

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

- 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-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

WARNING! FAILURE OR IMPROPER SELECTION OR IMPROPER USE OF THE PRODUCTS AND/OR SYSTEMS DESCRIBED HEREIN OR RELATED ITEMS CAN CAUSE DEATH, PERSONAL INJURY AND PROPERTY DAMAGE. This document and other information from Parker Hannifin Corporation, its subsidiaries and authorised distributors provide product and/or system options for further investigation by users having technical expertise. It is important that you analyse all aspects of your application and review the information concerning the product or system in the current product catalogue. Due to the variety of operating conditions and applications for these products or systems, the user, through its own analysis and testing, is solely responsible for making the final selection for the products and systems and assuring that all performance, safety and warning requirements of the application are met. The products described herein, including without limitation, product features, specifications, designs, availability and pricing, are subject to change by Parker Hannifin Corporation and its subsidiaries at any time without notice.

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

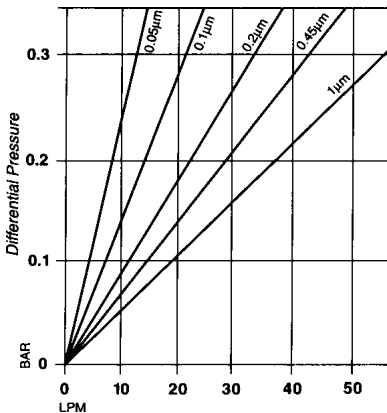
- Each cartridge is flushed with pulsed UHP ozonated water and monitored downstream for TOC and particle count.
- The release criteria are no TOC contribution (ppb) and less than 4 particles/ml at the rating or greater for 15 minutes.
- Each lot of cartridges is evaluated for metallic ion contribution 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.

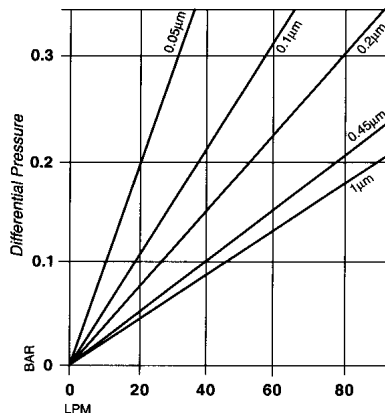
PTFE Cartridges (102mm/4 inch):

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

