



Graver Technologies

FILTRATION | SEPARATION | PURIFICATION



# ZTEC™ B Series Filter Cartridges

*Pleated Polyethersulfone (PES)  
Membrane for Bioburden Reduction*

## Product Specifications

**Media:** Asymmetric  
Polyethersulfone Membrane

**Inner core, end caps, cage:** Polypropylene

**Support layers:** Spunbonded  
Polypropylene

**Gaskets/O-Rings:**

Buna-N, EPDM, Silicone, Teflon  
Encapsulated Viton (O-Rings only),  
Teflon (gaskets), Viton

**O-Ring Insert:** PBT

**Micron ratings:** 0.2, 0.45, 0.65  $\mu\text{m}$

## Dimensions

**Nominal lengths:**

9.75" 10" 20" 30" 40"

24.8 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:** 7.6 ft<sup>2</sup> (0.7 m<sup>2</sup>)  
per 10" element

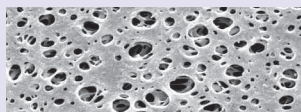
## Operating Parameters

**Maximum sustained  
operating temperature:**  
176°F (80°C) at 20 psid (1.38 bar)

**Maximum differential pressure:**  
80 psid @ 70°F (5.5 bar @ 21°C)  
40 psid @ 160°F (2.8 bar @ 71°C)

**Maximum reverse differential pressure:**  
40 psid @ 70°F (2.8 bar @ 21°C)

**Recommended change-out pressure:**  
35 psid (2.4 bar)



ZTEC B Bioburden Reduction grade membrane cartridges provide highly consistent performance for bioburden reduction and particle removal across a wide range of beverage, pharmaceutical and biological fluids. The naturally hydrophilic PES membrane filters provide exceptional flow rates, long on-stream life, broad chemical compatibility and have no added surfactants to contribute to extractables. The cartridges are integrity testable and steamable to assure reliable service in critical applications.

## FEATURES & BENEFITS

- Manufactured in an ISO Class 7 Cleanroom Environment
- 100% flushed with ultrapure DI water and integrity tested
- Repeatably steamable/sanitizable
- High retentions up to 10<sup>7</sup>/cm<sup>2</sup> challenged for bacteria and yeast
- Pore size, lot and serial number are stamped on each filter element for identification and traceability
- Complete qualification 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 (polypropylene), and 177.2440 (PES Resin) as applicable for food and beverage contact.
- European Directive for Food Contact: European Regulation No. 1935/2004 and European Regulation 10/2011: Tested for migration behavior and is suitable for contact with all kinds of foodstuffs with minimal rinse-up. Data available upon request.

## TYPICAL APPLICATIONS

- |                        |                     |                      |
|------------------------|---------------------|----------------------|
| • Bottled Water        | • Culture Media     | • Biopharmaceuticals |
| • Ophthalmic Solutions | • Reagent Chemicals | • Buffers            |
|                        | • LVPs              | • Juices             |

## PERFORMANCE SPECIFICATIONS

- Hot DI Water: Filter cartridge will withstand temperatures of 185°F (85°C) for up to 30 consecutive minutes.
- Cleaning/Sanitization: Compatible with most common chemical cleaning, sanitizing and sterilizing agents and with pH range from 1-14. Consult factory for specific compatibility information.
- Steam/Autoclave: Cartridges may be steamed or autoclaved for at least 50 thirty-minute cycles @ 275°F (135°C).

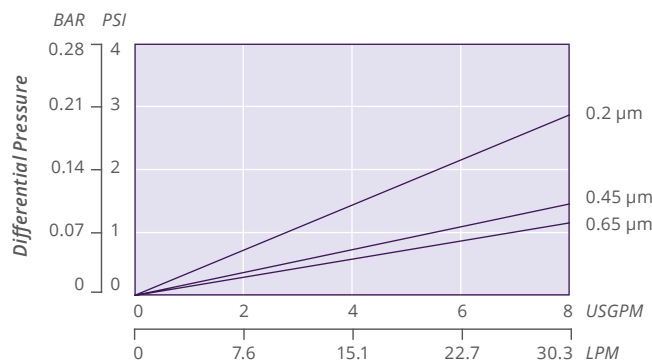
### ZTEC B NOMENCLATURE INFORMATION

Filter Type	Retention Rating (microns)	Nominal Length (inches)	End Configuration	Gasket or O-Ring
ZTEC B Series	0.2	-5      -20	P      Double Open End	B      Buna-N
	0.45	-9.75*      -30	P2      226/Flat Single Open End	E      EPDM
	0.65	-10      -40	P3      222/Flat Single Open End	S      Silicone
			P7      226/Fin Single Open End	T      Teflon encap. Viton (O-Rings only)
			P8      222/Fin Single Open End	
			AM      Single Open End, Internal O-Ring	T      Teflon (gaskets)
			NPC      Double Open End, Internal O-Ring	V      Viton
Example: ZTEC B 0.2-20P2E				
ZTEC B	0.2	-20	P2	E

\*Available only for DOE (P) configuration

### ZTEC B FLOW RATE

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



### INTEGRITY TEST SPECIFICATIONS

Minimum Bubble Point values and maximum Diffusive Air Flow (per 10-inch cartridge) values for ZTEC B filters wet with water:

Pore Size	Bubble Point	Diffusive Air Flow
0.2 µm	≥ 38 psig (2.8 bar)	≤ 35 cc/min @ 30 psig (2.0 bar)
0.45 µm	≥ 25 psig (1.7 bar)	≤ 35 cc/min @ 20 psig (1.4 bar)
0.65 µm	≥ 18 psig (1.2 bar)	≤ 35 cc/min @ 15 psig (1.0 bar)

### TYPICAL BACTERIAL RETENTION

0.2 µm	LRV for <i>B. diminuta</i> ≥ 7.2
0.45 µm	LRV for <i>S. marcescens</i> ≥ 7.1
0.65 µm	LRV for <i>S. cerevisiae</i> ≥ 11

### FOR MORE INFORMATION

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