



# PREPOR PES Filter Cartridges

- liquid filters
- polyethersulphone

PREPOR PES is an innovative particulate grade membrane prefilter cartridge designed to work in harmony with final sterilizing filters, to guarantee the highest levels of performance and security.

PREPOR PES combines high flow rate characteristics with good microbial reduction and minimum product adsorption by using the latest hydrophilic polyethersulphone membrane technology.

PREPOR PES uses all polypropylene hardware to offer good chemical compatibility and low extractables and is suitable for use in many pharmaceutical applications including terminal and aseptic filtration, ophthalmics, biologicals, serum, SVPs, LVPs and other complex liquids.

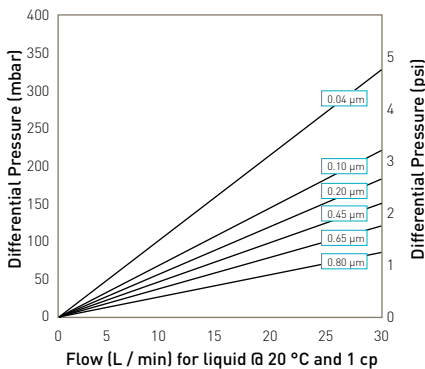
## Features and Benefits

- Micron rating from 0.04 to 0.8 micron
- Versatile particulate grade membrane filter for bioburden reduction and prefiltration duties
- High filtration area with asymmetrical membrane giving long life and high flow rates
- Available in a comprehensive range of end cap configurations for retrofitting existing applications



Note: PREPOR is a registered trademark of Parker domnick hunter

## Performance Characteristics



For K size for a given flow rate multiply 10" size differential pressure by 2

**10" Size (250 mm) Cartridge**

## Specifications

### Materials of Construction

- Filtration Membrane: Polyethersulphone
- Upstream Support: Polypropylene
- Downstream Support: Polypropylene
- Inner Support Core: Polypropylene
- Outer Protection Cage: Polypropylene
- End Caps: Polypropylene
- End Cap Insert (if applicable): 316L Stainless Steel\*
  - \*Not available in B & L endcap variants
- Standard o-rings/gaskets: Silicone / EPDM
- Capsule Body: Polypropylene
- Capsule Vent Seals: Silicone
- Filling Bell: Polycarbonate

### Food and Biological Safety

Materials conform to the relevant requirements of 21CFR Part 177, EC1935 / 2004 and current USP Plastics Class VI - 121 °C and ISO10993 equivalents.

### Recommended Operating Conditions

Up to 70 °C (158 °F) continuous operating temperature and higher short-term temperatures during CIP to the following limits:

Temperature		Max. Forward dP	
°C	°F	(bar)	(psi)
20	68	5.0	72.5
40	104	4.0	58.0
60	140	3.0	43.5
80	176	2.0	29.0
90	194	1.0	14.5
>100 (steam)	>212 (steam)	0.3	4.0

Capsules can be operated up to a temperature of 40 °C (104 °F) at line pressures up to 5.0 barg (72.51 psig) for liquids.

### Effective Filtration Area (EFA)

10" (250 mm) Up to 0.69 m<sup>2</sup> (7.42 ft<sup>2</sup>)

### Cleaning and Sterilization

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

To maximize the life of the cartridge, the differential pressure across the cartridge should not exceed 0.3 barg (4.35 psig) at 130 °C (266 °F).

### Retention Characteristics

While the PREPOR PES product is rated for particulate retention, the performance of PREPOR PES products has been assessed to bacterial titre reduction using a challenge methodology based on the ASTM F838-05 methodology applied to sterilizing grade filters. Typical levels are given below:

Organism	Approx. Cell* Size (µm)	Typical Titre Reduction				
		0.2	0.45	0.65	0.8	1.2
<i>Brevundimonas diminuta</i>	0.5 - 1.0 x 1.5 - 5.0	>10 <sup>10</sup>	10 <sup>9</sup>	10 <sup>8</sup>	-	-
<i>Serratia marcescens</i>	0.5 - 0.8 x 0.9 - 2.0	>10 <sup>12</sup>	10 <sup>10</sup>	10 <sup>9</sup>	10 <sup>8</sup>	10 <sup>7</sup>
<i>Stenococcus oenos</i>	0.5 - 0.7 x 0.7 - 1.2	>10 <sup>12</sup>	10 <sup>12</sup>	10 <sup>8</sup>	10 <sup>5</sup>	10 <sup>3</sup>

## Ordering Information

### Cartridges

**ZCPS** [ ] - [ ] [ ] [ ] [ ]

Code   Length (Nominal)	Code   Micron	Code   Endcap (10")	Code   Variant	Code   O-rings
B* 2.5" (65 mm)	004 0.04 µm	B* dh DOE	E Electronics	E EPDM
A* 5" (125 mm)	010 0.10 µm	C BF / 226 Bayonet	P Pharmaceutical	P PTFE Encapsulated Silicone
K 5" (125 mm)	020 0.20 µm	D Fin / 222		S* Silicone
1 10" (250 mm)	045 0.45 µm	E Flat Top / 222		V Viton
2 20" (500 mm)	065 0.65 µm	G Recess / 222		*Silicone o-ring supplied as standard without having to specify the 'S' code.
3 30" (750 mm)	080 0.80 µm	H UF Retrofit		
4 40" (1000 mm)		J SOE (no o-ring)		
		L* dh DOE		
		N Internal 213		
		R BF / 222 Bayonet		
		<b>Code   Endcap (Demi)</b>		
		SK Retrofit		
		T TRUESEAL		
		Y Demi Stub		
		Z Demi A & B Std		

\* Supplied in packs of 3.  
\* EPDM gaskets supplied as standard

### Capsules

**ZEPS** [ ] - [ ] [ ] [ ] [ ] - [ ] [ ] [ ] - [ ]

Code   Length (Nominal)	Code   Micron	Code   Inlet Connection	Code   Outlet Connection	Code   Variant	Code   Grade	Code   Pack N°	Code   Accessory
E 4.4" (113 mm)	004 0.04 µm	T 1" Tri-Clamp	T 1" Tri-Clamp	P Pharmaceutical	N Supplied Non-Sterile	3 Pack of 3	FB Filling Bell
B 5.5" (140 mm)	010 0.10 µm	N 1/2" NPT Male	N 1/2" NPT Male		S Supplied Gamma Pre-sterilized		G & H connections only
A 7.9" (200 mm)	020 0.20 µm	H 1/2" Hosebarb	H 1/2" Hosebarb				
	045 0.45 µm	G Stepped Hosebarb	G Stepped Hosebarb				
	065 0.65 µm	M 1/4" NPT Male	M 1/4" NPT Male				
	080 0.80 µm	Q Walther QC	Q Walther QC				
		R Grommel / QC	R Grommel / QC				
		V 3/8" NPT Female	V 3/8" NPT Female				

\* Approx. values as in "Holt, J.G., Krieg, N.R., Sneath, P.H.A., Staley, J.T., Williams, S.T., 1994. *Bergey's Manual of Determinative Bacteriology, Ninth Edition, Williams & Wilkins*."

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