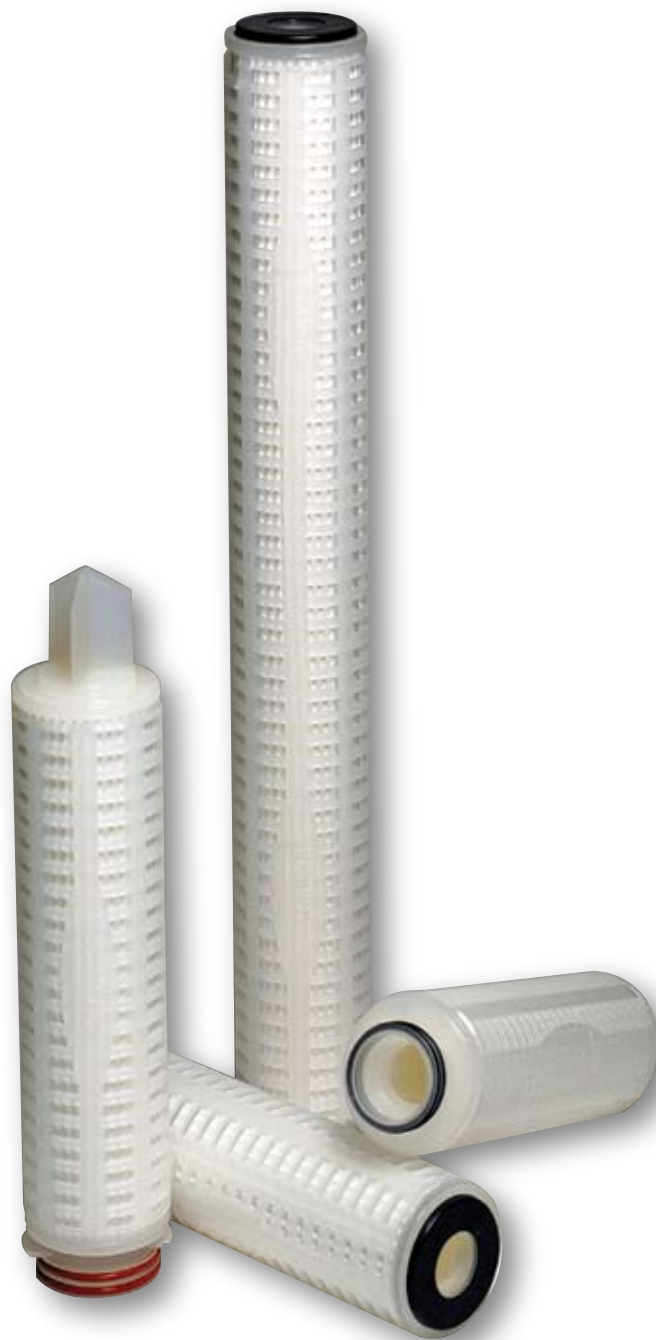




aerospace
climate control
electromechanical
filtration
fluid & gas handling
hydraulics
pneumatics
process control
sealing & shielding



Microfiltration

Filtration Products for Food and Beverage Applications



ENGINEERING YOUR SUCCESS.

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PARKER

Leader in process filtration, separation and purification

Parker microfiltration products set the highest standards for filtrate quality, product reliability and cost-effective use. Parker products provide optimal solutions for food and beverage applications. Parker products are available in lengths from 4 to 40 inches and configurations to retrofit all commonly installed filter housings. Products are offered in membrane and depth media with a full range of cartridges, mini-cartridges and capsules to meet production-, pilot- and laboratory-scale requirements. Removal ratings from 0.02 to >800 μm are available. All Parker products are backed by in-depth Technical Support, fast order turnaround and factory-trained local Distributors.



APPLICATIONS

Parker food and beverage products are optimized for filtration:

- Wine
- Beer
- Bottled Water
- New Age Beverages
- Distilled Spirits
- Cultured Food Products
- Sweeteners
- Flavors and Colors
- Product Makeup and Rinse Water
- Carbonation
- Bacteria Removal
- Prefiltration
- Venting
- Steam Filtration
- Gel Removal
- Haze Removal
- Sediment Removal
- Clarification
- Sterile Filtration

QUALITY MANAGEMENT AND ISO 9001

Quality is of paramount importance to Parker. All products are manufactured under controlled environmental conditions and are subjected to demanding programs of quality assurance.

Parker is ISO 9001 Certified.

MICROFILTRATION:

A Core expertise

The Food and Beverage industry is a rapidly growing world market that draws upon core areas of our filtration expertise. Included within this market the broad range of products that require highly effective filtration in their manufacturing processes.

These products include:

- Water Filtration
- Air/Gas Filtration
- Steam Filtration
- Liquid Filtration
- Filter housings
- Mini sized cartridges and capsules

Through our Technical, R&D and Customer Service Teams we offer a wide range of services to ensure total customer satisfaction.

TECHNICAL CAPABILITIES

Our Technical Support Services team is dedicated to the needs of the Food and Beverage industry. We have an extensive range of state-of-the art analytical instrumentation and a highly qualified team of scientists and engineers generating innovative solutions to a wide variety of filtration needs. We strive to optimize our customers' filtration applications by offering full technical support that includes:

- process failure analyses
- contamination analyses
- process and cost improvement audits
- on-site testing services

RESEARCH AND DEVELOPMENT

Our R&D teams are constantly working to innovate new products and discover technologies that will enhance the performance of process filtration, and thus keep us at the forefront of process filtration technology.

CUSTOMER SERVICE

An experienced team of professionals dedicated to respond quickly and comprehensively to orders – both for standard and customized products – and ensure their on-time delivery worldwide.





MICROFILTRATION PRODUCTS

Tailored to food and beverage applications



Parker microfiltration products set the highest standards for filtrate quality, product reliability and cost-effective use. Parker products are available to provide optimal solutions for food and beverage applications. Parker products are available in lengths from 4 to 40 inches and configurations to retrofit all commonly installed filter housings. Products are offered in membrane and depth media with a full range of cartridges, mini-cartridges and capsules to meet production-, pilot- and laboratory-scale requirements. Removal ratings from 0.02 to >800 μm are available.

All Parker products are backed by in-depth Technical Support, fast order turnaround and factory-trained local Distributors.

Integrity tester and a wide variety of Filter Housings are available.
Ask your Parker Sales Representative for details

Filtration applications:

- Wine
- Beer
- Bottled Water
- Distilled Spirits
- Cultured food products
- Sweeteners
- Flavors and Colors
- Product Makeup Water
- Rinse Water
- Carbonation
- Bacteria Removal
- Prefiltration
- Venting
- Steam Filtration
- Gel removal
- Haze removal
- Sediment removal
- Clarification
- Sterile Filtration

MICROFILTRATION PRODUCTS

Tailored to food and beverage applications

PLEATED MEMBRANE FILTERS

CLEARFLOW™

Glass media or polypropylene prefilter on polyethersulfone (PES) membrane/polypropylene hardware

CLARIFLOW® WINE

Polyethersulfone (PES) membrane/polypropylene hardware

CLARIFLOW® GENERAL

Polyethersulfone (PES) membrane/polypropylene hardware

CLARIFLOW® WATER

Polyethersulfone (PES) membrane/polypropylene hardware

PROFLOW™ II - ABR

PTFE membrane/polypropylene hardware

FULFLO® II CRYPTO PES

PES membrane/polypropylene hardware

PLEATED DEPTH FILTERS

POLY-MATE PM/PXD

Nominally-rated polypropylene

GLASS-MATE PMG

Microfiberglass media/polypropylene or polyester hardware

ABSO-MATE PAB

Absolute rated polypropylene media
Polypropylene hardware

PARMAX™

Large-diameter high flow
Glass media or polypropylene hardware

POLYFLOW™

Absolute-rated polypropylene depth media/polypropylene hardware

POLYFLOW™ GENERAL

Nominally-rated polypropylene depth media/polypropylene hardware

WOUND FILTERS

HONEYCOMB HFT

Various materials

FULFLO® SWC

Various materials

MELT-BLOWN FILTERS

MEGABOND PLUS

Absolute-rated meltblown polypropylene media

DURABOND

Polyolefin media

AVASAN™

Polypropylene media

METALLIC MEDIA FILTERS

FULFLO® METALLIC

Pleated and cylindrical 304 stainless steel & 316 stainless steel

BAG FILTERS

FULFLO® FILTER BAGS

Various fibers bag filter

XLH

High efficiency, high capacity polypropylene bag filter

MICROFILTRATION PRODUCTS

Tailored to food and beverage applications

Product Line	Filter Ratings (microns)	Leading Features and Applications
PLEATED MEMBRANE FILTERS		
CLEARFLOW™ Polyethersulfone (PES) membrane	0.2, 0.5, 0.8	• Pre- and final filtration of wine, beer and juices • Prefiltration of DI water
CLARIFLOW™ WINE Polyethersulfone (PES) membrane	0.45, 0.65	• Final filtration of wine, beer, spirits and mineral water
CLARIFLOW™ GENERAL Polyethersulfone (PES) membrane	0.04, 0.1, 0.2, 0.45, 0.65, 0.8	• Pre- and final filtration of wine, beer and juices • Liquid clarification and recirculation of fluids • General use water filtration
CLARIFLOW™ WATER Polyethersulfone (PES) membrane	0.04, 0.1, 0.2, 0.45	• Prefiltration and final filtration formulation waters
PROFLOW™ II-ABR Pleated PTFE membrane cartridges	0.1, 0.2	• Sterile venting • Sterile gas
FULFLO® II Crypto Polyethersulfone media/polypropylene structure	1.0	• Specifically developed for the removal of <i>Cryptosporidium parvum</i> oocysts
PLEATED DEPTH FILTERS		
POLY-MATE PM/PXD Polypropylene	0.5 to 60	• Prefiltration of beers, wines and potable water • NSF 61 certified
GLASS-MATE PMG Microfiberglass	0.45 to 40	• Prefiltration of beers and wines
ABSO-MATE PAB Polypropylene	0.2 to 70	• Prefiltration of beers, wines and potable water • NSF 61 certified
PARMAX™ Polypropylene/microfiberglass large diameter	1, 3, 4.5, 10, 20, 30, 40, 90	• High containment-holding capacity for food and beverage applications
POLYFLOW™ Polypropylene	0.6, 1.2, 2.5, 5, 10, 20, 40	• DI water filtration, wine and beer prefiltration • Gas prefiltration
POLYFLOW™ G Polypropylene	0.5, 1, 3, 5, 10, 30	• Prefiltration of DI water and beverages
WOUND FILTERS		
HONEYCOMB HFT Various materials	0.5 to 150	• Prefilter for water and food packaging • NSF 61 certified (poly only)
FULFLO® SWC Various materials	1.0 to 100	• Prefilter for membranes, water, food and packaging • NSF 61 certified (poly only)



Product Line	Filter ratings (microns)	Leading Features and Applications
MELTBLOWN FILTERS		
MEGABOND PLUS Polypropylene	1.0 to 120	• Final filtration
DURABOND Polyolefin	1.0 to 100	• Potable water • Pre- and final filtration of juices and other drinks • NSF certified
AVASAN™ AVS Polypropylene	1.0 to 75	• Potable water • Pre- and final filtration of juices and other drinks • NSF 61 certified
METALLIC MEDIA FILTERS		
FULFLO® METALLIC Stainless steel - 304 & 316	2.0 to 840	• High temperature or high viscosity applications • Steam applications
BAG MEDIA FILTERS		
FULFLO® FILTER BAGS Various fibers bag filter	1.0 to 800	• Bulk food packaging • Prefiltration
FULFLO® XLH Polypropylene bag filter	0.5 to 25	• Bulk food packaging • Prefiltration



FILTER HOUSINGS

SINGLE-CARTRIDGE FILTER VESSEL SERIES	Carbon steel, brass stainless steel, 316 stainless steel, SAN/ polypropylene and natural polypropylene
MULTI-CARTRIDGE FILTER VESSEL SERIES	304 and 316L stainless steel; iron, carbon and stainless steel
BAG FILTER VESSEL SERIES	Carbon, 304, 304L and 316 stainless steel



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PLEATED MEMBRANE FILTERS



ENGINEERING YOUR SUCCESS.

CLEARFLOW™

Serial layers of depth media and membrane provide long lasting protection of final filters



Extended life and high retention efficiency make Clearflow™ an ideal filter for the clarification of particulate-laden solutions as commonly found in food and beverage production.

At the heart of the Clearflow™ design is a serial layer matrix of depth media and polyethersulfone (PES) membrane. This combination offers superior flow and long-lasting protection for downstream final filters. Clearflow™ cartridges are also non-fiber-releasing and will not unload contaminants, even under pulsing conditions.

Clearflow™ cartridges are available in 0.2, 0.5, or 0.8 µm nominal ratings, and with your choice of glass fiber or polypropylene prefiltration media. They are manufactured in a certified cleanroom environment. The Biological Grade version provides qualitative microbial retention. General Grade cartridges are for prefiltration applications, and are bulk packaged and economically priced.

BENEFITS

- Excellent particle retention provides for excellent protection of downstream filters
- High flow rate reduces processing time
- Long service life minimizes changeout frequency
- Integrity testable
- Steam Sterilizable

APPLICATIONS

Prefiltration/clarification of:

- Syrups
- Sweeteners
- Wine/beer/bottled water
- Viscous liquids

SPECIFICATIONS

Materials of Construction:

Either glass fiber or polypropylene depth media over with a PES membrane layer. Media support layers and cartridge structure are polypropylene.

All components meet USP-XXIV Class VI-121°C criteria and are thermally bonded to assure integrity and purity.

Maximum Operating Conditions:

Forward	60 psid (4.1 bar) @ 75°F (24°C)
Reverse	30 psid (2.0 bar) @ 75°F (24°C)

Steam Sterilizable and Sanitizable:

Cartridges can be steamed or autoclaved for at least 10 one-hour cycles @ 121°C (250°F). Cartridges can also be hot water or chemically sanitized in place using common sanitizing agents. Please contact Parker for detailed procedures.

Integrity Tested:

All biological grade elements are integrity tested by a diffusive flow method during manufacturing

Integrity Test Values:

FILTER RATING	BUBBLE POINT*		flow (ml/min)	DIFFUSIONAL FLOW*	
				TEST PRESSURE	
µm	psig	bar		psig	bar
0.2	30	21.	20	24	1.7
0.5	17	1.2	20	13	0.9
0.8	14	1.0	20	11	0.7

*Tested in deionized water

CLEARFLOW™

Serial layers of depth media and membrane provide long lasting protection of final filters

PERFORMANCE ATTRIBUTES

Typical Water Flow Rates*

SG- with glass fiber depth matrix

0.2 µm 4.0 gpm/psid (21.96 lpm/100 mbar)

0.5 µm 7.5 gpm/psid (41.18 lpm/100 mbar)

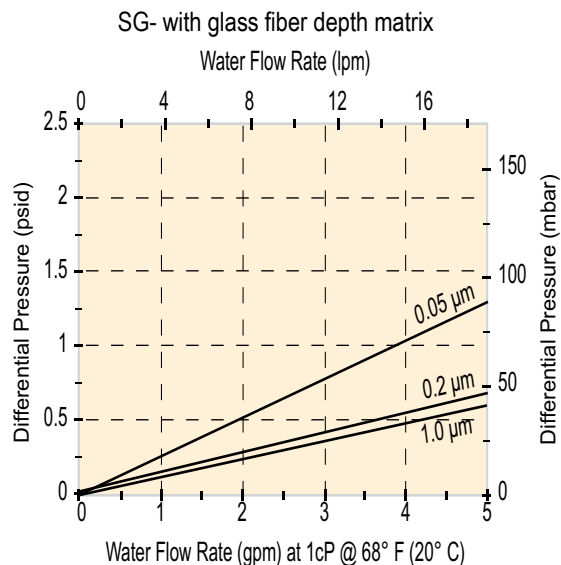
0.8 µm 8.5 gpm/psid (46.67 lpm/100 mbar)

SP- with Polypro fiber depth matrix

0.2 µm 2.0 gpm/psid (10.98 lpm/100 mbar)

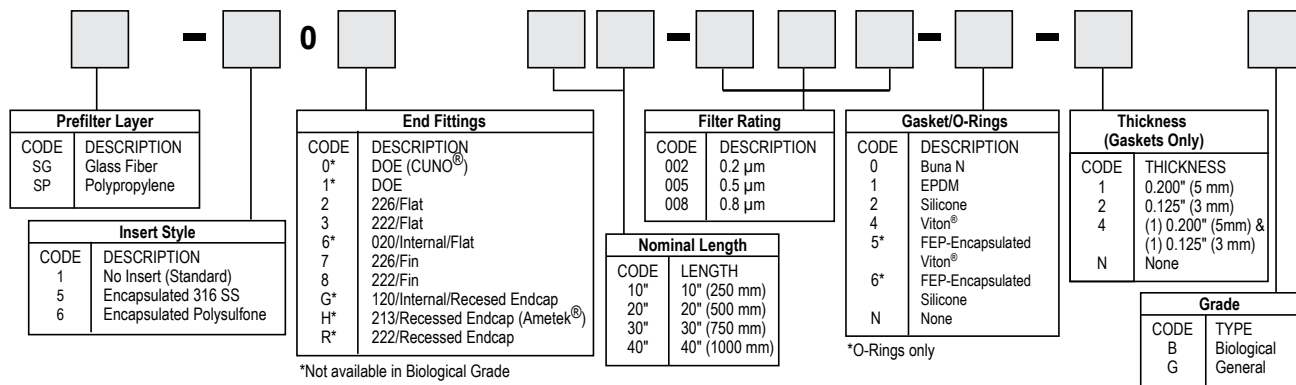
0.5 µm 3.1 gpm/psid (17.02 lpm/100 mbar)

* For fluids with viscosity of 1cP, per 10 inch (250 mm) cartridge equivalent



ORDERING INFORMATION

Each cartridge is identified with a product number, pore size and lot number for traceability.



TECHNICAL SUPPORT AND PRODUCT INFORMATION

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Ametek® is a registered trademark of Ametek Calibration Instruments

CLARIFLOW® GENERAL GRADE

Hydrophilic polyethersulfone (PES) membrane for aqueous liquid filtration applications



Clariflow® General Grade cartridges are designed for general purpose use in the filtration of high-purity liquids and aqueous chemicals.

The mirrored-anisotropic Polyethersulfone (PES) membrane is inherently hydrophilic and has a pore morphology that delivers exceptionally high flow rates.

Because there are no added surfactants or wetting agents, and the support layers and structure are all-polypropylene, the filter exhibits low extractables, broad chemical compatibility and good resistance to hydrolysis.

BENEFITS

- Absolute Rated Membrane
- High flow rate reduces processing time
- Broad chemical compatibility allows use in most applications
- Low differential pressure reduces system wear and tear

APPLICATIONS

- Beverage clarification
- Ingredients and Process liquids
- Water filtration
- Deionized water systems

SPECIFICATIONS

Materials of Construction:

Membrane	Polyethersulfone
Support layers	Polypropylene
Structure	Polypropylene

Maximum Differential Pressure/Temperature:

Forward	80 psid (5.5 bar) @ 75°F (24°C)
	40 psid (2.8 bar) @ 180°F (82°C)
Reverse	50 psid (3.4 bar) @ 75°F (24°C)

Effective Filtration Area:

6.8 ft² (0.63 m²) per 10 inch (250 mm) cartridge

Bulk Packaging:

Bulk packaged in case quantities to reduce material disposal.

10"	- 28 per carton
20"	- 12 per carton
30"	- 12 per carton
40"	- 9 per carton

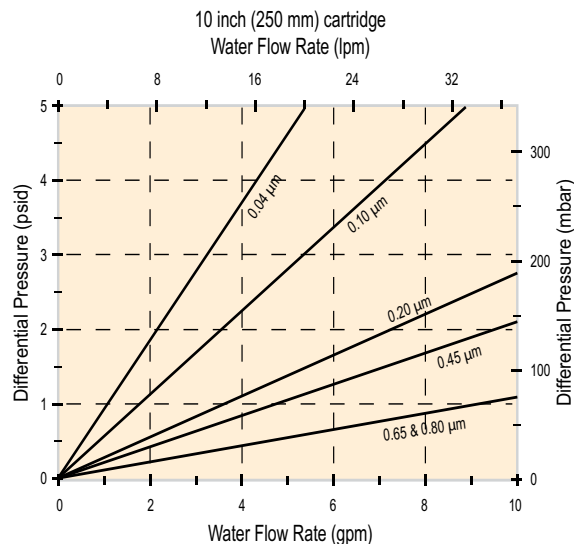
CLARIFLOW® GENERAL GRADE

Hydrophilic polyethersulfone (PES) membrane for liquid filtration applications

PERFORMANCE ATTRIBUTES

Water Flow Rates

0.04 µm	1.0 gpm/psid (5.29 lpm/100 mbar)
0.10 µm	1.8 gpm/psid (9.88 lpm/100 mbar)
0.20 µm	3.7 gpm/psid (20.31 lpm/100 mbar)
0.45 µm	4.8 gpm/psid (26.35 lpm/100 mbar)
0.65 µm	9.2 gpm/psid (50.51 lpm/100 mbar)
0.80 µm	9.5 gpm/psid (52.16 lpm/100 mbar)



ORDERING INFORMATION

Each cartridge is identified with a product number, pore size and lot number for traceability.

25 — 10 — — — — — — — G

End Fitting		Nominal Length		Filter Rating		Gasket/O-Rings		Thickness (Gasket Only)	
CODE	DESCRIPTION	CODE	LENGTH (MM)	CODE	MICRON	CODE	MATERIAL	CODE	MATERIAL
0	DOE (CUNO®)	10	10" (250)	924	0.04 µm	0	Buna N	1	0.200" (5 mm)
1	DOE	20	20" (500)	001	0.10 µm	1	EPDM (Standard)	2	0.125" (3 mm)
2	226/Flat	30	30" (750)	002	0.20 µm	2	Silicone	4	(1) 0.200" (5 mm) & (1) 0.125" (3 mm)
3	222/Flat	40	40" (1000)	004	0.45 µm	4	Viton®	N	No Gasket
6	020/Internal/Flat			006	0.65 µm	5*	FEP-Encapsulated Viton®		
7	226/Fin			008	0.80 µm	6*	FEP-Encapsulated Silicone		
8	222/Fin					N	None		

*O-Rings only

TECHNICAL SUPPORT AND PRODUCT INFORMATION

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CLARIFLOW® WATER SERVICE GRADE

Hydrophilic polyethersulfone (PES) membrane for cost-effective purification



Clariflow® Water Service Grade cartridges are cost-effective alternatives to Clariflow E and G Grade cartridges for the filtration of a variety of aqueous liquids.

The Water Service cartridge is built around a unique polyethersulfone (PES) membrane that is inherently hydrophilic, and contains no added surfactants or wetting agents. It delivers clean filtrates, flow rates, extended service life and excellent resistance to hydrolysis.

Water Service cartridges are fabricated under cleanroom conditions.

BENEFITS

- Absolute rated membrane
- Reliable and cost-effective
- Broad chemical compatibility allows use in aqueous applications
- Resistance to hydrolysis allows extended use in UPW systems
- High flow rate/low differential pressure reduces system wear and tear

APPLICATIONS

- Deionized water filtration
- Liquid clarification
- Recirculating liquids
- Wine and beer clarification
- Juices
- Bottled water
- Process water

SPECIFICATIONS

Materials of Construction:

Membrane	Polyethersulfone
Support layers	Polypropylene
Structure	Polypropylene

All components meet USP-XXIV Class VI-121°C criteria and are thermally bonded to assure integrity and purity.

Maximum Differential Pressure:

Forward	80 psid (5.5 bar) @ 75°F (24°C)
	40 psid (2.8 bar) @ 180°F (82°C)
Reverse	50 psid (3.4 bar) @ 75°F (24°C)

Effective Filtration Area:

5.4 ft² (0.50 m²) per 10 inch (250 mm) cartridge

Bulk Packaging:

Bulk packaged in case quantities to reduce material disposal

10"	- 28 per carton
20"	- 12 per carton
30"	- 12 per carton
40"	- 9 per carton

CLARIFLOW® WATER SERVICE GRADE

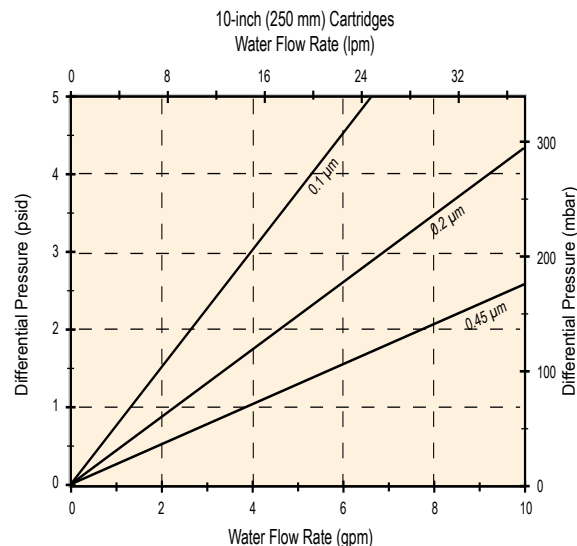
Hydrophilic polyethersulfone (PES) membrane for cost-effective water purification

PERFORMANCE ATTRIBUTES

Water Flow Rates

0.1 µm	1.3 gpm/psid (7.14 lpm/100 mbar)
0.2 µm	2.6 gpm/psid (14.27 lpm/100 mbar)
0.45 µm	3.8 gpm/psid (20.86 lpm/100 mbar)

* Per 10 inch (250 mm) cartridge equivalent and for fluids with viscosity of 1cP



ORDERING INFORMATION

Each cartridge is identified with a product number, pore size and lot number for traceability.

25 - [] 0 [] [] [] - [] [] [] - [] [] - WG

Insert Style		End Fittings		Nominal Length		Filter Rating		Gasket/O-rings		Thickness (Gaskets Only)	
CODE	DESCRIPTION	CODE	DESCRIPTION	CODE	LENGTH	CODE	MICRON	CODE	MATERIAL	CODE	THICKNESS
1	No Insert (standard)	0	DOE (CUNO®)	10	10" (250 mm)	001	0.1 µm	0	Buna N	1	0.200" (5 mm)
5	Encapsulated	1	DOE	20	20" (500 mm)	002	0.2 µm	1	EPDM	2	0.125" (3 mm)
6	Encapsulated 316 SS Insert	2	226/Flat	30	30" (750 mm)	004	0.45 µm	2	Silicone	4	(1) 0.200" (5 mm) & (1) 0.125" (3 mm)
A	1/2" Shortened Filter (222 only)	3	222/Flat	40	40" (1,000 mm)			4	Viton®	N	None
		6	020/Internal/Flat	All cartridges are 2.75" (690 mm) in diameter.				5*	Encapsulated Viton®		
		7	226/Fin					6*	Encapsulated Silicone		
		8	222/Fin					N	None		
		G	120/Internal/Recessed					*O-rings only			
		H	213 internal/recessed endcap								
		R	213 internal/recessed endcap(Ametek®)								
			222/Recessed End cap								

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CLARIFLOW® WINE

Pleated polyethersulfone (PES) membrane for final filtration of wine and beverages



Extended life and absolute retention efficiency make the Clariflow® Wine product an ideal filter for the clarification of wine. At the heart of this design is a special membrane composed of polyethersulfone (PES). Choosing either the 0.65 or 0.45 μm pore sizes for red and white wines, PES membrane offers superior flow, extended on-stream life, and the consistent removal of microorganisms and particulates.

Clariflow® Wine cartridges are inherently hydrophilic, and contain no added surfactants or wetting agents. The PES membrane also exhibits low color-binding characteristics. Ensures that the filter will not affect the taste of the wine being processed. Each cartridge is manufactured in a certified clean-room environment in accordance with a quality system consistent with the requirements of ISO 9001 certification and guidelines.

BENEFITS

- Extended on-stream life minimizes changeout frequency
- High retention efficiency of yeast and other wine spoilage organisms
- Steam sterilizable/sanitizable for cleaning and reuse
- Integrity testable to ensure complete reliability

APPLICATIONS

Prefiltration/Clarification of:

- Wine
- Beer
- Spirits
- Mineral water

SPECIFICATIONS

Materials of Construction:

Membrane	Polyethersulfone
Support Layers	Polypropylene
Structure	Polypropylene

Operating Differential Pressure:

Forward	80 psid (5.4 bar) @ 75°F (24°C)
	40 psid (2.8 bar) @ 180°F (82°C)
Reverse	50 psid (3.4 bar) @ 75°F (24°C)

Steam Sterilizable and Santizable:

Cartridges may be steamed or autoclaved for at least 50 one-hour cycles @ 135°C (275°F). Cartridges may also be hot water and chemically sanitized in place using common sanitizing agents.

Bacteria Retention:

0.65 μm cartridges have been tested to retain *S. cerevisiae* and *P. damnosus*, 0.45 μm cartridges have been tested to retain *L. oenii* and *L. brevis* under conditions typical of those found in the wine industry.

Integrity Test Values: (per 10" cartridges)

FILTER RATING	BUBBLE POINT*		DIFFUSIONAL FLOW		
			FLOW	TEST PRESSURE	
μm	psig	bar	ml/min	psig	bar
0.45	22	1.4	<20	15	1.0
0.65	16	1.1	<20	12	0.9

Tested in deionized water

CLARIFLOW® WINE

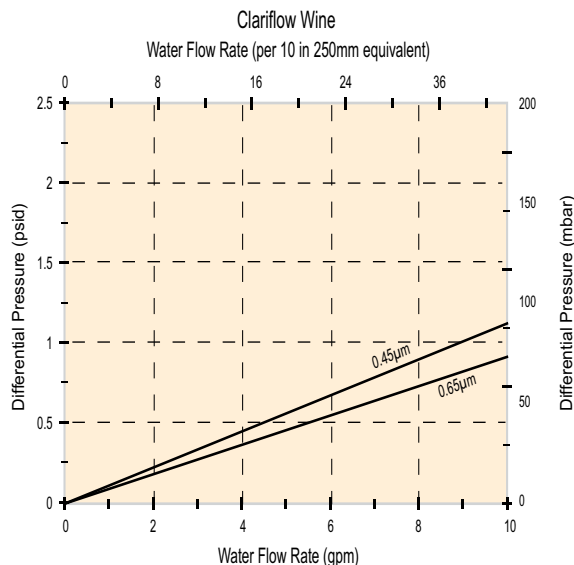
Pleated polyethersulfone (PES) membrane for final filtration of wine and beverages

PERFORMANCE ATTRIBUTES

Liquid Flow Rates*

0.45 µm	8 gpm/psid (0.04 lpm/1 mbar)
0.65 µm	9.5 gpm/psid (0.05 lpm/1 mbar)

*For fluids with viscosity of 1cP per 10" (250 mm) cartridge equivalent



ORDERING INFORMATION

25 - [] 0 [] [] [] - [] [] [] - [] [] - WN

Insert Style	
CODE	DESCRIPTION
1	No Insert (standard)
5	Encapsulated 316 SS Insert
6	Encapsulated Polysulfone Insert
A*	1/2" Shortened Filter

End Fittings	
CODE	DESCRIPTION
0	DOE (CUNO®)
1	DOE
2	226/Flat
3	222/Flat
6	020/Internal/Flat
7	226/Fin
8	222/Fin

Nominal Length	
CODE	LENGTH (MM)
10	10" (250)
20	20" (500)
30	30" (750)
40	40" (1,000)

All cartridges are 2.75" (690 mm) in diameter.

Filter Rating	
CODE	MICRON
004	0.45 µm
006	0.65 µm

Gasket/O-rings	
CODE	MATERIAL
0	Buna N
1	EPDM
2	Silicoge
4	Viton®

Thickness (Gaskets Only)	
CODE	THICKNESS
1	0.200" (5 mm)
2	0.125" (3mm)
4	(1) 0.200" (5 mm) & (1) 0.125" (3 mm)
N	No Gasket

* Code 3 & 8 only

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PROFLOW™ II ABR

Pleated PTFE membrane cartridge for sterile venting and gas delivery



The Proflow™ II Aerosol Bacterial Retentive (ABR) cartridge (0.2 μm) is validated to produce sterile air utilizing a bacterial aerosol challenge (See the Validation Guide for the test protocol). This methodology best emulates the actual bacterial removal action of the filter in use as a hydrophobic vent. Proflow™ II ABR exhibits some of the highest air flow rates for sterilizing grade air filters built of pleated expanded PTFE membrane. Users who require the ultimate in flow rate for tank venting and sterile air supply will find the Proflow™ II ABR to be their filter of choice.

This cartridge is fabricated, 100% integrity tested, and packaged utilizing a certified cleanroom to guarantee consistent performance and quality.

BENEFITS

- Fully validated for sterilizing-grade performance
- Broad chemical compatibility allows use in most applications
- Long service life minimizes changeout frequency
- Low differential pressure reduces energy costs
- Integrity tested to ensure quality

APPLICATIONS

- Fermenter
- Formulation tank
- RO and WFI storage tank
- Starter culture vessels
- Air Supply
 - Fermentor air
 - Container purge air
 - Aseptic packaging air

SPECIFICATIONS

Materials of Construction:

Membrane	PTFE
Support layers	Polypropylene
Structure	Polypropylene

All components meet USP XXIII class VI -121°C criteria and are thermally bonded to assure integrity.

Maximum Differential Pressure:

Forward	80 psid (5.5 bar) @ 75°F (24°C)
	40 psid (2.8 bar) @ 180°F (82°C)
Reverse	50 psid (3.4 bar) @ 75°F (24°C)

Effective Filtration Area:

10-inch (250 mm) cartridges	9.3 ft ² (0.86 m ²)
5-inch (127 mm) cartridges	4.6 ft ² (0.43 m ²)

Bacterial Retention:

Proflow™ II ABR 0.2 μm will provide a sterile effluent when challenged with up to 10⁷/cm² CFU of *Brevundimonas diminuta* per element using an Aerosolized Bacteria Challenge. The 0.2 μm version has also been shown to be > 99.99 percent efficient for the removal of phiX-174 bacteriophage virus when challenged with at least 10⁸ virus/10" length. In both cases cartridges were challenged after 100 one-hour steam cycles at 145°C.

Steam and Sterilization:

Cartridges have been validated to withstand over 100 one-hour steam cycles at 145°C

Integrity Test Values:

(in 60/90 IPA/water) Flow per 10" cartridge

FILTER RATING	BUBBLE POINT*		DIFFUSIONAL FLOW		
	psig	bar	TEST PRESSURE		
μm			cc/min	psig	bar
0.1	≥ 21	1.5	≤ 25	17	1.2
0.2 - 10 inch	≥ 13	0.9	≤ 15	10	0.7
0.2 - 5 inch	≥ 13	0.9	≤ 10	10	0.7
0.45	≥ 5	0.3	≤ 50	5	0.3
1.0**	≥ 1	0.07	≤ 100	1	0.07

*Tested in 60/40 IPA/DI water

PROFLOW™ II ABR

Pleated PTFE membrane cartridge for sterile venting and gas delivery

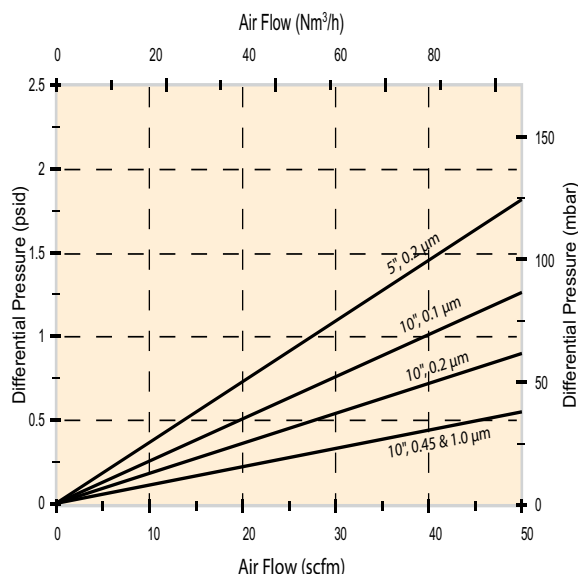
PERFORMANCE ATTRIBUTES

Air in Flow Rates, Typical *

10 inch (250 mm) cartridges

0.1 µm	40 scfm/psid (98.5 Nm³/h/100 mbar)
0.2 µm	55 scfm/psid (135.4 Nm³/h/100 mbar)
0.45 µm	90 scfm/psid (221.6 Nm³/h/100 mbar)
1.0 µm	90 scfm/psid (221.6 Nm³/h/100 mbar)

*At 75°F (24°C) and an inlet pressure of 15 psia (1 bar)



ORDERING INFORMATION

Each cartridge is identified with a product number, pore size and lot number for traceability.

34

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0

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A

Insert Style

CODE	DESCRIPTION
5	Encapsulated Stainless Steel
6	Encapsulated Polysulfone (std)

End Fitting

CODE	DESCRIPTION
2	226/Flat
3	222/Flat
7	226/Fin
8	222/Fin

Nominal Length

CODE	Length (mm)
05*	5" (130)
10	10" (250)
20	20" (500)
30	30" (750)
40	40" (1000)

Filter Rating

CODE	(µm)
002	0.2
004	0.45
010	1.0

O-ring Material

CODE	DESCRIPTION
0	Buna N
1	EPR
2	Silicone
4	Viton®
5	FEP Encapsulated Viton®
6	FEP Encapsulated Silicone
N	None

* 5 inch (130 mm) cartridge available only in the 0.2 µm rating. All cartridges are 2.75 inches (70 mm) O.D.

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PROFLOW® II ABR MINI-CARTRIDGES

Pleated PTFE membrane cartridge for sterile venting and gas delivery



Proflow® II Aerosol Bacterial Retentive (ABR) mini-cartridges are validated to produce sterile air for tank venting and air supply applications. These filters exhibit some of the highest air flow rates of any mini-cartridges of, and are offered in a choice of three sizes to meet specific gas delivery requirements.

Proflow II mini-cartridges provide a secure seal and available with a choice of material to fulfill a range of application demands.

BENEFITS

- High air flow rates for effective venting
- Qualitative retention of aerosolized bacteria offers high titre reduction
- Long service life minimizes changeout frequency
- 100% integrity tested for reliable product performance
- End fittings provide a secure O-ring seal (-116) that is available with a number of material choices

APPLICATIONS

Sterile Venting

- Bioreactors/Fermenters
- Formulation tanks
- RO water storage tanks
- Finished product liquid tanks

Sterile Air/Gas Feed

- Aseptic packaging
- Sparging

SPECIFICATIONS

Materials of Construction:

Membrane	PTFE
Support Layers	Polypropylene
Structure	Polypropylene

All components meet current USP criteria, and are thermally bonded to assure integrity.

Maximum Operating Differential Pressure:

Forward	70 psid (4.8 bar) @ 75°F (24°C)
	35 psid (2.4 bar) @ 140°F (60°C)
	20 psid (1.4 bar) @ 167°F (75°C)
Reverse	30 psid (2.1 bar) @ 75°F (24°C)

Bacteria Retention:

Proflow® II ABR mini-cartridges will provide a sterile effluent when challenged with up to $10^7/\text{cm}^2$ CFU of *Brevundimonas diminuta* per filter using an Aerosolized Bacteria Challenge methodology.

Autoclavable and Sanitizable:

Mini-cartridges can be autoclaved up to 50 times (60 minutes) at 275°F (135°C), or chemically sanitized in place using common sanitizing agents.

Integrity Test Values:

EFA	MINIMUM BUBBLE POINT*		MAXIMUM DIFFUSIONAL FLOW*		
	psig	bar	cc/min	TEST PRESSURE	
ft ² (cm ²)				psig	bar
3.1 (2880)	13	0.9	4	10	0.7

*In 60/40 IPA/DI Water

PROFLOW™ II ABR MINI CARTRIDGES

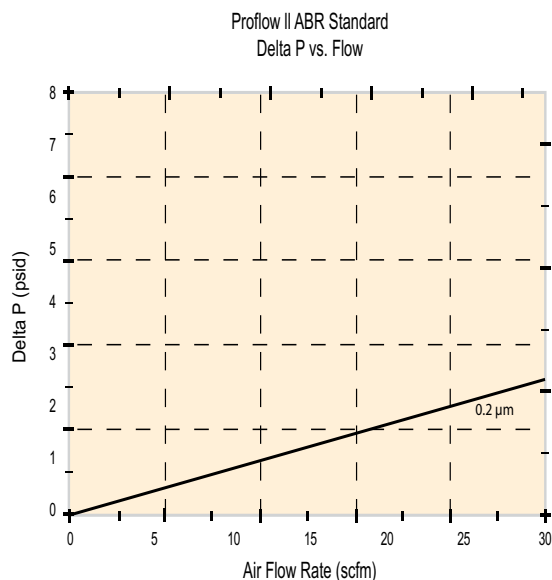
Pleated PTFE membrane cartridge for sterile venting and gas delivery

PERFORMANCE ATTRIBUTES

Typical Air Flow Rates

0.2 µm 14 scfm/psid (34.7 Nm³/h/1 mbar)

*At 75°F (24° C) and 15 psia (1 bar)



ORDERING INFORMATION

34 - M D P M M - 002 -

O-ring	
CODE	MATERIAL
0	Buna N
1	EPDM
2	Silicone
4	Viton®
N	None

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SPEC-34A-MC-FB Rev. E 9/07

PROFLOW™ II ABR MINI-CAPSULES

Pleated PTFE membrane capsules for sterile venting & gas delivery



Proflow® II Aerosol Bacterial Retentive (ABR) capsules are validated to produce sterile air for tank venting and air supply applications. These capsules exhibit some of the highest air flow rates of any sterilizing-grade filters, and are offered in a choice of three sizes to meet specific gas delivery requirements.

The encapsulated design maximizes efficiency by providing faster, easier changeout without laborious cleaning procedures. Eliminating the need to open reusable housings minimizes the chance of introducing contamination into the process.

BENEFITS

- High air flow rates for effective venting
- 100% integrity tested for reliable product performance
- Wide variety of filter sizes and fittings to meet most system requirements
- Custom ordering option allows different inlet/outlet fittings for specific needs
- Improved vent design eliminates the risk of vent caps breaking free under pressure

APPLICATIONS

- | | |
|--------------------------|-----------------------------|
| Sterile Venting | Sterile Air/Gas Feed |
| • Bioreactors/fermenters | • Aseptic packaging |
| • Formulation tanks | • Head space blanketing |
| • RO water storage tanks | • Blow/fill/seal |

SPECIFICATIONS

Materials of Construction:

Membrane	PTFE
Support Layers	Polypropylene
Structure	Polypropylene
Housing	Polypropylene

All components meet current USP criteria, and are thermally bonded to assure integrity.

Operating Differential Pressure:

Forward	70 psid (4.8 bar) @ 75°F (24°C)
	35 psid (2.4 bar) @ 140°F (60°C)
	20 psid (1.4 bar) @ 167°F (75°C)
Reverse	30 psid (2.1 bar) @ 75°F (24°C)

Autoclavable and Sanitizable:

Capsules can be autoclaved up to 50 times (60 minutes) at 275°F (135°C), or chemically sanitized in place using common sanitizing agents.

Bacteria Retention:

Proflow® II ABR capsules will provide a sterile effluent when challenged with up to 10^7 /cm² CFU of *Brevundimonas diminuta* per filter using an Aerosolized Bacteria Challenge methodology.

Standard Packaging Option:

- Non-sterile
- Pre-sterilized

Integrity Test Values:

Double size capsule

EFA	MINIMUM BUBBLE POINT*		MAXIMUM DIFFUSIONAL FLOW*		
	psig	bar	cc/min	TEST PRESSURE	
				psig	bar
3.1 (2880)	21	1.4	4	17	1.2

*In a 60/40 IPA/DI Water

PROFLOW™ II ABR MINI-CAPSULES

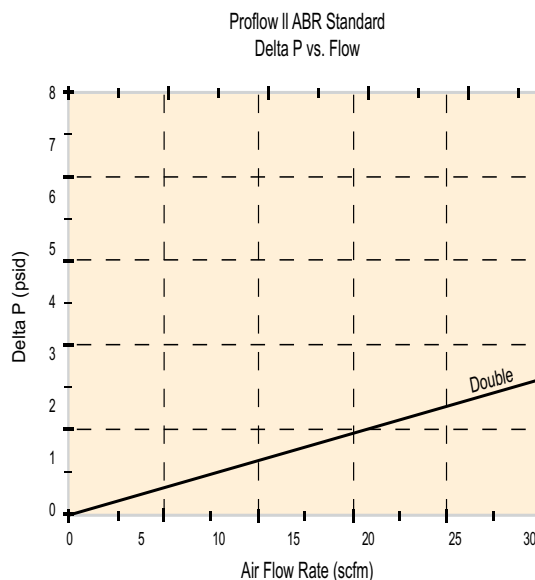
Pleated PTFE membrane capsules for sterile venting & gas delivery

PERFORMANCE ATTRIBUTES

Typical Air Flow Rates*

Double 0.2 µm 14 scfm/psid (34.7 Nm³/hr/100 mbar)

* At 75°F (24°C) and 15 psia (1 bar)



ORDERING INFORMATION

34	■	C	■	P	■	0	0	2	■	■	■
		Size		Inlet/ Outlet		Vent O-ring		Standard Packaging Options			
CODE		DESCRIPTION		CODE		DESCRIPTION		CODE		DESCRIPTION	
H		Half		B		1/4" Hose barb		0		Buna N	
S		Standard		H		1/2" Hose barb		1		EPR	
D		Double		S		1-1/2" Sanitary flange		2		Silicone	
				D		Quick Disconnect		4		Viton®	
				P		1/4" NPT (male)		5		FEP Encap Viton®	
				J		1/2" NPT (male)		6		FEP Encap Silicone	
				K		3/8" NPT (female)		N		None	
				G		Swagelok®		Z		No vents	

FULFLO® II CRYPTO PES

Pleated PES cartridges for cryptosporidium removal from water



Fulflo II Crypto PES utilizes the unique properties of a microbially retentive polyethersulfone membrane that provides absolute retention of *Cryptosporidium parvum* oocysts to meet the specific needs of the food and beverage and potable water industries.

The PES membrane has an asymmetrical pore structure with a high voids volume which offers unrivalled retention capacity, higher throughputs and higher flow rates than conventional membranes.

The microporous membrane is inherently hydrophilic and can be repeatedly integrity tested, providing a valuable quality assurance tool that fits well into a HACCP framework.

BENEFITS

- Specifically developed for the removal of *Cryptosporidium parvum* oocysts
- 1.0-micron absolute-rated polyethersulfone (PES) membrane
- High throughputs and flow rates
- Integrity testable
- Can be repeatedly steam sterilized or chemically sanitized
- 100% retention of *cryptosporidium* oocysts

APPLICATIONS

- Potable water
- Foods requiring *Cryptosporidium* removal
- Beverages requiring *Cryptosporidium* removal

SPECIFICATIONS

Materials of Construction:

Filtration Membrane	Polyethersulfone
Prefilter Support and Layer	Polyester
Outer Protection Cage	Polypropylene

Recommended Operating Conditions:

Up to 158°F (70°C) continuous operating temperature and higher short-term temperatures during CIP to the following limits: Capsules may be operated up to a temperature of 104°F (40°C) at line pressure up to 5.0 bar (73 psig) for gas applications.

Effective Filtration Area:

0.8 m² (8.4 ft²) per 250 mm (10 inch module)

Food and Biological Safety:

Materials conform to the relevant requirements of 21CFR Part 177 and current USP Plastics Class VI – 121°C and ISO10993 equivalents. Cryptoclear PLUS is listed in the Water Fittings and Materials Directive Part II as a WRAS* Approved Product.

* WRAS – Water Regulations Advisory Scheme BS6920 Test of Effect on Water Quality.

Cleaning and Sterilization:

Fulflo II Crypto PES cartridges can be repeatedly steam sterilized in situ or autoclaved at up to 266°F (130°C). They can be sanitized with hot water at up to 194°F (90°C) and are compatible with a wide range of chemicals.

For detailed operational procedures and advice on cleaning and sterilization, please contact the Technical Support Group through your usual Parker contact.

Integrity Test Data:

All filters are flushed with purified water prior to shipment. They are integrity testable to the following limits.

Micron Rating	Diffusional Flow		Max. Diffusional Flow	
	Test Pressure		(ml/min)	
	barg	psig		
1.0	0.6	9	10"	21.0
			K	9.8
			A	8.0
			B	3.9
			E	1.8

FULFLO® II CRYPTO PES

Pleated PES cartridges for cryptosporidium removal from water

PERFORMANCE ATTRIBUTES

Retention Characteristics:

The removal efficiencies of Fulflo II Crypto PES cartridges have been determined from tests conducted by Thames Water Utilities Limited on live *Cryptosporidium oocysts*.

Temperature		Maximum Forward Δp	
°F	°C	(bar)	(psi)
68	20	5.0	73
104	40	4.0	58
140	60	3.0	44
176	80	2.0	29
194	90	1.5	15
>100 (steam)	>212 (steam)	0.3	4

ORDERING INFORMATION

Cartridges

ZCCS



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100



Nominal Length	
CODE	Length (mm)
B	2.5" (65)
A	5" (125)
K	5" (125)
1	10" (250)
2	20" (500)
3	30" (750)
4	40" (1000)

End Caps	
CODE	DESCRIPTION
C	BF/ 226 Fin
D	222/ Fin
E	222/ Flat
G	M-0 222/ recessed blind end cap
R	S-28 222 (Tritab/ FIN)
T	Trueseal126 (Tabbed/flat)
Y	Demi Stub 116 (Internal/flat)
Z	Demi A & B Std.

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SPEC-FFIICP-FB Rev. A 9/07

FULFLO® II CRYPTO CAPSULE

Pleated PES capsules for cryptosporidium removal from water



Fulflo II Crypto PES provides absolute retention of *Cryptosporidium parvum* oocysts to meet the specific needs of the food and beverage and potable water industries.

Its membrane has an asymmetrical pore structure with a high voids volume which offers greater retention capacity higher throughputs and higher flow rates than conventional membranes.

The microporous membrane is inherently hydrophilic and can be integrity tested repeatedly, providing a valuable quality assurance tool that fits well into a HACCP framework.

BENEFITS

- Specifically developed for the removal of *Cryptosporidium parvum* oocysts
- 1.0-micron absolute-rated polyethersulfone membrane
- High throughputs and flow rates
- Repeatedly integrity testable
- Can be repeatedly steam sterilized or chemically sanitized
- 100% retention of cryptosporidium oocysts

APPLICATIONS

- Food and beverage
- Potable water

SPECIFICATIONS

Materials of Construction:

Filtration Membrane	Polyethersulfone
Prefilter and Support Layer	Polyester
Protection Core	Polypropylene

Food and Biological Safety:

Materials conform to the relevant requirements of 21CFR Part 177 and current USP Plastics Class VI – 121°C and ISO10993 equivalents. Cryptoclear PLUS is listed in the Water Fittings and Materials Directive Part II as a WRAS* Approved Product.

* WRAS – Water Regulations Advisory Scheme BS6920 Test of Effect on Water Quality.

Retention Characteristics:

The removal efficiencies of Fulflo II Crypto PES cartridges have been determined from tests conducted by Thames Water Utilities Limited on live *Cryptosporidium* oocysts.

Recommended Operating Conditions:

Up to 158°F (70°C) continuous operating temperature and higher short-term temperatures during CIP to the following limits: Capsules may be operated up to a temperature of 104°F (40°C) at line pressure up to 5.0 bar (73 psig) for gas applications.

Cleaning and Sterilization:

Capsules can be repeatedly autoclaved up to 266°F (130°C). They can be sanitized with hot water at up to 194°F (90°C) and are compatible with a wide range of chemicals.

For detailed operational procedures and advice on cleaning and sterilization, please contact Technical Services.

Integrity Test Data:

All filters are flushed with purified water prior to shipment. They are integrity testable to the following limits.

Micron Rating	Diffusional Flow		Max. Diffusional Flow	
	Test Pressure		(ml/min)	
	barg	psig		
1.0	0.6	9	10"	21.0
			K	9.8
			A	8.0
			B	3.9
			E	1.8

FULFLO® II CRYPTO CAPSULE

Pleated PES capsules for cryptosporidium removal from water

PERFORMANCE ATTRIBUTES

Temperature		Maximum Forward Δp	
°F	°C	(bar)	(psi)
68	20	5.0	73
104	40	4.0	58

ORDERING INFORMATION

ZECS  - 100  -  BN3

Nominal Length	
CODE	LENGTH (mm)
E	4.4" (113)
B	5.5" (140)
A	7.9" (200)

Inlet	
CODE	CONNECTION TYPE
T	1" Tri-Clamp
N	1/2" NPT Male
H	1/2" Hose barb
G	Stepped Hose barb
M	1/4" NPT Male

Outlet	
CODE	CONNECTION TYPE
T	1" Tri-Clamp
N	1/2" NPT Male
H	1/2" Hose barb
G	Stepped Hose barb
M	1/4" NPT Male

Supplied in packs of 3

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SPEC-FFII CCAP-FB Rev. A 9/07



PLEATED DEPTH FILTERS



ENGINEERING YOUR SUCCESS.

POLY-MATE™ PM/PXD

Quality and economical filtration for food and beverage applications



Parker's Poly-Mate™ cartridges incorporate a unique combination of polypropylene meltblown and spunbonded media to provide high surface area, finish-free and non-fiber-releasing filtration. All-polypropylene construction maximizes chemical resistance to acids, bases, salts, and most organic solvents.

BENEFITS

- High efficiency rated for critical food and beverage applications (99% efficiency)
- High pleated surface area for extended service life, low pressure drop and high flow capacity
- Optional stainless steel O-ring adapter inserts provide added strength for in situ sterilization. Poly-Mate™ Xtra Duty cartridges are available with backwashable construction, reducing replacement maintenance and cartridge disposal costs
- Poly-Mate™ Xtra Duty (PXD) cartridge features glass-filled polypropylene core for high temperature and high pressure use with rigid outer cage supporting pleated media in backwash applications
- All materials of construction are FDA listed as acceptable for potable and edible liquid contact according to CFR Title 21.
- One-piece, continuous to 40 in length, integrally sealed, pleated filter media

APPLICATIONS

- Food & Beverage
- Deionized water
- R.O. membrane prefiltration
- Process water

SPECIFICATIONS

Materials of Construction:

Filter Media and Support Layers	Polypropylene
Cage	PM - polypropylene netting PXD - polypropylene cage
Support Core	PM - polypropylene PXD - glass-filled polypropylene

Recommended Operating Conditions:

Poly-Mate™ Cartridges

Changeout ΔP	35 psid (2.4 bar)
Maximum Temperature	200°F (93°C)
Maximum ΔP @ 70°F (21°C)	60 psid (4.1 bar)
Maximum ΔP @ 200°F (93°C)	10 psid (0.7 bar)

Poly-Mate Xtra-Duty™ Cartridges

Maximum Temperature	200°F (93°C) @ 35 psid (2.4 bar) Changeout ΔP
	35 psid (2.4 bar)
Maximum ΔP @ 70°F (21°C)	90 psid (6.1 bar)
Maximum ΔP @ 200°F (93°C)	35 psid (2.4 bar)

Effective Filtration Area:

Up to 6.0 ft²/10 in (0.6 m²/254 mm)

Filtration Ratings:

99% at 0.5 μm , 1 μm , 5 μm , 10 μm , 30 μm , and 60 μm pore sizes

Recommended Maximum Flow Rate:

Maximum 10 gpm per 10 in length

POLY-MATE™ PM/PXD

Quality and economical filtration for food and beverage applications

Maximum Recommended Flow Rate:

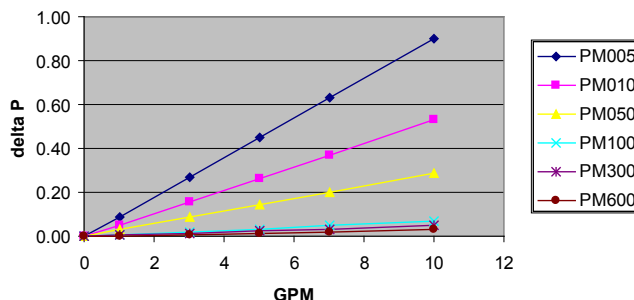
10 gpm per 10" length (9.5 lpm per 254 mm)

Poly-Mate™ PM/PXD Flow Factors

(psid/gpm @ 1 cks) per 10" cartridge

Rating (µm)	Flow Factor
0.5	0.0900
1.0	0.0530
5.0	0.0290
10.0	0.0068
30.0	0.0048
60.0	0.0030

Poly-Mate Flow vs. dP



ORDERING INFORMATION

Cartridge Code		Nominal Length		Support Construction		Seal Material		End Cap Configuration		Special Options	
CODE	TYPE	CODE	INCH (mm)	CODE	DESCRIPTION	CODE	DESCRIPTION	CODE	DESCRIPTION	CODE	DESCRIPTION
PM	Standard	9	9-5/8 (244)	A	Natural Polypropylene	A	Polyethylene Foam (DOE Gasket Only)	AR	020 O-ring/Recessed Cap	B	Bubble-Point Test
PXD	Xtra Duty	10	9-13/16 (249)	F	Glass Filled Polypropylene (core only)	E	EPR	DO	Double Open End (DOE)	R	DI Water Rinse (5 minutes)
		19	19-5/8 (498)			N	Buna-N	DX	DOE With Core Extender	Z6	Individual Poly Bag only
		20	19-15/16 (506)	G	304 Stainless Steel (core only)	V	Viton®	LL	120 O-ring/Recessed Cap	Z15	Individual Poly Bag 15/ctn. (20", 30", 40") (PXD only)
		29	29-1/4 (743)	N	Natural Polypropylene (All support components)	S	Silicone	LR	120 O-ring/Recessed Cap Std. open end/ polypro Spring Closed End	Z30	Individual Poly bag 30/ctn. (10") (PXD only)
		30	30-1/16 (764)	X	Coreless Cartridge	T	PFA Encapsulated Viton® (O-ring only)	OB	213 O-ring/Recessed Cap		
		39	39 (991)			V	Viton®	PR	226 O-ring/Flat Cap		
		40	40 (1016)			X	No Seal Material	SC	226 O-ring/Fin		
			2.5" (62.5mm) diameter					SF	222 O-ring/Fin		
								TC	Ext. core open end/ Polypro Spring Closed End		
								TF	S.S. Inserted 226 O-ring/Closed		
								XB	S.S. Inserted 226 O-ring/Fin		
								SSC	S.S. Inserted 222 O-ring/Closed		
								SSF	S.S. Inserted 226 O-ring/Fin		
								STC	S.S. Inserted 222 O-ring/Closed		
								STF	S.S. Inserted 226 O-ring/Fin		

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GLASS-MATE™ PMG FILTER CARTRIDGE

Absolute and economical filtration with pleated microfiberglass cartridges



Parker's Glass-Mate™ cartridges offer an economical choice for absolute-rated efficiency, high flow rate capability and long service life. A wide variety of construction components, end fittings and seal options make this product line ideal for prefiltration and point-of-use filtration for many food and beverage applications.

BENEFITS

- Absolute-rated media provides reliable removal efficiency
- Thermal bonding eliminates particle bypass
- Laminated media/support layer maximizes flow capacity and media utilization and minimizes media migration
- Variety of construction/seal options for increased compatibility
- End fitting options provide competitive housing retrofit capability
- All FDA listed components biosafe per USP Class V1-121°C Plastic Tests allows filtration of edible and potable liquids
- Optional stainless steel O-ring adapter inserts provide added stability for in situ sterilization
- High surface area yields high flow rate, low differential pressure
- Non-fiber-releasing media with minimal extractables provides high purity filtrate

APPLICATIONS

- Beer stabilization
- Wine clarification
- Food & Beverage
- R.O. prefiltration
- Coatings
- Sterile air
- Corn syrup

SPECIFICATIONS

Materials of Construction:

Filter Medium	Borosilicate microfiberglass with acrylic binder
Support/Drainage Layers	Spunbonded polyester; laminated on the downstream side

Recommended Operating Conditions:

Maximum Temperatures	
Glass Filled Polypropylene	200°F @ 35ΔP (93°C/2.4 bar)
Polyester	140°F @ 35ΔP (60°C/2.4 bar)
Stainless Steel	275°F @ 35ΔP (135°C/2.4 bar)
Changeout Differential Pressure	35 psi (2.4 bar)
Maximum Flow Rate	10 gpm per 10 in length (38 lpm/254 mm)
Design Flow Rate	2.5 gpm per 10 in length (9.5 lpm/254 mm)

Effective Filtration Area:

5 ft²/10 in (0.46 m²/254 mm) minimum

Maximum Differential Pressure:

Glass-Filled Polypropylene	90 psi @ 75°F (6.2 bar/24°C)
Polyester	70 psi @ 75°F (4.8 bar/24°C)

Biological Safety/Product Purity:

Meets USP XXIV Class VI safety requirements for plastics
All components FDA listed per CFR, Title 21
Non-fiber releasing per FDA

Sterilization/Sanitization:

Hot water ("F" construction): 180°F (82°C) for 30 minutes at maximum 15 psid (1 bar).
In-Line Steam/Autoclave ("F" construction with stainless steel sleeve) 60 minutes at 255°F (140°C) at 2 psid (0.14 bar) maximum pressure.

GLASS-MATE™ PMG FILTER CARTRIDGE

Absolute and economical filtration with pleated microfiberglass cartridges

Glass-Mate™ Cartridge Flow Factors

Rating (µm)	Flow Factor
0.45	.108
1	.102
2	.095
3	.090
5	.072
10	.060
20	.042
40	.018

Flow Rate and Pressure Drop Formulae:

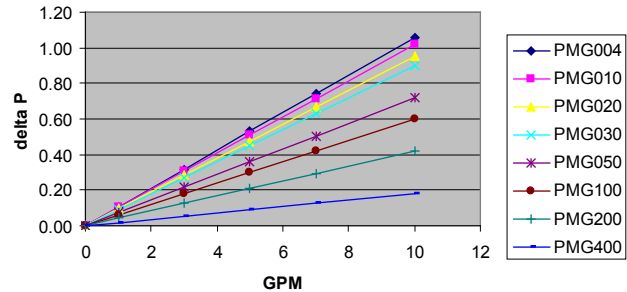
$$\text{Flow Rate (gpm)} = \frac{\text{Clean } \Delta P \times \text{Length Factor}}{\text{Viscosity} \times \text{Flow Factor}}$$

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

Notes:

1. Clean ΔP is PSI differential at start.
2. Viscosity is centistokes. Use Conversion Tables for other units.
3. Flow Factor is $\Delta P/\text{GPM}$ at 1cks for 10 inch (or single).
4. Length Factors convert flow or ΔP from 10 inch (single length) to required cartridge length.

Glass-Mate Flow vs. dP



ORDERING INFORMATION

PMG

Particle Removal Rating	
CODE	(µm)
002	0.2
004	0.45
010	1.0
020	2.0
050	5.0
100	10
200	20
400	40

Nominal Length	
CODE	LENGTH (mm)
9	9 5/8" (244)
10	9 13/16" (249)
19	19 5/8" (498)
20	19 15/16" (506)
29	29 1/4" (743)
30	30 1/16" (764)
39	39" (991)
40	40" (1016)

Support Construction	
CODE	DESCRIPTION
F	Glass Filled
	Polypropylene (core only)
P	Polyester

Seal Material	
CODE	DESCRIPTION
A	Polyethylene Foam (DOE Gasket Only)
E	EPR
N	Buna-N
S	Silicone
V	Viton®
X	No Seal Material

End Cap Configuration	
CODE	DESCRIPTION
AR	020 O-ring/Recessed Cap
DO	Double Open End (DOE)
DX	DOE With Core Extender
LL**	120 O-ring/Recessed Cap
LR**	120 O-ring/Recessed Cap
OB	Std. open end / Polypro Spring Closed End
PR**	213 O-ring/Recessed Cap
SC	226 O-ring/Flat Cap
SF	226 O-ring/Fin
TC	222 O-ring/Flat Cap
TF	222 O-ring/Fin
TX	222 O-ring/Flex Fin
XB	Ext. core open end/ Polypro Spring Closed End
SSC	S.S. Inserted 226 O-ring/Closed
SSF	S.S. Inserted 226 O-ring/Fin
STC	S.S. Inserted 222 O-ring/Closed
STF	S.S. Inserted 226 O-ring/Fin

** Available only in 9 5/8" (-9) and 19 5/8" (-19 lengths)

Special Options	
CODE	DESCRIPTION
Z6	Individual Poly Bag only
Z15	Individual Poly Bag 15/ctn. (20", 30", 40") (PXD only)
Z30	Individual Poly bag 30/ctn. (10")

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ABSO-MATE® PAB

Absolute, cost-effective filtration from all-polypropylene cartridges



Parker's Abso-Mate® cartridges provide the ultimate in economical filtration for even the most critical process fluids. The proprietary melt-blown media is rigidly controlled for reliable results time after time. Abso-Mate® cartridges are produced without adhesives that could contaminate fluids.

BENEFITS

- Absolute ratings for consistent and reliable performance (99.98%; $\beta = 5000$)
- Backwashable media reduces replacement maintenance and cartridge disposal costs.
- Abso-Mate® cartridges are non-fiber releasing and contain minimal extractables
- All materials of construction are FDA listed as acceptable for potable and edible liquid contact according to CFR Title 21
- One-piece construction eliminates bypass concerns on multi-length cartridges
- All-polypropylene construction provides wide compatibility with most chemicals, acids, bases and solvents

APPLICATIONS

- Membrane prefilter
- Food & beverage
- Water
- Waste water

SPECIFICATIONS

Materials of Construction:

Filter Media and Support Layers	Polypropylene
Bonding Polymer	None, completely fusion-sealed
Media Protection	Polypropylene cage
Support Core	Glass filled polypropylene

Maximum Recommended Operating Conditions:

Temperature	200°F (93°C)
Changeout ΔP	35 psi (2.4 bar)
ΔP @ 70°F (21°C)	90 psid (6 bar)
ΔP @ 200°F (93°C)	35 psid (2.4 bar)
Flow Rate	10 gpm (38 lpm) per 10 in length

Cartridge Dimensions:

Outside Diameter	2-1/2 in (63.5 mm)
Inside Diameter	DOE - 1-1/16 in (27 mm) SOE - 1 in (25.4 mm)

Effective Filtration Area:

Up to 7.2 ft²/10 in (0.7 m²/254 mm)

Biological Safety:

Meets USP XXI Class VI requirements for plastics
Nontoxic per WI-38 Human Cell Cytotoxicity Test

Sterilization Parameters:

Maximum 10 cycles @ 250°F (121°C)
for 15 minutes @ 15 psi (1.3 bar)
Hot water @ 180°F (82°C) for 30 minutes

ABSO-MATE® PAB

Absolute, cost-effective filtration from all-polypropylene cartridges

Performance Data by Cartridge Grade

Water ^t		Gas	Air Flow
ΔP		Efficiency	Rate
Micron	PSID @ 1 gpm/10 in	DOP Efficiency	SCFM @ 1 psid
A	0.2	99.999+	13
B	0.45	99.999+	25
C	1.0	99.999	10
D	2.0	99.999	34
E	5.0	99.900	126
F	10	93.500	320
G	20	80.000	362
H	40	53.000	400
J	70	18.000	400

Flow Rate and Pressure Drop Formulae:

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

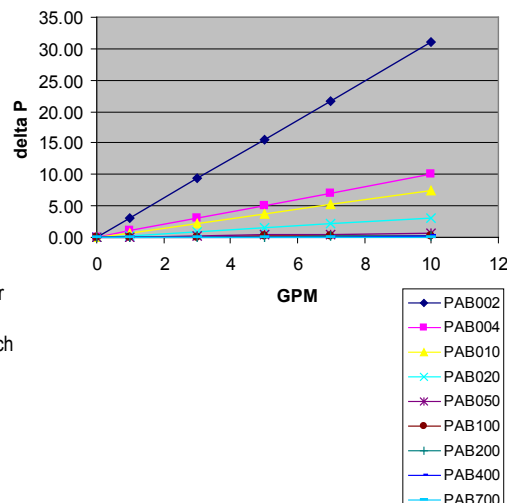
$$\text{Clean } \Delta P = \frac{\text{FlowRate} \times \text{Viscosity} \times \text{Flow Factor}}{\text{Length Factor}}$$

Notes:

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

* Pressure drops are for water @ 1.0 CKS and S.G. = 1. For other liquids multiply pressure drop by the viscosity in CKS

Abso-Mate Flow vs. dP



ORDERING INFORMATION

PAB

Particle Removal Rating		Nominal Length (in)		Support Construction		Seal Material		End Cap Configuration		Special Options	
CODE	μm	CODE	LENGTH (mm)	CODE	DESCRIPTION	CODE	DESCRIPTION	CODE	DESCRIPTION	CODE	DESCRIPTION
002	0.2	9	9-5/8" (244)	F	Glass filled	A	Polyethylene Foam (DOE Gasket Only)	AR	020 O-Ring/Recessed Cap	B	Bubble-Point Test
004	0.45	10	9-13/16" (249)		Polypropylene (core only)	E	EPR	DO	Double Open End (DOE)	R	DI Water Rinse (5 minutes)
010	1.0	19	19-5/8" (498)	G	304 Stainless Steel (core only)	N	Buna-N	DX	DOE With Core Extender	Z6	Individual Poly Bag only
020	2.0	20	19-15/16" (506)			V	Viton*	LL**	120 O-Ring/Recessed Cap		
050	5.0	29	29-1/4" (743)	N	Natural Polypropylene (All support components)	S	Silicone	LR**	120 O-Ring/Recessed Cap		
100	10	30	30-1/16" (764)			T	PFA Encapsulated Viton* (O-ring only)	OB	Std. open end / Polypro Spring Closed End		
200	20	39	39" (991)	X	Coreless Cartridge	V	Viton*	PR**	213 O-Ring/Recessed Cap		
400	40	40	40" (1016)			X	No Seal Material	SC	226 O-Ring/Cap		
700	70							SF	226 O-Ring/Fin		
								TC	222 O-Ring/Cap		
								TF	222 O-Ring/Fin		
								XB	Ext. core open end/ Polypro Spring Closed End		
								SSC	S.S. Inserted 226 O-Ring/Closed		
								SSF	S.S. Inserted 226 O-Ring/Fin		
								STC	S.S. Inserted 222 O-Ring/Closed		
								STF	S.S. Inserted 226 O-Ring/Fin		

** Available only in 9-3/8 (-9) and 19-5/8 (-19) lengths.

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SPEC-C-2047-FB Rev. A 9/07

PARMAX™

Large-diameter high-flow elements



The best of pleated and large diameter technologies are combined in Parker's ParMax™ high flow filter cartridges. ParMax™ cartridges are available with polypropylene and microfiberglass media in absolute (99.98%) ratings from 1 to 90 micron. The unique layered construction provides excellent retention across a wide range of flux rates. One-six inch diameter cartridge can handle up to 500 gpm flow (60" length). The inside-to-outside flow allows for a high contaminant holding capacity. High flow and a long filter life make the ParMax™ an ideal choice for a wide variety of critical process applications.

BENEFITS

- Large diameter yields much higher flow rates compared to traditional 2.5" filters
- High flow capacity permits use of fewer elements and cuts capital expenditure
- Inside-out flow pattern ensures positive capture of contaminants
- Absolute retention ratings for critical filtration
- All materials listed as acceptable for potable and edible contact according to CFR Title 21
- Manufactured with strict quality control
- Parker is an ISO9001:2000 Certified Division

APPLICATIONS

- Process water
- Water
- Spirits
- Food and beverage

SPECIFICATIONS

Materials of Construction:

Media	RCP - polypropylene RMG - microfiberglass
Support/Drainage	Polypropylene
Hardware	Polypropylene
O-rings	EPR, Buna-N, Viton®, silicone

Retention Ratings (99.98%):

1, 3, 4.5, 10, 20, 30, 40 and 90 µm

Maximum Operating Conditions:

Maximum Temperature
176°F (80°C) @ 30 psid (2.1 bar)

Maximum Differential Pressure:

70 psi (4.8 bar) @ 77°F (25°C)
30 psi (2.1 bar) @ 176°F (80°C)

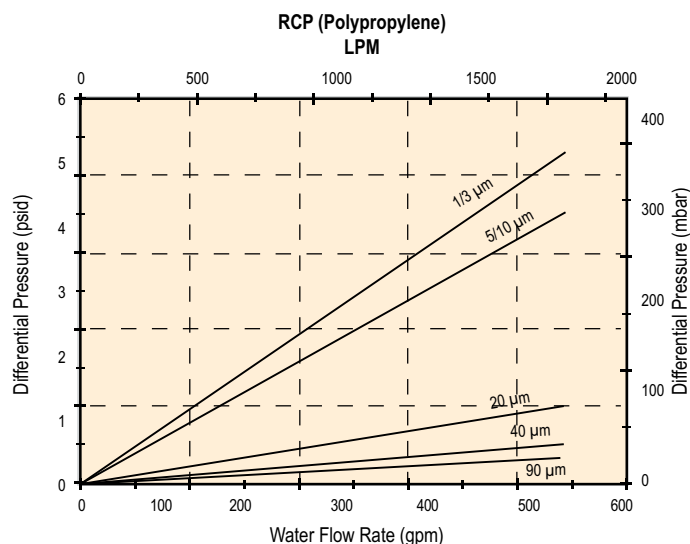
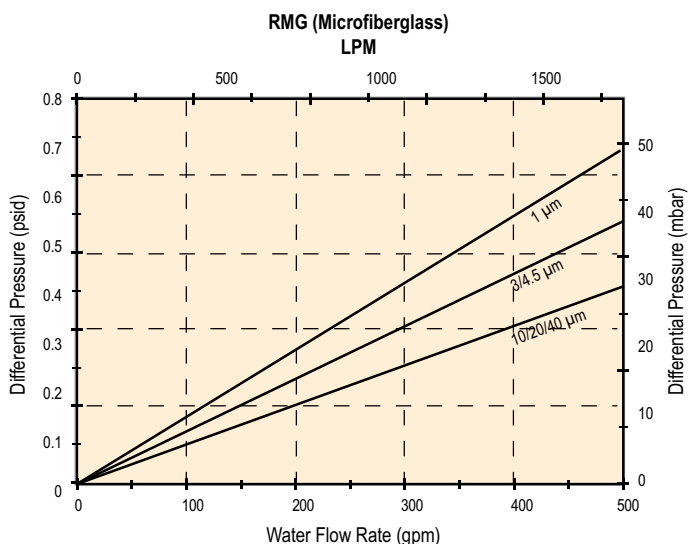
Recommended Operating Conditions:

Flow Rate
Up to 175 gpm (662 lpm)/20" element
Up to 350 gpm (1325 lpm)/40" element
Up to 500 gpm (1892 lpm)/60" element
Changeout Pressure 35 psid (2.41 bar)

PARMAX™

Large-diameter high-flow elements

PERFORMANCE ATTRIBUTES



ORDERING INFORMATION

Cartridge Code		Micron Rating		Length		Seal Material		End Cap Configuration	
CODE	DESCRIPTION	CODE	(µm)	CODE	LENGTH (CM)	CODE	DESCRIPTION	CODE	DESCRIPTION
RCP	Polypropylene	010	1.0	20	20" (50.8 cm)	E	EPR	PP	435 O-ring/ Closed
RMG	Glass	030	3.0	40	40" (101.6 cm)	N	Buna N		
		045	0.45	60	60" (152.4 cm)	S	Silicone		
		100	10			V	Viton®		
		200	20						
		400	40						
		900*	90						

*Available only in polypropylene media (RCP)

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SPEC-C2062 Rev. A 9/07

POLYFLOW®

Pleated polypropylene absolute-rated depth cartridges with superior dirt-holding capacity



Polyflow®'s random fiber polypropylene depth media provides long on-stream life and high retention efficiencies. While many polypropylene depth media are nominally rated and cannot meet their actual claimed retention efficiency, Polyflow® is engineered to meet exacting performance claims.

Parker's innovative research team developed an exclusive calendering process that produces media with unsurpassed dirt-loading capacity. Before each lot of media is fabricated, the best calendering conditions are determined to ensure minimal lot-to-lot variability and peak product performance. The number of pleats for each filter rating has also been optimized to ensure maximum dirt-loading capacity and on-stream life.

Polyflow® is thermally bonded from 100% virgin polypropylene to ensure superior cleanliness and excellent chemical and thermal compatibility under harsh processing conditions.

BENEFITS

- Low extractables
- Absolute particle retention provides excellent protection for downstream filters
- Broad chemical compatibility allows use in most applications
- High flow rate, long service life reduces processing time

APPLICATIONS

- General water filtration
- Beverage/wine clarification
- RO/DI prefiltration
- Waste water

SPECIFICATIONS

Materials of Construction:

Depth media	Polypropylene
Support layers	Polypropylene
Structure	Polypropylene

Maximum Differential Pressure/Temperature:

Forward	80 psid (5.5 bar) @ 75°F (24°C)
Reverse	40 psid (2.8 bar) @ 75°F (24°C)
	15 psid (1.0 bar) @ 140°F (60°C)

Effective Filtration Area:

2.4 ft² (0.22 m²)	5" (130 mm) cartridge
4.9 ft² (0.46 m²)	10" (250 mm) cartridge

Filtration Ratings:

The 0.6 µm offers typical retention up to 99% efficiency.
1.2 µm, 2.5 µm, 5 µm, 10 µm, 20 µm, and 40 µm are up to 99.9% efficient at specified pore size

Filtration Cleanliness:

Cartridge extractables
NVR < 35 mg per 10 inch (250 mm) cartridge

Maximum Operating Temperature:

160°F (71°C)

Steam Sterilizable and Sanitizable:

Cartridges can be steam sterilized for multiple cycles at 266°F (130°C) or sanitized for at least ten 30-minute cycles with 176°F (80°C) water. They are compatible with most sanitizing agents.

POLYFLOW®

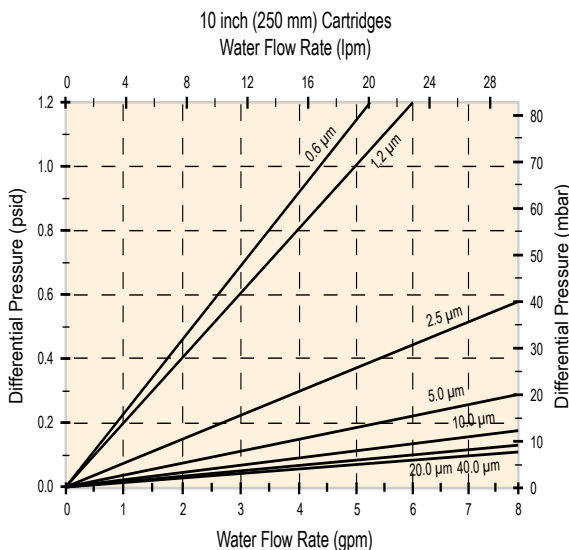
Pleated polypropylene absolute-rated depth cartridges with superior dirt-holding capacity

PERFORMANCE ATTRIBUTES

Water in Flow Rates, Typical *

0.6 µm	4.2 gpm/psid (23.3 lpm/100 mbar)
1.2 µm	5.0 gpm/psid (27.4 lpm/100 mbar)
2.5 µm	13.5 gpm/psid (74.1 lpm/100 mbar)
5.0 µm	26.0 gpm/psid (142.7 lpm/100 mbar)
10.0 µm	40.0 gpm/psid (219.6 lpm/100 mbar)
20.0 µm	50.0 gpm/psid (274.4 lpm/100 mbar)
40.0 µm	60.0 gpm/psid (329.3 lpm/100 mbar)

* Per 10-inch (250 mm) cartridge equivalent and for fluids with viscosity of 1cP



ORDERING INFORMATION

Each cartridge is identified with a product number, pore size and lot number for traceability.

22 – 0

Insert Style	
CODE	DESCRIPTION
1	None (STD)
5	Encapsulated 316L Stainless Steel
6	Encapsulated Polysulfone
A	Shortened 222 1/2"

End Fitting	
CODE	DESCRIPTION
0	DOE (CUNO®)
1	DOE
2	226/Flat
3	222/Flat
6	020/Internal/Flat
7	226/Fin
8	222/Fin
G	120/Internal/Recessed End cap
H	213/Recessed End cap (Ametek)
R	222/Recessed End cap

Nominal Length	
CODE	INCH (MM)
05	5" (125)
10	10" (250)
20	20" (500)
30	30" (750)
40	40" (1,000)

Filter Rating	
CODE	MICRON
006	0.6 µm
012	1.2 µm
025	2.5 µm
050	5.0 µm
100	10.0 µm
200	20.0 µm
400	40.0 µm

Gasket/O-rings	
CODE	MATERIAL
0	Buna N
1	EPDM
2	Silicone
4	Viton®
5*	FEP Encapsulated Viton®
6*	FEP Encapsulated Silicone
N	None

*O-rings only

Thickness (Gaskets Only)	
CODE	INCH (MM)
1	0.200" (5)
2	0.125" (3)
4	(1) 0.200" (5) &
5	(1) 0.125" (3)
N	No Gasket

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SPEC-22-P-FB Rev J 9/07

POLYFLOW®-G

All-polypropylene nominally rated depth cartridges for economical prefiltration



Polyflow®-G depth media has been developed for a wide variety of general process applications from fluid clarification to general prefiltration. Its high dirt-loading, random fiber polypropylene depth media provides consistent particle retention. Polyflow®-G is thermally bonded from 100% virgin polypropylene to ensure clean filtrates and excellent chemical and thermal compatibility in the most demanding processing conditions.

Polyflow®-G leads in overall reduction of filtration costs when compared to spunbonded, stringwound, and nominally rated pleated prefilter cartridges. Its longer filtration life reduces downtime due to fewer changeouts.

BENEFITS

- High flow rate and long service life reduce processing time
- Broad chemical compatibility allows use in most applications
- Thermally bonded construction minimizes extractables for cleaner filtrates

APPLICATIONS

- Liquid clarification
- General water filtration
- Beverage/wine clarification
- RO/DI prefiltration

SPECIFICATIONS

Materials of Construction:

Depth media	Polypropylene
Support layers	Polypropylene
Structure	Polypropylene

All components are thermally bonded to ensure integrity and reduce extractables

Maximum Differential Pressure/Temperature:

Forward	80 psid (5.5 bar) @ 75°F (24°C)
Reverse	40 psid (2.8 bar) @ 75°F (24°C)
	15 psid (1.0 bar) @ 140°F (60°C)

Nominal Filter Ratings:

0.2 µm, 0.5 µm, 1 µm, 3 µm, 10 µm, and 30 µm

Effective Filtration Area:

3.6 ft² (0.33 m²) per 10 inch (250 mm) cartridge

Cartridge Extractables:

NVR < 35 mg per 10 inch (250 mm) cartridge

Biological Safety:

All components meet USP specifications for Class VI-121°C Plastics criteria.

Maximum Operating Temperature:

160°F (71°C)

Bulk Packaging:

5'	12 per carton
10"	28 per carton
20"	12 per carton
30"	12 per carton
40"	9 per carton

POLYFLOW®-G

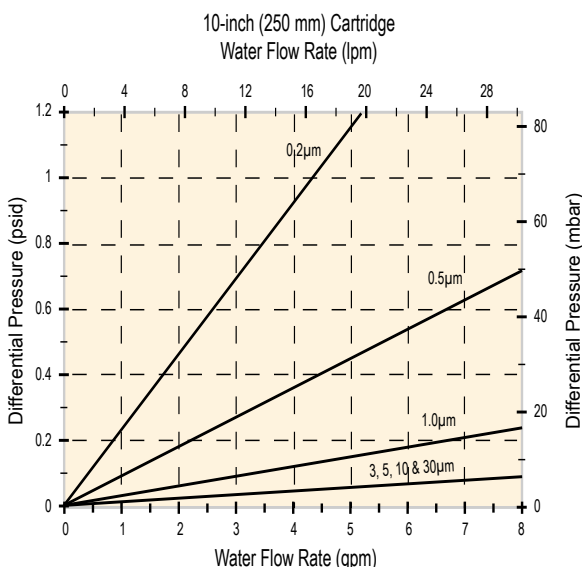
All-polypropylene nominally rated depth cartridges for economical prefiltration

PERFORMANCE ATTRIBUTES

Water in Flow Rates, Typical *

0.2 µm	4.2 gpm/psid (23.3 lpm/100 mbar)
0.5 µm	11.0 gpm/psid (60.4 lpm/100 mbar)
1.0 µm	33.0 gpm/psid (181.1 lpm/100 mbar)
3.0 µm	70.0 gpm/psid (384.2 lpm/100 mbar)
5.0 µm	70.0 gpm/psid (384.2 lpm/100 mbar)
10.0 µm	70.0 gpm/psid (384.2 lpm/100 mbar)
30.0 µm	70.0 gpm/psid (384.2 lpm/100 mbar)

* Per 10-inch (250 mm) cartridge equivalent and for fluids with viscosity of 1cP



ORDERING INFORMATION

Each cartridge is identified with a product number, pore size and lot number for traceability.

PG - 10

End Fitting	
CODE	DESCRIPTION
0	DOE (CUNO®)
1	DOE
2	226/Flat
3	222/Flat
6	020/Internal/Flat
7	226/Fin
8	222/Fin
G	120/Internal/Recessed
H	End Cap
R	213/Recessed End Cap (Ametek)
	222/Recessed End Cap

Nominal Length	
CODE	LENGTH
05	5" (125 mm)
10	10" (250 mm)
20	20" (500 mm)
30	30" (750 mm)
40	40" (1,000 mm)

Filter Rating	
CODE	MICRON
002	0.2 µm
005	0.5 µm
010	1.0 µm
030	3.0 µm
050	5.0 µm
100	10.0 µm
300	30.0 µm

Gasket/O-Rings	
CODE	MATERIAL
0	Buna N (Standard)
1	EPDM
2	Silicone
4	Viton®
5*	FEP Encapsulated Viton®
6*	FEP Encapsulated Silicone
N	None

*O-Rings only

Gasket Thickness	
CODE	DESCRIPTION
1	0.200" (5mm)
2	0.125" (3mm)
4	(1) 0.200" (5mm) & (1) 0.125" (3mm)
N	None

TECHNICAL SUPPORT AND PRODUCT INFORMATION

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POLYFLOW® MINI-CAPSULES

Encapsulated filters with polypropylene matrix for small-volume prefiltration applications



Polyflow® Capsules feature a random fiber polypropylene depth matrix that provides superior retention efficiencies. In addition, the unique calendering process produces depth media with unsurpassed dirt-holding capacity that extends filter service life. Longer life leads to increased savings by requiring fewer filter Changeouts.

Polyflow® capsules are available in three sizes, enabling users to match the filters to actual batch sizes and minimize system hold-up volume. Cost savings result from the reduction of lost product, and by scaling the process properly to avoid excess filter capacity.

The encapsulated design maximizes efficiency by providing faster, easier Changeout without laborious cleaning procedures. Eliminating the need to open reusable housings for cartridge replacement minimizes the chance of introducing contamination into the process.

BENEFITS

- High flow rate reduces processing time
- Long service life minimizes Changeout frequency
- Broad chemical compatibility enables use in most applications
- High retention efficiency provides excellent protection for downstream filters
- Non-pyrogenic (per LAL test) for use in critical applications
- Custom ordering option allows different inlet/outlet fittings for specific needs

APPLICATIONS

- General water filtration
- Vent filtration

SPECIFICATIONS

Materials of Construction:

Depth media	Polypropylene
Support layers	Polypropylene
Structure	Polypropylene
Housing	Polypropylene

All components meet USP-XXIV Class VI-121°C criteria, and are thermally bonded to ensure integrity and reduce extractables

Maximum Differential Pressure/Temperature:

Forward	70 psid (4.8 bar) @ 75°F (24°C)
	35 psid (2.4 bar) @ 140°F (60°C)
	20 psid (1.4 bar) @ 167°F (75°C)
Reverse	30 psid (2.1 bar) @ 75°F (24°C)

Effective Filtration Areas:

See reverse side for details

Filtration Efficiency:

1.2 µm, 2.5 µm, 5.0 µm, and 10.0 µm are 99.9% efficient at the specified pore size. The 0.6 µm capsule offers typical retention efficiency of up to 99%

Cartridge Extractables:

NVR < 3 mg per 10 inch (250 mm) capsule

Autoclavable and Sanitizable:

Can be autoclaved for up to 25 cycles at 275°F (135°C), or sanitized using most common cleaning agents

POLYFLOW® MINI-CAPSULES

Encapsulated filters with polypropylene depth matrix for small volume prefiltration applications

PERFORMANCE ATTRIBUTES

FILTER RATING	CAPSULE SIZE	NOMINAL EFA		TYPICAL WATER FLOW RATE*		TYPICAL AIR FLOW RATE	
		ft²	cm²	gpm/psid	lpm/100 mbar	scfm/psid	Nm³/hr/100 mbar
0.6 µm	Half	0.4	371	0.4	2.2	3.4	8.4
	Standard	0.7	650	0.8	4.4	5.9	14.6
	Double	0.9	836	1.0	5.5	7.6	18.8
1.2 µm	Half	0.6	371	0.8	4.4	4.5	11.1
	Standard	1.1	1021	1.4	7.7	8.3	20.5
	Double	1.6	1486	2.1	11.5	12.0	24.0
2.5 µm	Half	0.8	743	1.3	7.1	6.2	15.3
	Standard	1.5	1393	2.5	13.7	11.6	28.7
	Double	2.0	1858	3.3	18.1	15.4	38.1
5 µm	Half	0.8	743	2.3	12.6	7.6	18.8
	Standard	1.6	1486	4.5	24.7	15.2	37.6
	Double	2.1	1950	6.0	32.9	20.0	49.5
10 µm	Half	0.9	836	2.8	15.3	8.7	21.4
	Standard	1.6	1486	5.0	27.5	20.3	50.0
	Double	2.1	1950	6.5	35.7	26.6	65.7

*For fluids with viscosity of 1 cP and capsules with sanitary fittings.

ORDERING INFORMATION

Each cartridge is identified with a product number, pore size and lot number for traceability.

22 — C		B		—		—	
Size		Inlet / Outlet		Filter Rating		Vent O-Ring	
CODE	DESCRIPTION	CODE	END FITTING	CODE	MICRON	CODE	MATERIAL
H	Half Size	B	1/4" Hose Barb	006	0.6 µm	0	Buna N
S	Standard Size	H	1/2" Hose Barb	012	1.2 µm	1	EPDM
D	Double Size	S	1-1/2" Sanitary Flange	025	2.5 µm	2	Silicone
		D	Quick-Disconnect	050	5.0 µm	4	Viton®
		P	1/4" NPT (Male)	100	10.0 µm	N	None
		J	1/2" NPT (Male)				
		K	3/8" NPT (Female)				
		G	Swagelok® 1/2"				

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SPEC -22 CAPS-FB Rev N 9/07

POLYFLOW® MINI-CARTRIDGES

Small-volume filters with polypropylene depth matrix for prefiltration applications



Polyflow® mini-cartridges feature a random fiber polypropylene depth matrix that provides superior retention efficiencies. In addition, the unique calendering process produces depth media with unsurpassed dirt-holding capacity extending service life. Longer product life brings to increased savings by requiring fewer filter Changeouts.

Polyflow® mini-cartridges match popular batch sizes and minimize hold-up volume. Cost savings result from reduction of lost product and by scaling the process properly to avoid wasting excess filter capacity.

BENEFITS

- High flow rate reduces processing time
- Long service life minimizes Changeout frequency
- Broad chemical compatibility enables use in a range of applications
- High retention efficiency provides excellent protection for downstream filters
- Non-pyrogenic (per LAL test) for use in critical applications
- End fitting provides a secure O-ring seal (-116) available in a number of materials
- Low hold-up volume

APPLICATIONS

- Small scale prefiltration
- General water filtration
- Vent filtration

SPECIFICATIONS

Materials of Construction:

Depth Media	Polypropylene
Support Layers	Polypropylene
Structure	Polypropylene

Maximum Differential Pressure/Temperature:

Forward	70 psid (4.8 bar) @ 75°F (24°C)
	35 psid (2.4 bar) @ 140°F (60°C)
	20 psid (1.4 bar) @ 167°F (75°C)
Reverse	30 psid (2.1 bar) @ 75°F (24°C)

Filtration Efficiency:

The 0.6 µm offers typical retention efficiency of up to 97-99%
1.2 µm, 2.5 µm, 5.0 µm, and 10.0 µm are 99.9% efficient at the specified pore size.

Cartridge Extractables:

NVR < 3 mg per double size mini-cartridge

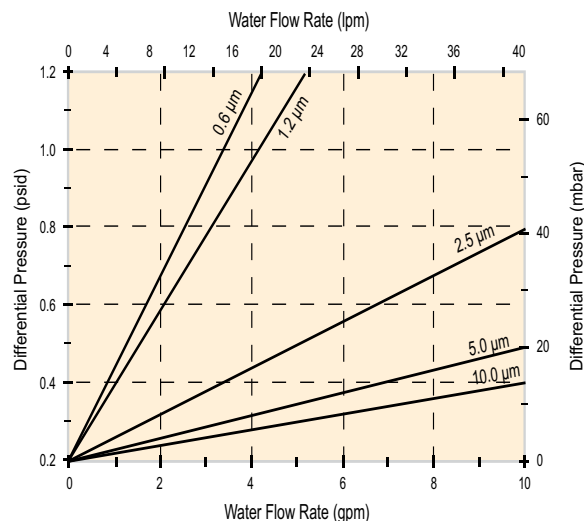
POLYFLOW® MINI-CARTRIDGES

Small volume filters with polypropylene depth matrix for prefiltration applications

PERFORMANCE ATTRIBUTES

FILTER RATING	NOMINAL EFA		TYPICAL WATER FLOW RATE*		TYPICAL AIR FLOW RATE	
	ft ²	cm ²	gpm/psid	lpm/100mbar	scfm/psid	Nm ³ /hr/100mbar
0.6 µm	0.9	836	1.0	5.5	7.6	18.8
1.2 µm	1.6	1486	2.1	11.5	12.0	24.0
2.5 µm	2.0	1858	3.3	18.1	15.4	38.1
5.0 µm	2.1	1950	6.0	32.9	20.0	49.5
10.0 µm	2.1	1950	6.5	35.7	26.6	65.7

*For fluids with viscosity of 1cP.



ORDERING INFORMATION

Each cartridge is identified with a product number, pore size and lot number for traceability.

22 — M B M M —

Filter Rating	
CODE	MICRON
006	0.6 µm
012	1.2 µm
025	2.5 µm
050	5.0 µm
100	10.0 µm

O-ring	
CODE	MATERIAL
0	Buna N
1	EPDM
2	Silicone
4	Viton®
6	FEP Encapsulated Silicone
N	None

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SPEC-22-MC-FB Rev G 9/07



WOUND FILTERS



ENGINEERING YOUR SUCCESS.

FULFLO® SWC FILTER CARTRIDGES

Economical filtration solutions with string-wound depth cartridges



Parker's SWC Filter cartridge offers a wide range of fibers and core materials. Roving is wound onto a center core for strength. The diagonal pattern of the media forms a tight, interlocking weave. Parker has one of the world's largest manufacturing plants for wound cartridges, offering superior quality with technical, engineering and marketing support.

BENEFITS

- Multiple length cartridges minimize changeout time, eliminate spacers and are available to fit competitive filter vessels
- Cotton and polypropylene materials are FDA listed as acceptable for potable and edible liquid contact according to CFR Title 21
- Continuous-strand roving geometry provides performance consistency
- Extended center core option eliminates the need for cartridge guides in competitive and Fulflo multi-cartridge vessels
- One-piece extended length center cores are available in tinned steel, 316 stainless steel and 304 stainless steel
- A special snap-in extender is available for polypropylene cores
- FDA grade polypropylene (DOE only) certified to ANSI/NSF61 standard for contact with drinking water components

APPLICATIONS

- Water
- Potable liquids
- Prefilter for R.O. membranes
- Vegetable oils

SPECIFICATIONS

Materials of Construction:

Polypropylene
Cotton

Maximum Recommended Operating Conditions:

Temperature

Polypropylene

200°F (93°C) with tinned steel or stainless steel cores

120°F (49°C) with polypropylene cores

Cotton

250°F (121°C) with tinned steel or stainless steel cores;

120°F (49°C) with polypropylene cores

Changeout ΔP 30 psi (2.1 bar)

ΔP @ Ambient Temperature 60 psi (4.1 bar)

Flow Rate 10 gpm (38 lpm) per 10-in length

Nominal Removal Ratings:

90% efficiency from 100 μm to 1 μm

Economical filtration solutions with string-wound depth cartridges

SWC Flow Factors
(psid/gpm @ 1 cps)

Flow Rate and Pressure Drop Formulae:

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

$$\text{Clean } \Delta P = \frac{\text{FlowRate} \times \text{Viscosity} \times \text{Flow Factor}}{\text{Length Factor}}$$

Notes:

1. **Clean ΔP** is PSI differential at start.
2. Viscosity is centistokes. Use Conversion Tables for other units.
3. Flow Factor is $\Delta P/\text{GPM}$ at 1cks for 10 inch (or single).
4. Length Factors convert flow or ΔP from 10 inch (single length) to required cartridge length.

SWC

[illegible]

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HONEYCOMB™ FILTER CARTRIDGES

Multi-purpose filtration solutions



Parker has been a leader in filter media innovation and performance since we invented the Honeycomb™ Filter tube over 65 years ago. Parker has the world's largest manufacturing capacity for wound cartridges, offering superior quality with technical, engineering and marketing support.

Effective removal ratings at nominal 90% efficiency from 0.5 µm to 150 µm range.

BENEFITS

- Multiple-length cartridges minimize Changeout time, eliminate spacers and are available to fit competitive filter vessels
- FDA grade polypropylene (DOE only) cartridges certified to ANSI/NSF61 standard for contact with drinking water components
- Continuous strand-winding geometry provides performance consistency
- One-piece metal extended center core option eliminates need for cartridge guides in all competitive and Fulflo® multi-cartridge vessels
- A special snap-in extender is available for polypropylene cores
- Cotton, rayon, polypropylene, nylon and polyester materials are FDA listed as acceptable for potable and edible liquid contact according to CFR Title 21
- Various O-ring and end cap options are available

APPLICATIONS

- Photo solutions
- Potable liquids
- Vegetable oils
- Amines
- Organic acids & solvents
- Prefilter for membranes
- Water

SPECIFICATIONS

Nominal Removal Ratings:

@ 90% efficiency from 0.5 µm to 150 µm

Maximum Recommended Operating Conditions:

Changeout ΔP	35 psi (2.1 bar)
ΔP @ Ambient Temperature	60 psi (4.1 bar)
Flow Rate	10 gpm (38 lpm) per 10-in length
Temperature	(See table on next page)

Dimensions:

1 in ID x 2-7/16 OD
3 in to 50-in lengths

Wound Depth Cartridge Design and Function

Wound cartridges provide true depth filtration utilizing thousands of tapered filtering passages of controlled size and shape. Each layer of roving contributes to true depth filtration by trapping its share of particles. Wound cartridges offer a gradual pressure increase during cartridge life versus surface-type media that have an abrupt flow cutoff when loaded. In addition, the irregular outer layer reduces surface blinding, assuring longer cartridge life and full cartridge dirt-holding capacity utilization.

HONEYCOMB™ FILTER CARTRIDGES

Multi-purpose Filtration Solutions

PERFORMANCE ATTRIBUTES

Rating (um)	Polypropylene Flow Factors	Cotton Flow Factors
0.5	0.9924	2.6590
1	0.7463	2.0000
3	0.3330	0.6250
5	0.2381	0.3636
10	0.1429	0.1931
20	0.0898	0.1075
30	0.0704	0.0855
50	0.0595	0.0709
75	0.0538	0.0645
100	0.0500	0.0624

Wound Cartridge Nominal Micrometer Ratings

Density Rating	Rating (um)	Compressed Air and Gas Micron Rating
8R	100	15
10R	75	13
11R	50	12
12R	40	11
13R	30	10
15R	20	7
17R	15	5
19R	10	3
21R	7	2.5
23R	5	2
27R	3	1
39R	1	<1
Ultrafine (C, E, M, T, WC)	0.5	<0.5

Flow Rate and Pressure Drop Formulae:

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

$$\text{Clean } \Delta P = \frac{\text{FlowRate} \times \text{Viscosity} \times \text{Flow Factor}}{\text{Length Factor}}$$

Notes:

1. **Clean ΔP** is PSI differential at start.
2. Viscosity is centistokes. Use Conversion Tables for other units.
3. Flow Factor is ΔP/GPM at 1cks for 10 inch (or single).
4. Length Factors convert flow or ΔP from 10 inch (single length) to required cartridge length.

ORDERING INFORMATION

Filter Medium		Filter Rating		Nominal Length		Core Cover Material		End Cap Configuration		Packaging Options	
CODE	DESCRIPTION	DENSITY	MICRON	LENGTH	IN (mm)	CODE	MATERIAL	CODE	MATERIAL	CODE	MATERIAL
No Symbol	Cotton (FDA)	6R	150	3	3	No Symbol	No Cover	None	DOE (with out gaskets)	Z	Individual
E	FDA Grade Rayon	8R	100	4	4	B	Nylon	DO	DOE (with gaskets)	TIS	Poly Bag
M	FDA Grade Polypropylene	10R	75	5	5	V	Nonwoven Polyester	OB	Std. Open End Polypro		Tissue Wrap
N	Nylon (FDA)	11R	50	6	6	W	Cellulosic Paper		Spring Closed End		
S	Polyester (FDA)	12R	40	7	7	Y	Polypropylene	TC	222/Flat Cap		
		13R	30	8	8			TF	222/Fin		
		14R	25	9-4	9 7/8			SC	226/Flat Cap		
		15R	20	10	10			SF	226/Fin		
		17R	15	19-4	19 1/2			XA	Polypro Extender		
		19R	10	20	20			XB	Ex. Core Open End/		
		21R	7	29-4	29 1/4			XC	Polypro Spring Closed End		
		23R	5	30	30 3/16				Extended Metal		
		27R	3	39-4	39						
		39R	1	40	40 3/16						
				50	50						
Core Material		Nominal Cartridge Diameter		Seal Material							
CODE	DESCRIPTION	CODE	MATERIAL	CODE	MATERIAL						
No Symbol	Tinned Steel	No Symbol	1 in ID x 2 7/16 in OD	None	Standard DOE						
A	Polypropylene	2	1 in ID x 2 11/16 in OD	A	Poly Foam						
A3	Glass-Filled Polypropylene	45	1 in ID x 4 1/2 in OD	E	EPR						
G	304 Stainless Steel		(9 7/8 and 20 in length only)	N	Buna N						
S	316 Stainless Steel		for Fulflo LTG	S	Silicone						
SR	Passivated 316 SS (Special Order)		and Ametek Big Blue Vessels	V	Viton*						

HONEYCOMB™ ULTRAFINE CARTRIDGES

Multi-purpose filtration solutions with Parker's wound depth filter cartridges



Parker has been a leader in filter media innovation and performance since we first invented the Honeycomb™ Filter tube over 65 years ago. Parker has the world's largest manufacturing capacity for wound cartridges, offering superior quality with technical, engineering and marketing support.

Effective removal ratings at nominal 90% efficiency at 0.5 μm .

BENEFITS

- A broad range of media provides excellent compatibility with a variety of organic solvents, animal, petroleum and vegetable oils
- Optional core covers and end treatments assure fiber migration control
- Multiple-length cartridges minimize Changeout time, eliminate spacers, and are available to fit competitive filter vessels
- FDA grade polypropylene (DOE only) cartridges certified to ANSI/NSF61 standard for contact with drinking water
- Continuous strand-winding geometry provides performance consistency
- One-piece metal extended center core option eliminates need for cartridge guides in all competitive and Fulflo® multicartridge vessels
- A special snap-in extender is available for polypropylene cores
- Cotton, polypropylene materials are FDA listed as acceptable for potable and edible liquid contact according to CFR Title 21
- Various O-ring and end cap options are available

APPLICATIONS

- Prefilter for membranes
- Rinse water in semiconductor manufacturing
- Fine filtration for ultrasonic parts, washer solvents and other high-purity solvents
- Prefilter for industrial reverse osmosis equipment

SPECIFICATIONS

Nominal Removal Ratings:

@ 90% efficiency 0.5 μm

Maximum Recommended Operating Conditions:

Changeout ΔP	30 psi (2.1 bar)
ΔP @ Ambient Temperature	60 psi (4.1 bar)
Flow Rate	10 gpm (38 lpm) per 10 in length
Temperature	(See table on next page)

Dimensions:

1 in ID x 2-7/16 OD
3 in to 50-in lengths

Wound Depth Cartridge Design and Function

Wound cartridges provide true depth filtration utilizing thousands of tapered filtering passages of controlled size and shape. Each layer of roving contributes to true depth filtration by trapping its share of particles. Wound cartridges offer a gradual pressure increase during cartridge life versus surface-type media that have an abrupt flow cutoff when loaded. In addition, the irregular outer layer reduces surface blinding, assuring both longer cartridge life and full cartridge dirt-holding capacity utilization.

Ultrafine Wound Depth Cartridges for Critical Filtration Applications

Ultrafine cartridges are a unique member of the Honeycomb™ wound depth cartridge family. They are specifically designed for critical filtration applications in the 0.5 μm range. When absolute 0.5 μm filtration is required, the nominal ultrafine cartridge can be used as a prefilter, significantly extending membrane life. Ultrafine cartridges remove 90% of particles larger than 0.5 μm in size. This type of filtration provides excellent protection for equipment or processes that must be protected from fine particles.

HONEYCOMB™ ULTRAFINE CARTRIDGES

Multipurpose filtration solutions with Parker's wound depth cartridges

PERFORMANCE ATTRIBUTES

Maximum Operating Temperature @ 35 psid

Cartridge Material	Metal Core	Polypropylene Core	Glass-Filled Polypropylene
Cotton	250°F (121°C)	120°F (49°C)	—
Polypropylene	200°F (93°C)	120°F (49°C)†	200°F (93°C)
Rayon	250°F (121°C)	120°F (49°C)	—

Note: Refer Material Selection Guide for additional compatibility information.

Ultrafine Flow Factor

Cotton	2.6890
Polypropylene	0.9924

ORDERING INFORMATION

Filter Medium		Nominal Length		Core Material		Core Cover Material		End Cap Configuration	
CODE	DESCRIPTION	CODE	INCH (MM)	CODE	DESCRIPTION	CODE	DESCRIPTION	CODE	DESCRIPTION
C	Cotton (FDA Grade)	9-4	9-7/8 (249)	None	Tinned Steel	Blank	No Cover	None	DOE (without gaskets)
E	Rayon (FDA Grade)	10	10 (254)	A	Polypropylene	B	Nylon	DO	DOE (With Gaskets)
M	Polypropylene (FDA grade)	19-4	19-1/2 (495)	A3	Glass Filled Polypropylene	V	Non-Woven Polyester	TC	222/Closed
		20	20 (508)	G	304 Stainless Steel	W	Cellulosic Paper	OB	Std. Open End/Polypro Spring Closed End
		29-4	29-1/4 (743)	S	316 Stainless Steel	Y	Polypropylene	TF	222/Fin
		30	30-3/16 (762)					SC	226/Closed
		39	39 (991)					SF	226/Fin
		40	40-3/16 (1016)					XA	Polypro Extender
								XB	Ex.Core Open End/Polypro Spring Closed End
								XC	Extended Metal



MELTBLOWN FILTERS



ENGINEERING YOUR SUCCESS.

MEGABOND PLUS™

Fixed-pore structure depth cartridges with high dirt-holding capacity & absolute rated filtration efficiency



Parker's MegaBond Plus™ are absolute-rated depth cartridges. Using a new, innovative manufacturing process, the MBP has higher Dirt-holding capacities offering long service life and virtually no contaminant migration. The MBP has a fixed core inner structure of thermally-bonded, continuous microfine polypropylene fibers. The outer layer fixed pore structure has been modified to maximize the graded density surface area and enhance dirt-holding capacity.

BENEFITS

- Fixed pore structure provides absolute-rated filtration, consistent production yields and absolute particle retention
- Microfine, thermally-bonded fiber construction provides superior filtration and often eliminates the need for circulation to achieve product clarity
- Non-fiber-releasing, continuous fiber matrix prevents media migration and ensures consistent production yields and overall quality filtration performance
- No surfactants or binders are present to interrupt product quality or cause foaming
- DOE cartridges have polyolefin gaskets thermally bonded to both ends, eliminating fluid bypass between the cartridge and the vessel seal
- Superior inter-layer bonding eliminates contaminant unloading and channeling
- Unique outer graded density structure increases dirt-holding capacity
- Polypropylene fiber provides broad chemical compatibility for a variety of applications
- All materials of construction are FDA listed as acceptable for potable and edible liquid contact according to CFR Title 21
- Pore size differentiation is achieved using fibers of differing diameters and maintaining uniform density throughout the cartridge
- Pore sizes do not change as ΔP increases during service, providing consistent particle retention

APPLICATIONS

- Membrane prefiltration
- DI water
- Food & Beverages
- Drinking water

SPECIFICATIONS

Materials of Construction:

Media	100% melt-blown Polypropylene
Center Support Core/End Caps	Polypropylene
Thermally Bonded Gaskets	Polyolefin closed cell foam

Maximum Recommended Operating Conditions:

Temperature	
@ 60 psid (4.1 bar)	80°F (27°C)
@ 35 psid (2.4 bar)	160°F (71°C)
@ 15 psid (1.0 bar)	200°F (93°C)
Flow Rate	10 gpm (38 lpm) per 10-in length
Changeout ΔP	35 psi (2.4 bar)
Operating Pressure	
@ Ambient Temperature	60 psid (4.1 bar)

MEGABOND PLUS™

Fixed pore structure depth cartridges with high dirt-holding capacity, absolute-rated

PERFORMANCE ATTRIBUTES

MBP Flow Factors

Aqueous Service Rating
per 10 in PSI/GPM
Cartridge (µm)

1	2.17
3	1.60
5	0.90
10	0.32
15	0.16
20	0.12
30	0.10
40	0.05
70	<0.05
90	<0.04
120	<0.03

Flow Rate and Pressure Drop Formulae:

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

$$\text{Clean } \Delta P = \frac{\text{FlowRate} \times \text{Viscosity} \times \text{Flow Factor}}{\text{Length Factor}}$$

Notes:

1. Clean ΔP is PSI differential at start.
2. Viscosity is centistokes. Use Conversion Tables for other units.
3. Flow Factor is $\Delta P/\text{GPM}$ at 1 cks for 10 inch (or single).
4. Length Factors convert flow or ΔP from 10 inch (single length) to required cartridge length.

ORDERING INFORMATION

MBP

M

Micron Rating	
CODE	(µm)
1	1
3	3
5	5
10	10
15	15
20	20
30	30
40	40
70	70
90	90
120	120

Nominal Length	
CODE	INCH (MM)
9-4	9-3/4 (248)
10	10 (254)
19-4	19 1/2 (495)
20	20 (508)
29-4	29 1/4 (743)
30	30 (762)
39-4	39 (991)
40	40 (1016)

Support Construction	
CODE	DESCRIPTION
N	FDA natural polypropylene Core and end caps
G	Stainless Steel (core only)

End Cap Configuration	
CODE	DESCRIPTION
None	Standard DOE/Polyfoam
AR	020 Flat
DO	DOE (gasket other than polyform)
DX	DOE with Polypro core extender
LL *	120/120 (Both Ends)*
LR*	120 O-ring/ Recessed*
OB	Std. Open End/Polypro Spring End Closed
PR	213 O-ring/ Recessed*
SC	226 O-ring/Closed
SF	226 O-ring/Fin
SSC	S.S. Insert 226/Flat cap
SSF	S.S. Inserted 226 O-ring/Fin
STC	S.S. Inserted 206/Fin
STF	O-ring/Fin 222/Closed 222/Fin
STX	S.S. inserted 222 O-ring/Flex Fin
TC	222 O-ring/Flat cap
TF	222/Fin
TX	222/Flex Fin
XA	DOE w/extended core
XB	Extended Core Open End/polypro spring closed end

Seal Material	
CODE	DESCRIPTION
None	Polyfoam (DOE Only)
E	EPR
N	Buna N
S	Silicone (O-ring only)
T	PFA Encapsulated
V	Viton® (222,226 O-ring only)

* Available only in 9 3/4" (9-4) and 19 1/2" (19-4) lengths.

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DURABOND™

Economical filtration with high-strength thermally-bonded depth cartridges



Parker's DuraBond™ cartridges are the most economical high-strength filter cartridges available. Featuring an integral rigid, thermally-bonded construction, the DuraBond™ provides consistent filtration for a wide variety of fluids. Fulflo Durabond cartridges are available in nominal ratings (90%) of 1, 3, 5, 10, 25, 50, 75 and 100 microns.

BENEFITS

- Fixed pore structure provides efficiency, integrity and optimum particle retention
- Thermally-bonded bicomponent fiber matrix provides rigid, dimensionally stable construction without fiber migration
- Rigid construction eliminates contaminant unloading and channeling
- Corrugated porous surface maximizes dirt-holding capacity
- Silicone-free construction will not change coating properties
- FDA grade polypropylene (DOE only) certified to ANSI/NSF61 standard for contact with drinking water
- Polyolefin construction provides broad chemical compatibility for a variety of applications
- All materials of construction are FDA listed as acceptable for potable and edible liquid contact according to CFR Title 21
- DuraBond™ cartridges can be easily disposed by shredding, incinerating or crushing
- Double-open-end style is self-sealing without separate gasket material

APPLICATIONS

- Potable water
- DI water
- R.O. prefiltration
- Membrane prefiltration
- Food & beverages

SPECIFICATIONS

Materials of Construction:

Filter Medium	Thermal bonded bi-component matrix of polypropylene/polyethylene
End Caps/Adapters (optional)	Polyolefin copolymer

Dimensions:

1-1/16 in (27 mm) ID x 2-7/16 (62 mm) in OD
10, 20, 30, 40, and 50 in continuous nominal lengths.

Maximum Recommended Operating Conditions:

Temperature	175°F (80°C)
Pressure	100 psid (6.8 bar)@72°F (27°C) 50 psid (3.4 bar)@175°F (80°C)
Flow rate	10 gpm (38 lpm) per 10-inch length
Changeout ΔP	30 psi (2.1 bar)

DURABOND™

Economical filtration with high-strength, thermally bonded depth cartridges

PERFORMANCE ATTRIBUTES

DBC Flow Factors

Rating (µm)	Aqueous Service PSID/ GPM per 10-in Cartridge
1	0.109
3	0.087
5	0.073
10	0.058
25	0.031
50	0.022
75	0.015
100	0.012

Flow Rate and Pressure Drop Formulae:

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

$$\text{Clean } \Delta P = \frac{\text{FlowRate} \times \text{Viscosity} \times \text{Flow Factor}}{\text{Length Factor}}$$

Notes:

1. **Clean ΔP** is PSI differential at start.
2. Viscosity is centistokes. Use Conversion Tables for other units.
3. Flow Factor is ΔP/GPM at 1cks for 10 inch (or single).
4. Length Factors convert flow or ΔP from 10 inch (single length) to required cartridge length.

ORDERING INFORMATION

DBC

Micron Rating	
CODE	(µm)
1	1
3	3
5	5
10	10
15	15
20	20
30	30
40	40
70	70
90	90
100	100

M

Nominal Length	
CODE	INCH (MM)
9-4	9-3/4 (248)
10	10 (254)
19-4	19 1/2 (495)
20	20 (508)
29-4	29 1/4 (743)
30	30 (762)
39-4	39 (991)
40	40 (1016)

End Cap Configuration	
CODE	DESCRIPTION
None	DOE w/o gasket
AR	020 O-ring (recessed)
DO	DOE with gaskets
LL*	120 O-ring (Both Ends)*
LR*	120 O-ring/ Recessed*
OB	Std. Open End/Polypro
PR*	Spring End Closed
SC	213 O-ring/ Recessed*
SF	226 O-ring/Flat Cap
TC	222 O-ring/Flat Cap
TF	222 O-ring/Fin
TX	222 O-ring/Flex fin
XA	DOE w/Core Extender
XB	EXT. Core Open End/Polypro
	Spring Closed End

Seal Material	
CODE	DESCRIPTION
None	No gasket (DOE Only)
N	Poly Foam Gasket with Collars (DO Only)
E	EPR
N	Buna N
S	Silicone
T	PFA Encapsulated
V	Viton® (222,226 O-ring only)
N	Viton®
N	Poly Foam Gasket (DO Only)

* Available only in 9 3/4" (9-4) and 19 1/2" (19-4) lengths.

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AVASAN™ FILTER CARTRIDGES

High purity melt-blown depth cartridges



Avasan™ (AVS) cartridges are manufactured by a proprietary melt-blown manufacturing process using a specially formulated polypropylene. This formulation provides a uniquely graded-density filter cartridge designed for high purity applications. The fiber matrix of the cartridge has been engineered to provide structural integrity throughout the filter's long service life. The finish-free construction provides optimum fluid purity and eliminates foaming. Avasan's broad fluid compatibility and graded density pore matrix make it the economical filter choice for high clarity requirements.

BENEFITS

- Graded density construction provides consistent filtrate quality and excellent particle retention
- Continuous bonding of fibers throughout the filter matrix ensures non-fiber-releasing construction
- Superior inter-layer bonding provides true three-dimensional filtration and a construction that does not compress with increasing pressure
- All-polypropylene construction
- Finish-free construction provides optimum fluid purity and eliminates foaming
- All materials are biosafe in accordance with USP Class VI-121°C Plastic Test
- All materials listed as acceptable for potable and edible according to CFR Title 21
- Parker Division is ISO9000:2000 Certified

APPLICATIONS

- DI water
- Food & beverages
- R.O. prefiltration
- Potable water

SPECIFICATIONS

Materials of Construction

Filter Medium	100% melt-blown polypropylene
End Caps/Adapters (optional)	polyolefin copolymer
Seal Options	Various; refer to Ordering Information

- All materials of construction are FDA listed as acceptable for potable and edible liquid contact according to CFR Title 21.
 - Pending Certifications: NSF - Materials only

Maximum Recommended Operating Conditions

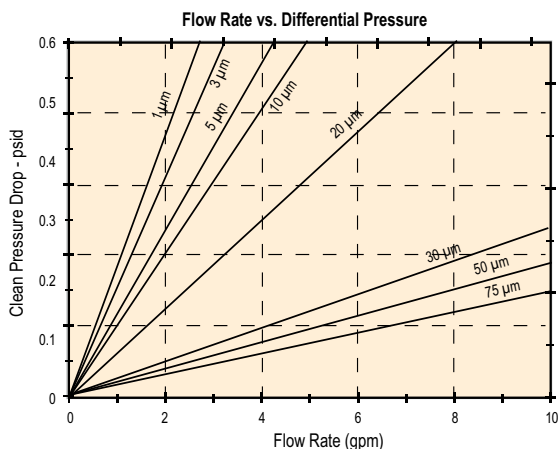
Temperature	
@ 50 psid (3.45 bar)	80°F (27°C)
@ 25 psid (1.7 bar)	140°F (60°C)
Changeout ΔP	35 psi (2.1 bar)

AVASAN™ FILTER CARTRIDGES

High purity melt-blown depth cartridges

PERFORMANCE ATTRIBUTES

Water Flow Rates



ORDERING INFORMATION

AVS



M



Micron Rating	
CODE	(µm)
1	1
3	3
5	5
10	10
20	20
30	30
50	50
75	75

Filter Medium
M = FDA Grade Polypropylene

Nominal Length	
CODE	IN (mm)
4	4 (102)
9.75	9.75 (248)
10	10 (254)
19.5	19.5 (495)
20	20 (508)
29.25	29.25 (743)
30	30 (762)
39	39 (991)
40	40 (1016)

End Cap Configuration	
CODE	DESCRIPTION
None	None
DO	DOE (w/gaskets)
LL	120 O-ring (Both Ends)**
LR	20 O-ring/Recessed**
OB	Std. Open End/Polypro Spring Closed End
PR	213 O-ring/Recessed**
SC	226 O-ring/Flat Cap
SF	226 O-ring/Fin
TC	222 O-ring/Flat Cap
TF	222 O-ring/Fin
TX	222 O-ring/Flex Fin
XA	DOE with Core Extender
XB	Ext. Core Open/Polypro Spring Closed End

Seal Material	
CODE	DESCRIPTION
A	Poly Foam gaskets with Collars (DO only)
E	EPR
N	Buna-N
S	Silicone
T	PFA Encapsulated Viton* (222, 226 O-Ring Only)
V	Viton*
W	Poly Foam gaskets without Collars (DO only)

TECHNICAL SUPPORT AND PRODUCT INFORMATION

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METALLIC FILTERS



ENGINEERING YOUR SUCCESS.

FULFLO® METALLIC FILTER CARTRIDGES

Optimize process filtration with high-integrity metallic cartridges



Parker's Fulflo® stainless steel cartridges provide the optimum filtration solution for liquids and gases in high temperature and high flow rate applications.

Available in cylindrical or pleated designs, cleanable stainless steel cartridges are the logical choice when natural and synthetic media cartridges cannot meet aggressive process conditions.

Fulflo® reusable 304 and 316 stainless steel cartridges offer versatility of choice with fourteen nominal removal ratings, six standard lengths and a variety of end configurations and seal materials.

BENEFITS

- Dimensional integrity of stainless steel media accommodates high flow rate and high temperature systems
- Cartridges can be cleaned and reused
- Variety of seal configurations allow retrofit in many filter vessel designs
- Welded and crimped construction eliminates the need for adhesives which can be a contaminant source and limit temperature range
- Pleated surface maximizes filtration area for longer service life
- Plain (cylindrical) surface provides ease of cleaning
- Optional perforated stainless steel pleat protective sleeves minimize handling damage
- Meets FDA guidelines for use with potable liquids

APPLICATIONS

- Process steam
- Viscous fluids
- High temperature processes

SPECIFICATIONS

Materials of Construction:

Filter	Medium stainless steel wire cloth
Structural Components	100% stainless steel
Construction Method	Welded and crimped (no adhesives)

Meets FDA guidelines with optional seal materials ("F" Code)

Maximum Recommended Operating Conditions:

Temperature	
1500°F (816°C)	NPTF and NPTM styles
500°F (260°C)	Any cartridge style with PTFE grommet
400°F (204°C)	Any cartridge style with Viton® or PFA encapsulated Viton® seal material
300°F (149°C)	Any cartridge style with EPDM seal material
250°F (121°C)	Any cartridge style with Buna N seal material
Differential Pressure	
Standard core	60 psi (4.1 bar)
High pressure core	300 psi (20.7 bar)
Flow Rate	10 gpm (38 lpm) per 10-inch cartridge
Changeout ΔP	35 psi (2.4 bar)

Effective Filtration Area:

Cylindrical	0.5 ft²/10-in length (465 cm²/254 mm)
Pleated	1.7 ft²/10-in length (1580 cm²/254 mm)

FULFLO® METALLIC FILTER CARTRIDGES

Optimize process filtration with high integrity metallic cartridges

PERFORMANCE ATTRIBUTES

Flow Factors

Length (in)	Flow Factor
9 3/4, 10	0.00036
19 1/2, 20	0.00076
29 1/4, 30	0.00116

Note: Flow factors are the same for all ratings.
Center core ID and length are primary flow restrictions.

Flow Rate and Pressure Drop Formulae:

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

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

Notes:

1. **Clean ΔP** is PSI differential at start.
2. Viscosity is centistokes. Use Conversion Tables for other units.
3. Flow Factor is ΔP/GPM at 1 cks for 10 inch (or single).
4. Length Factors convert flow or ΔP from 10 inch (single length) to required cartridge length.

Removal Rating/Mesh Count/Open Area

Micrometer Rating	Mesh Count (per inch)	Percent Open Area
2 (9)	325 x 2300	NA
5 (14)	200 x 1400	NA
10 (18)	165 x 1400	NA
20 (32)	200 x 600	NA
40 (50)	120 x 400	NA
75	190 x 200	35
100	30 x 150	31
150	90 x 100	33
190	70 x 80	35
230	50 x 60	41
280	40 x 50	35
370	40 x 40	36
540	30 x 30	45
840	20 x 20	52

Ratings From 2 - 40 micrometers are twill dutch weave pattern
Ratings From 75 - 840 micrometers are open square weave pattern

ORDERING INFORMATION

Cartridge Code		Nominal Rating		Nominal Length		Media/Support Construction		Seal Material		End Cap Configuration		Special Options	
CODE	DESCRIPTION	CODE	(μm)	CODE	INCH (mm)	CODE	MEDIA	CODE	MEDIA	CODE	DESCRIPTION	CODE	DESCRIPTION
CSS	Cylindrical SS	2	2	9	9-3/4 (248)	G	304 Stainless Steel	E	EPDM	DO	Double Open End w/ grommet seal	H	High Pressure Core (316 SS)
PSS	Pleated SS	5	5	10	10 (254)	S	316 Stainless Steel	F	PTFE (grommet only)	DX	Double Open End with Extended Core	P	Pleat Protector Sleeve (316 SS)
		10	10	19	19-1/2 (495)			N	Buna N (O-ring only)	FC	Single Open End w/ 1" NPTF female connection	F	FDA Grade Serial Material
		20	20	20	20 (508)			T	Viton®	MC	Single Open End w/ 1" NPTM male connection		
		40	40	29	29-1/4 (743)			V	No Seal (FC, MC Style)	SC	Single Open End w/226 O-ring Seal		
		75	75	30	30 (762)			X		TC	Single Open End w/222 O-ring Seal		
		100	100										
		150	150										
		190	190										
		230	230										
		280	280										
		370	370										
		540	540										
		840	840										

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SPEC-C-9000-FB Rev. A/9/07



BAG FILTERS



ENGINEERING YOUR SUCCESS.

FULFLO® FILTER BAGS

Fulflo® Filter Bags provide high quality and consistent filtration performance



Fulflo® Filter Bags are ideal for virtually any process filtration application requiring the removal of solids. Parker's Fulflo® Filter Bags are manufactured and tested under the strictest quality control standards to assure consistent performance. Parker's Fulflo® Filter Bags perform at high flow rates and viscosities to 10,000 cps or higher.

BENEFITS

- Standard filter bags fit Fulflo® vessels and most major competitive models
- The "C" Style Fulflo® bag features a polypropylene Quik-Seal™ ring which effectively seals the bag into standard Parker bag vessels
- The "G" Style Fulflo® bag features a carbon steel snap ring for positive sealing in competitive vessels
- Fulflo® Quik-Seal™ option is available for all "G" style Fulflo® Filter Bag media
- Felt bags come standard with glazed surface treatment to effectively control migration of fibers into the filtered product
- Polypropylene felt (P) bags are suitable for incidental food contact per CFR Title 21

APPLICATIONS

- Beverages
- Prefilters for finer cartridges
- Edible oils
- Water

SPECIFICATIONS

Materials of Construction:

316 stainless steel

Maximum Recommended Operating Conditions:

Temperature	
Polyester	275°F (136°C)
Polypropylene	200°F (94°C)
Monofilament Nylon Mesh	275°F (136°C)
Multifilament Polyester Mesh	275°F (136°C)

Effective Removal Ratings:

0.5 µm to 800 µm	
Flow Rate	(Per single length)
Standard Bag	80 gpm (303 lpm)
Changeout ΔP	35 psi (2.4 bar)
Pressure	70 psid (4.8 bar)

Bag Size:

C1:	7.5" X 17.5"
C2:	7.5" X 31.5"
G1:	7" X 17.5"
G2:	7" X 31.5"

Bag Media Selection:

Felt: Synthetic needled fabric offers cost-effective depth filtration. Particle retention ratings from 1 µm to 200 µm

Monofilament Mesh: Single strand nylon with retention ratings from 100 µm to 600 µm

Glazed: In polypropylene or polyester felts, the surface fibers are melt bonded to one another, reducing the possibility of fiber migration

Multifilament Mesh: Strong fabric woven from twisted strands. Particle retention ratings from 150 µm to 800 µm

Seal Options

C	Plastic Quik-Seal™ Ring (polypropylene for P felt and polyester for PE felt)
G	Steel Snap Ring

FULFLO® FILTER BAGS

Fulflo® Filter Bags provide high quality and consistent filtration performance

PERFORMANCE ATTRIBUTES

Standard Bag Flow Factors

Rating (µm)	Flow Factor
1	0.00083
3	0.00059
5	0.00044
10	0.00029
25	0.00017
50	0.00013
75	0.00008
100	0.00007

Flow Rate and Pressure Drop Formulae:

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

$$\text{Clean } \Delta P = \frac{\text{FlowRate} \times \text{Viscosity} \times \text{Flow Factor}}{\text{Length Factor}}$$

Notes:

1. **Clean ΔP** is PSI differential at start.
2. Viscosity is centistokes. Use Conversion Tables for other units.
3. Flow Factor is ΔP/GPM at 1cks for 10 inch (or single).
4. Length Factors convert flow or ΔP from 10 inch (single length) to required cartridge length.

ORDERING INFORMATION

Bag Style		Bag Size		Media		Micron	Seal Options		Other Options
Code	Description	Code	Description	Code	Description	Code/Description	Code	Description	
C	Quick-Seal	1	Single	P	Polypropylene	1,3,5,10,25,50,100 (P)	F	Flex band seal	
G	Snap Ring	2	Double	PE	Polyester	1,3,5,10,25,50,75,100,200 (PE)	Q	Top seal plastic ring	
		1	Single	P	Polypropylene	1,3,5,10,25,50,100 (P)			
		2	Double	PE	Polyester	1,3,5,10,25,50,75,100,200 (PE)			

Polyester Multifilament Bags

Code	Description	Code	Description	Code	Description	Code/Description	Code	Description	Code	Description
C	Quick-Seal	1	Single	PEMU	Polyester	150, 200, 250, 300, 400, 800	F	Flex band seal		
G	Snap Ring	2	Double	PEMU	Polyester	150, 200, 250, 300, 400, 800	PE	Polyester quik-seal ring	H	Cotton handle
		1	Single				Q	Top sealing plastic ring		
		2	Double							

Nylon Monofilament Bags

Code	Description	Code	Description	Code	Description	Code/Description	Code	Description	
C	Quick-Seal	1	Single	MNO	Nylon	100,200,300,400,600	F	Flex band seal	
G	Snap Ring	2	Double	MNO	Nylon	100,200,300,400,600	PE	Polyester quik-seal ring	
		1	Single				Q	Top sealing plastic ring	
		2	Double						

TECHNICAL SUPPORT AND PRODUCT INFORMATION

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XLH FILTER BAGS

XLH high efficiency filter bags provide high quality filtration performance



XLH Filter Bags are ideal for virtually any process filtration application requiring the removal of solids. Parker's XLH filter bags are manufactured and tested under the strictest quality control standards to assure consistent performance. Parker's XLH filter bags perform at high flow rates and viscosities to 10,000 cps or higher.

XLH high efficiency filter bags perform at efficiencies similar to depth cartridges. XLH bags are available in 0.5 μm , 1 μm , 2.5 μm , 10 μm and 25 μm particle retention ratings.

BENEFITS

- Parker's XLH all-polypropylene high efficiency filter bags provide twice the dirt-holding capacity at a lower cost than many competitive bags and cartridges of the same micrometer rating
- XLH bags require less frequent Changeout, less storage and disposal space, and are easy to install and remove
- Each bag is incinerable (with Quik-Seal™ option), reducing filter disposal costs
- All materials of construction are FDA listed as acceptable for potable and edible liquid contact according to CFR Title 21

APPLICATIONS

- Water
- Beverages
- Prefilters for finer cartridges
- Edible oils

SPECIFICATIONS

Materials of Construction:

Microfiber	FDA grade polypropylene microfiber used in the XLH bag series assures high efficiency performance and is oil absorbent
------------	--

Maximum Recommended Operating Conditions:

Temperature	200°F (94°C)
Flow Rate	25 gpm (95 lpm)
XLH	
Changeout ΔP	35 psi (2.4 bar)
Maximum Pressure	70 psid (4.8 bar)

Bag Media Selection:

Microfiber: FDA grade polypropylene microfiber used in the XLH bag series assures high-efficiency performance and is oil absorbent from 0.5 μm to 25 μm .

XLH FILTER BAGS

XLH high efficiency filter bags provide high quality filtration performance

ORDERING INFORMATION

Bag Style		Bag Size		Media		Micron		Seal Options		Other Options	
CODE	DESCRIPTION	CODE	DESCRIPTION	CODE	DESCRIPTION	CODE	(µm)	CODE	SEAL	CODE	OPTION
C	Plastic Quic-Seal Ring	1	Single	XLH	High Efficiency	05	0.5	Blank	No Seal	Blank	None
G	Steel Snap Ring	2	Double			1	1	F*	Flex Band	H	Cotton Handle
						2.5	2.5		Seal		
						10	10	Q**	Top Sealing		
						25	25		Plastic Ring		

*Available with code G style bag only.

**Not available on "C" style.

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SPEC-C-5031-FB Rev. A 9/07



FILTER VESSELS



ENGINEERING YOUR SUCCESS.

FULFLO® “LT” SERIES

Fulflo® polymeric vessels for water filtration



Parker Fulflo® LT Series Polymeric Vessels are an ideal economical choice for low flow industrial and potable water applications. Standard and large diameter vessels accommodate 2-1/2 and 4-1/2 inch O.D. double-open-end Fulflo cartridges and meet FDA requirements for use with potable fluids. Both 10-in and 20-in vessels, with or without pressure relief vent, are available. Installation wrenches and brackets are optional.

BENEFITS

- Fulflo® polymeric vessels are available in two diameters and lengths, with or without relief vent
- The all polymeric, corrosion-resistant LT series vessels are economical alternatives to stainless steel vessels when high temperature and high pressure are not specified
- All models are made of materials that meet FDA requirements
- The LTG model vessels provide both 1 in and 1-1/2 in NPT connection in same head
- Positive head-to-shell "stop" prevents over tightening
- Unique O-ring design ensures effective sealing by positive tangential contact and eliminates accidental misplacement
- LT model vessels are ideal for Fulflo® bonded, pleated and wound cartridges, as well as activated carbon core models MMCT-10, MC10-2, MC20-2 and MC30-2
- LTG model vessels are ideal for Fulflo® TruBind® 400 series cartridges and 4-1/2 in O.D. wound cartridges in double-open-end style
- Optional installation wrenches accommodate faster cartridge Changeout
- Mounting brackets are available for pipe and wall installation
- LT series vessels are tested to industry standards of Water Quality Association for burst pressure, seal integrity, and fatigue resistance

APPLICATIONS

- | | |
|-----------------|---|
| • Potable water | • Post oil/water separator polishing |
| • Beverages | • Leisure/commercial shipping bilge water |
| • Bottled water | • Industrial discharge water |
| • DI water | • Compressor condensate |
| • Food products | • Alkaline parts washing |
| • Process water | |

SPECIFICATIONS

Materials of Construction:

White talc-reinforced polypropylene head with clear styrene Acrylonitrile (SAN) shell.

Recommended Operating Conditions:

Maximum operating temperature: 125°F (52°C) @

100 psi (6.9 bar)

Maximum operating pressure: LT:150 psi (10.3 bar) @ 75OF (22OC)

LTG: 125 psi. (8.6 bar) @75OF (22OC)

Maximum Recommended Flow Rate:

LT10 6 gpm (23 lpm)

LT20 12 gpm (45 lpm)

LTG10 10 gpm (38 lpm)

LTG20 20 gpm (76 lpm)

Connection Dimensions

LT 3/4 in NPTF

LTG 1 and 1 1/2 in NPTF (dual connection)

Head-to-shell O-ring:

LT model 2-240 Buna N

LTG model 2-358 Buna N

Accepts Industry Standard Cartridge Sizes (Nominal):

Lengths

- 9 13/16 in (249 mm)

- 20 in (508 mm)

I.D.

- 1 1/16 in (27 mm)

O.D.

- 2 1/2 in (64 mm) - LT

- 4 1/2 in (114 mm) - LTG

FULFLO® “LT” SERIES

Fulflo® polymeric vessels for water filtration

PERFORMANCE ATTRIBUTES

Available Options for LT Model

Option	Part Number
Wrench for 10 in Shell	6880-1-005
Wrench for 20 in Shell	6880-1-010
L-Bracket - Wall Mount	0820-6010
U-Bracket - Pipe Mount	0820-6015

Available Options for LTG Model

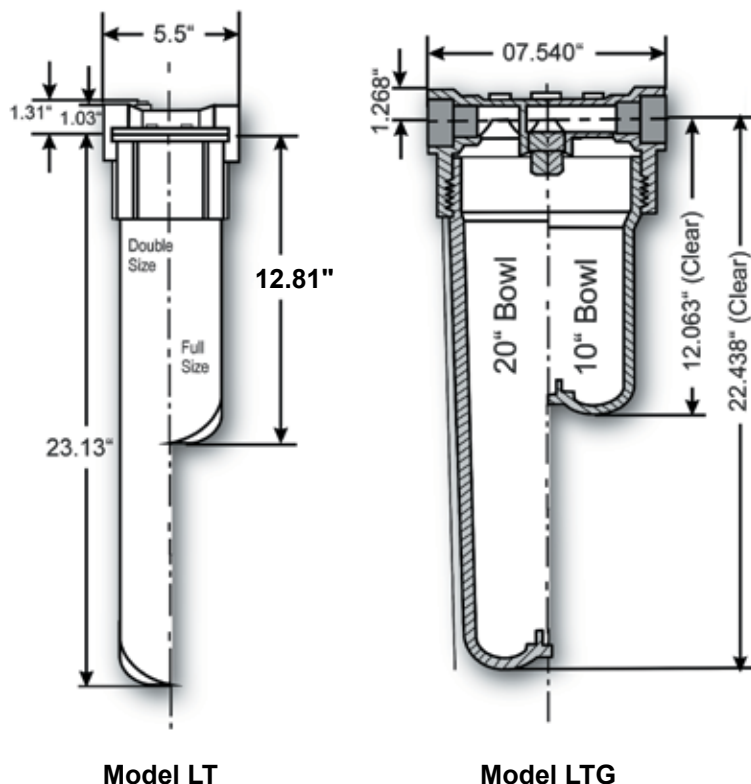
Option	Part Number
Wrench for 10 in Shell	6880-6000
Wrench for 20 in Shell	6880-6001
L-Bracket - Wall Mount	0820-6001

Available Vessel Part Numbers

LT Model	LTG Model
LT10	LTG10
LT10V	LTG10V
LT20	LTG20
LT20V	LTG20V

ORDERING INFORMATION

Series		Vessel Length		Vent (in)	
CODE	DESCRIPTION	CODE	INCH	CODE	DESCRIPTION
LT	Vessel for nominal 2 1/2 in O.D. cartridges	10	10	Blank	No Vent
		20	20	V	Vent
LTG	Vessel for nominal 4 1/2 in O.D. cartridges				



TECHNICAL SUPPORT AND PRODUCT INFORMATION

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ADVANTAGE™ SANITARY VESSELS

Achieve sterile filtration of aqueous solutions, air and gas



Parker's Advantage sanitary electropolished filter vessels for sanitary applications provide the ultimate in vessel performance and durability for the most demanding, high purity liquid filtration requirements.

BENEFITS

- 316L stainless steel provides lasting durability, thermal, mechanical and chemical compatibility
- Exteriors are electropolished to 32 Ra for fast and easy surface cleaning
- Interiors are electropolished to a maximum of 25 Ra for fine, mirror-like finish which minimizes the risk of contamination, improves cleanability and enhances corrosion resistance
- Sanitary vents and drains facilitate sampling, integrity testing, venting, and safe and easy draining
- Machined filter cup ensures reduced holdup volume and proper O-ring seal for 222 or 226 single-open-end element seals
- Cast clamp closure for 1 round and swing bolt closure for multiple round vessels
- T-Style designs provide easy cartridge replacement without disconnecting lines
- Optional sanitary drain and vent valves enable complete drain age of liquids after filtration and simplify filter removal
- Triclamp flange inlets and outlets allow easy dismantling of parts for fast and simple cleaning
- Standard design is ASME code without stamp. Stamp is optional.

APPLICATIONS

- | | |
|-------------------|----------------------------|
| • Pharmaceutical | • Laboratory |
| • Veterinary | • Medical & medical device |
| • Food & beverage | • Biotechnology |

SPECIFICATIONS

Design Features:

- All vessels have T-style inlet and outlet connection.
- Multiple element vessels have legs.
- Single element vessel is supported by piping only.
- Single element vessel design is non-code.
- Multiple element design vessels are ASME code design without stamp.
- Code stamp is optional.

Operating Conditions:

Multiple element design pressure and temperature
150 psig (10.3 bar) at 200°F (93°C) and full vacuum

Hydrostatic Testing Conditions 225 psig (15.5 bar)
Single element design pressure and temperature

250 psi (liquid), 125°F psi (gas) at 100°F (38°)

ADVANTAGE™ SANITARY VESSELS

Achieve sterile filtration of aqueous solutions, air and gas

PERFORMANCE ATTRIBUTES

Size	Maximum Flow Rate	Connection Options
1 Round	25 gpm (94.4 lpm)	1"
3 Round	75 gpm (283.5 lpm)	1.5"
5 Round	125 gpm (469 lpm)	2"
7 Round	175 gpm (661.5 lpm)	2"
12 Round	300 gpm (1,134 lpm)	3"

ORDERING INFORMATION

Finish		No. of Cartridges Around		Code Rating		Bowl Length (in)		Cartridge Code		Drain		Vent		Connection		Seal Material	
CODE	DESCRIPTION	CODE	DESCRIPTION	CODE	RATING	CODE	INCH	CODE	DESCRIPTION	CODE	DESCRIPTION	CODE	DESCRIPTION	CODE	INCH	CODE	DESCRIPTION
A	10Ra/32Ra/EP	01	1 Rd	C	ASME code	0	5	7	26 Fin or Cap	A	1/4" Sample Valve	A	1/4" Sample Valve	A	1" TC	E	EPDM
B	20Ra/32Ra/EP	03	3 Rd		w/o stamp	1	10	8	222 Fin or Cap	B	1/2" TC	B	1/2" TC	C	1.5" TC	S	Silicone
C	25Ra/32a/EP	05	5 Rd	N	Non-Code	2	20			H	None	H	None	E	2" TC	V	Viton*
		07	7 Rd			3	30							G	3" TC	T	PTFE encapsulated
		12	12 Rd			4	40										Viton*

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