



Graver Technologies

FILTRATION | SEPARATION | PURIFICATION



ZTEC™ SLB Series Filter Cartridges

*Pleated TECpore™ Polyethersulfone
(PES) Membrane Serial Layered for
Bioburden Reduction*

Product Specifications

Media: Serial layer TECpore 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 µm

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: 7.0 ft² (0.65 m²)
per 10" element

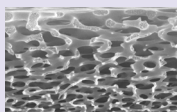
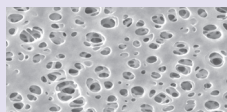
Operating Parameters

**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 SLB Serial Layer 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 TECpore 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 with Graver Technologies' high performance TECpore PES membrane in an ISO Class 7 Cleanroom Environment
- The Serial layer PES membrane is two filters in one greatly extending life for greater throughput, improved efficiency, reduced clogging
- 100% flushed with ultrapure DI water and integrity tested
- Repeatably steamable/sanitizable
- High retentions up to 10⁷/cm² 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), 177.2600 (elastomers) as applicable for food and beverage contact.
- European Directive for Food Contact: European Regulation No. 1935/2004 and European Regulation 10/2011 with amendments and corrections from European Reg No 2020/1245: 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
- Reagent Chemicals
- Buffers
- Ophthalmic Solutions
- LVPs
- Juices
- Culture Media
- Biopharmaceuticals

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).

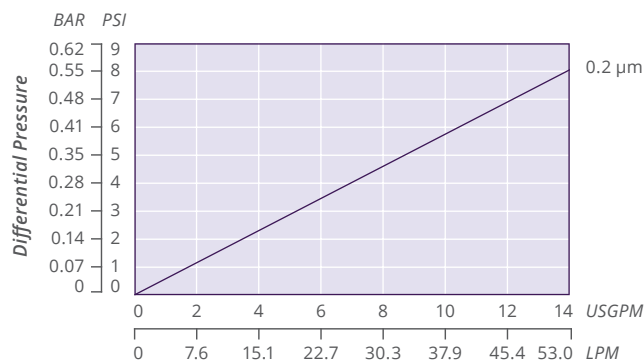
ZTEC SLB NOMENCLATURE INFORMATION

Filter Type	Retention Rating (microns)	Nominal Length (inches)		End Configuration		Gasket or O-Ring	
ZTEC SLB Series	0.2	-5	-20	P	Double Open End	B	Buna-N
		-9.75*	-30	P2	226/Flat Single Open End	E	EPDM
		-10	-40	P3	222/Flat Single Open End	S	Silicone
				P7	226/Fin Single Open End	T	Teflon encap.
				P8	222/Fin Single Open End	Viton (O-Rings only)	
				P28	222 w/3 tabs/Fin Single Open End	T	Teflon (gaskets)
				AM	Single Open End, Internal O-Ring	V	Viton
				NPC	Double Open End, Internal O-Ring		
Example: ZTEC SLB 0.2-20P2E							
ZTEC SLB	0.2	-20	P2		E		

*Available only for DOE (P) configuration

ZTEC SLB 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

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

Pore Size	Bubble Point	Diffusive Air Flow
0.2 µm	≥ 40 psig (2.76 bar)	≤ 30 cc/min @ 30 psig (2.0 bar)

THROUGHPUT TESTING

Uniform test media was allowed to be filtered through test coupons with a single 0.2µm layer and the serial layers of the SLB 0.2µm (Prefilter and 0.2µm layers). The throughput of the media showed an increase of up to 95% with the SLB layers.

TYPICAL BACTERIAL RETENTION

0.2 µm LRV for *B. diminuta* ≥ 11
Log Reduction value testing was done on a Single Open End configuration with a dual O-Rings Seal (222 or 226)



FOR MORE INFORMATION

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

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

All information and recommendations appearing in this bulletin concerning the use of products described herein are based on tests believed to be reliable. However, it is the user's responsibility to determine the suitability for his own use of such products. Since the actual use by others is beyond our control, no guarantee, expressed or implied, is made by Graver Technologies as to the effects of such use or the results to be obtained. Graver Technologies assumes no liability arising out of the use by others of such products. Nor is the information herein to be construed as absolutely complete, since additional information may be necessary or desirable when particular or exceptional conditions or circumstances exist or because of applicable laws or government regulations. ZTEC and TECpore are both trademarks of Graver Technologies, LLC.



Graver Technologies | 302-731-1700 | 800-249-1990
info@gravertech.com | www.gravertech.com

A member of The Marmon Group—A Berkshire Hathaway Company

GTX-380 5-25

DISTRIBUTED BY