR 570 E = EPR K = KR 4079 L = KR 8201 V = Viton* T = PFA/Viton* X = No O-Ring	TC = 222 O-Ring/Flat TF = 222 O-Ring/Fin	W = Prewetted With Ozonated UHP Water

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

** Consult factory for gas flow data.

Process Filtration Division

Parker Filtration
Filter Division Europe
Shaw Cross Business Park
Dewsbury, West Yorkshire
WF12 7RD, England
Phone: +44 (0) 1924 487000
Fax: +44 (0) 1924 487001
Website: www.parker.com

