



Graver Technologies

FILTRATION | SEPARATION | PURIFICATION



# TefTEC™ P Series Filter Cartridges

## *Sterilizing Grade PTFE Membrane Filter Cartridges*

TefTEC P membrane cartridges are validated for complete bacterial retention to yield product sterility in biopharmaceutical final filtration applications. TefTEC P cartridge filters are constructed with naturally hydrophobic e-PTFE membrane with polypropylene support layers and components. The sterilizing grade PTFE membrane cartridges are well suited for compressed air applications, fermentation feed air and tank vent applications where absolute microbial retention is critical. Additionally, TefTEC P has demonstrated viral aerosol retention to provide essential protection for final products.

### Product Specifications

Media: Expanded PTFE Membrane

Inner core, end caps, cage: Polypropylene

Support layers: Polypropylene

Gaskets/O-Rings:

Buna-N, EPDM, Silicone, Teflon  
Encapsulated Viton, Viton

O-Ring Insert: PBT

Micron rating: 0.2 µm

### Dimensions

Nominal lengths:

10" 20" 30" 40"

25.4 50.8 76.2 101.6 cm

Outside diameter: 2.7" (6.9 cm)

Inside diameter: 1.0" (2.54 cm)

Surface area: 8.6 ft<sup>2</sup> (0.80 m<sup>2</sup>)  
per 10" element

### Operating Parameters

Maximum operating temperature:  
195°F (90°C)

Maximum differential pressure:

80 psid @ 70°F (5.5 bar @ 21°C)

40 psid @ 160°F (2.8 bar @ 71°C)

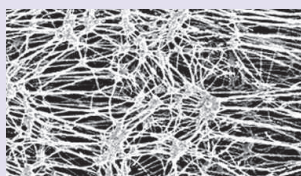
15 psid @ 195°F (1.03 bar @ 95°C)

Maximum reverse differential pressure:

40 psid @ 70°F (2.8 bar @ 21°C)

Recommended change-out pressure:

35 psid (2.4 bar)



### FEATURES & BENEFITS

- Single-layer construction provides superior flow rates and minimizes filtration system size
- 100% Flushed with 18 megohm DI water and integrity tested
- Filters are manufactured, flushed, tested and packaged in an ISO Class 7 Cleanroom Environment
- Each filter element stamped with pore size, lot and serial number for identification and traceability
- Complete bacterial removal in liquid at a challenge level of 10<sup>7</sup>/cm<sup>2</sup> *Brevundimonas diminuta*
- Retentive for aerosolized virus
- Validation guide available
- Every cartridge comes standard with an embedded O-ring support ring

### CERTIFICATIONS

- USP Class VI: Meets USP Class VI Biological Test for Plastics
- FDA Listed Materials: All materials comply with FDA Title 21 of the Code of Federal Regulations Sections 174.5, 177.1520, and 177.1550 as applicable for food and beverage contact.

### PERFORMANCE SPECIFICATIONS

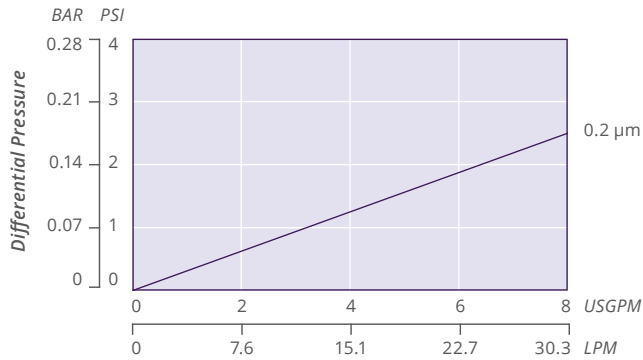
- Steam/Autoclave: Cartridges will withstand at least 100 steam/autoclave 30 minute cycles @ 275°F (135°C)
- Integrity Test Values: Bubble Point and Air Diffusion per 10 inch cartridge wet with 60/40 IPA/water. Contact Graver Technologies for specific method.
- Published Water Intrusion values

## TefTEC P NOMENCLATURE INFORMATION

Filter Type	Retention Rating (microns)	Nominal Length (inches)	End Configuration	Gasket or O-Ring	Options	
TefTEC P Series	0.2	-5	-30	P2 226/Flat Single Open End	B Buna-N	-W Pre-Wet
		-10	-40	P3 222/Flat Single Open End	E EPDM	
		-20		P7 226/Fin Single Open End	S Silicone	
				P8 222/Fin Single Open End	T Teflon encap. Viton (O-Rings only)	
			P28 222 w/3 tabs/Fin Single Open End	V Viton		
<b>Example: TefTEC P 0.2-20P2S</b>						
TefTEC P	0.2	-20	P2	S		

### TefTEC P FLOW RATE

Typical Flow Rate Clean Water at Ambient Temperature (per 10" cartridge)



For liquids other than water, multiply pressure drop by the fluid viscosity in centipoise

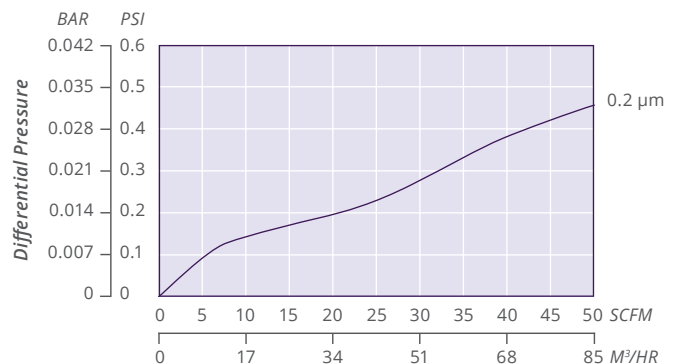
### INTEGRITY TEST SPECIFICATIONS

Integrity Test values per 10-inch cartridge wet with 60/40 IPA/water. Contact Graver Technologies for specific method.

Pore Size	Diffusion Flow	Bubble Point
0.2 $\mu\text{m}$	$\leq 20$ cc/min @ 12 psig (0.83 bar)	$\geq 26$ psig

### TefTEC P AIR FLOW RATE

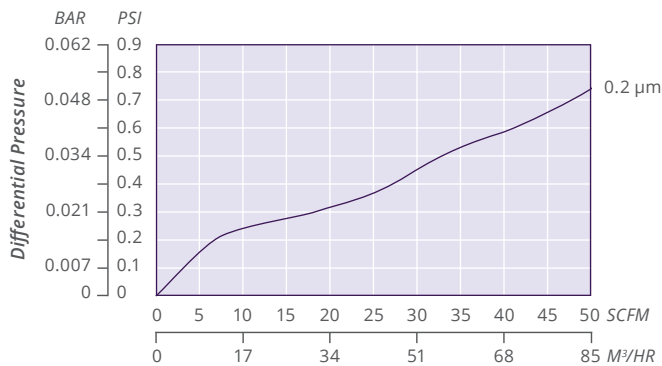
Air Flow Rate (per 10" cartridge)



Test conditions: System pressure at 30 psig, 65°F (18°C)

### TefTEC P AIR FLOW RATE

Air Flow Rate (per 10" cartridge)



Test conditions: System pressure at <10 psig (vent), 65°F (18°C), outlet open to atmosphere

### FOR MORE INFORMATION

Customer Service/Technical Support: 1-888-353-0303

China: +86-21-5238-6576 Asia: +65-9671-9966

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