

# CLARIFLOW® Biological Grade

Low Protein-Binding PES Membrane with Superior Fluid Flow Rates



Clariflow Biological Grade cartridges have been developed and optimized to assure end-product purity and stability in the filtration of water, buffers, culture media, biologicals and other solutions used in the pharmaceutical industry.

Clariflow's unique mirrored-anisotropic Polyethersulfone (PES) membrane produces a cartridge with exceptionally high flow rates, long on-stream life, and consistent removal of microorganisms and inorganic particulates.

Clariflow is inherently hydrophilic and contains no added surfactants or wetting agents. The PES membrane also exhibits low protein-binding characteristics, is biologically inert, and bacterial retentive.

Each cartridge is fabricated in a cleanroom environment, pre-flushed with ultrapure DI water, and 100% integrity tested prior to shipment.

## BENEFITS

- High flow rate reduces processing time
- Qualitative bacterial retention reduces initial bioburden
- Non-pyrogenic for use in critical applications
- Long service life minimizes change-out frequency
- Biologically inert and low protein-binding nature maximizes product yields

## APPLICATIONS

- Pharmaceutical Intermediates
- Bacterial Growth Media / Sera
- Parenteral Solutions
- Reagent Chemicals
- Make-Up Water
- Vaccines

## DETAILS

### LIQUID FLOW RATES\*

#### 10 inch (25 cm) cartridges:

0.1 µm	1.8 gpm/psid (0.10 lpm/mbar)
0.2 µm	3.7 gpm/psid (0.20 lpm/mbar)
0.45 µm	4.8 gpm/psid (0.26 lpm/mbar)
0.65 µm	8.9 gpm/psid (0.49 lpm/mbar)
0.8 µm	9.5 gpm/psid (0.52 lpm/mbar)

#### 5 inch (13 cm) cartridges:

0.1 µm	0.75 gpm/psid (0.04 lpm/mbar)
0.2 µm	1.5 gpm/psid (0.08 lpm/mbar)

(\*for fluids with viscosity of 1 cP)

### 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 reduce extractables.

### 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)
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### DRUG MASTER FILE

No. 11825, registered with the USFDA

### STEAM STERILIZABLE AND SANITIZABLE

Cartridges may be Steamed or Autoclaved up to 50 times @ 275°F (135°C). Cartridges may also be chemically sanitized in place using common sanitizing agents.

### BACTERIA RETENTION

Typical bacteria retention of up to 10<sup>7</sup>/cm<sup>2</sup> as per HIMA methodology (ASTM F838-83) for 0.1 µm and 0.2 µm using *Brevundimonas diminuta* and 0.45 µm using *Serratia marcescens*.

### INTEGRITY TEST VALUES

FILTER RATING	BUBBLE POINT		DIFFUSIONAL FLOW		
	psig	bar	cc/min	TEST PRESSURE	
µm				psig	bar
<b>5" Cartridges</b>					
0.1	28*	1.9*	≤24	55	3.8
0.2	45	3.1	≤12	32	2.2
<b>10" Cartridges</b>					
0.1	28*	1.9*	≤40	55	3.8
0.2	45	3.1	≤20	32	2.2
0.45	30	2.1	≤20	24	1.7
0.65	17	1.2	≤20	13	0.9
0.8	15	1.0	≤20	11	0.8

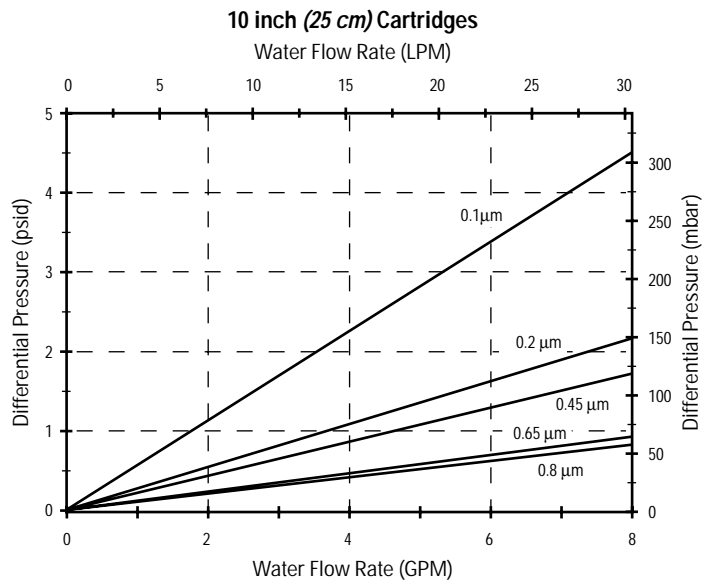
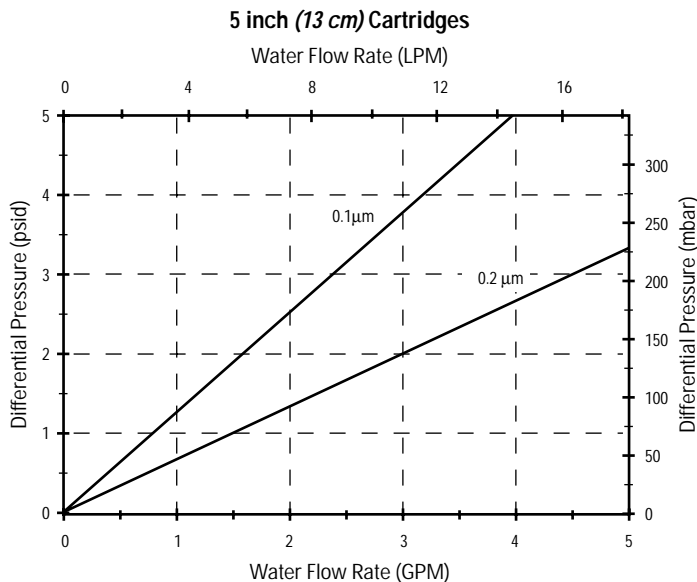
\*In a 60%/40% solution of IPA/Water.

All cartridges are tested at PTI using the diffusive flow test in water.

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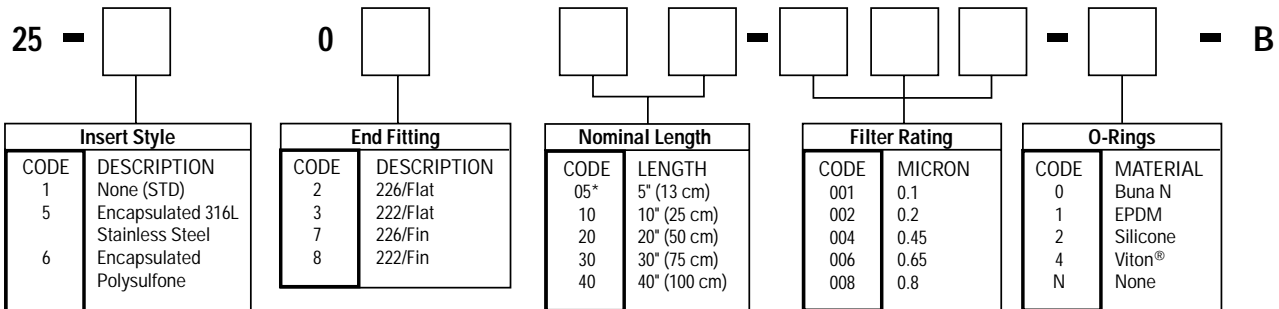
Low Protein-Binding PES Membrane with Superior Fluid Flow Rates

## PERFORMANCE ATTRIBUTES



## ORDERING INFORMATION

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



\*5" cartridges are only available in 0.1 and 0.2 µm ratings. All cartridges are 2.75" (6.9 cm) in diameter.

Specifications are nominal and are subject to change without notice. Detailed technical information and selection assistance are available from the company.

## TECHNICAL SUPPORT and PRODUCT ORDERING

PTI Advanced Filtration provides unsurpassed product consistency and cost-efficiency for our customers. Our experienced professionals can help you select the right solution for your application. For more information or to place an order, contact your local distributor. Information on product specifications, applications and chemical compatibility can be found on our web site at [www.pti-afi.com](http://www.pti-afi.com) or through your nearest PTI Advanced Filtration office.

PTI designs and manufactures an extensive line of innovative solutions for specific applications in Biopharmaceutical, Microelectronics, Food & Beverage, Industrial and Chemical industries.

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