TETPOR PLUS Filters

- liquid filters
- polytetrafluoroethylene

TETPOR PLUS filters are manufactured entirely from fluoropolymers making them extremely resistant to a wide range of aggressive chemicals.

TETPOR PLUS filter cartridges have been specifically designed for the filtration of liquids and gases in the bulk pharmaceutical, chemical and biopharmaceutical industry where particulate removal, bioburden reduction and guaranteed sterility is required.

The increasing use of ozonation for the treatment of WFI systems has highlighted compatibility issues with vent filters based on standard polypropylene components. The introduction of a fully validated 0.2 micron sterilizing grade TETPOR PLUS filter cartridge provides guaranteed long term performance in these applications with the additional benefit that the filters integrity can be validated by the water intrusion test method.

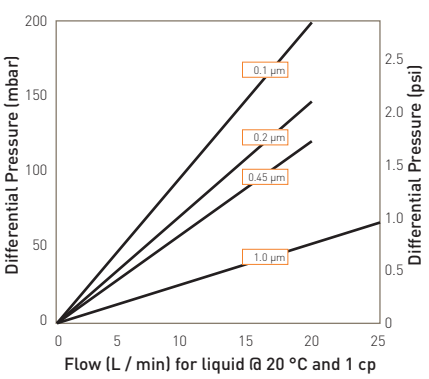
The high voids volume single layer PTFE membrane ensures an excellent combination of flow rate and retention.

Note: TETPOR is a registered trademark of Parker Hannifin Corporation.

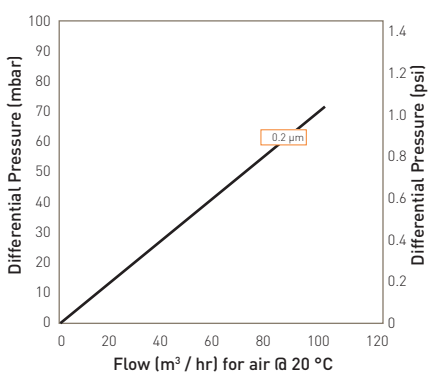
Features and Benefits

- Sterile filtration of oxygen / oxygen enriched feeds in cell culture
- Exceptional resistance to solvents and oxidative environments
- Ideal for sterile venting on ozonated water systems
- Fully validated to ASTM F838 for sterilizing grade filters
- PTFE membrane
- Available in a wide range of micron ratings to suit all applications

Performance Characteristics



10" Size (250 mm) Cartridge



10" Size (250 mm) Cartridge

Specifications

Materials of Construction

- Filtration Membrane: Polytetrafluoroethylene
- Upstream Support: Polytetrafluoroethylene
- Downstream Support: Polytetrafluoroethylene
- Inner Support Core: PFA
- Outer Protection Cage: PFA
- End Caps: PFA

Biological Safety

Materials conform to the relevant requirements of current USP Plastics Class VI - 121 °C and ISO10993 equivalents.

Recommended Operating Conditions

Up to 125 °C (257 °F) continuous operating temperature and higher short-term temperatures during CIP to the following limits:

Temperature °C	Temperature °F	Max. Forward dP (bar)	Max. Forward dP (psi)
20	68	5.5	80.0
75	167	3.8	55.0
125	257	2.0	30.0

Effective Filtration Area (EFA)

10˝ (250 mm) Up to 0.63 m^2 (6.78 ft^2)
K Size (125 mm) Up to 0.32 m^2 (3.44 ft^2)

Cleaning and Sterilization

TETPOR PLUS cartridges can be repeatedly steam sterilized in situ or autoclaved at up to 142 °C (287.6 °F) for a maximum of 30 cycles.

Retention Characteristics

TETPOR PLUS filter cartridges are validated by bacterial challenge testing with *Brevundimonas diminuta* to current ASTM F838 methodology (10^7 organisms / cm^2 EFA minimum) with typical in-house challenge levels being 10^{11} organisms per 10˝ (250 mm) module.

Integrity Test Data

The following is the integrity test information for the micron ratings available within the TETPOR PLUS product range. Diffusional flow and bubble point values are given for cartridges wetted in 60:40 v/v IPA:Water solution.

Micron Rating		0.1	0.2	0.45	1.0
Diffusional Flow	(barg)	1.45	0.8	0.45	3.0
Test Pressure	(psig)	19.0	11.6	0.5	0.2
Max. Diffusional Flow (10˝)		35.0	16.5	50.0	-
(ml / min)	(K)	16.3	7.7	23.3	-
Min. Bubble Point	(barg)	1.45	1.0	0.48	3.0
	(psig)	19.0	15.0	0.5	0.2
Water Intrusion	(barg)	-	2.5	-	-
Test Pressure	(psig)	-	36.3	-	-
Max. Water Intrusion	(10˝)	-	13.5	-	-
(ml / 10 min)	(K)	-	6.4	-	-

Pharmaceutical Validation

0.2µm sterilizing grade version is supported by a full validation guide, available upon request from Laboratory Services Group (LSG).

Ordering Information

ZCTP □ - □ □ - □ - □ □ □

Code	Length (Nominal)
K	5˝ (125 mm)
1	10˝ (250 mm)
2	20˝ (500 mm)
3	30˝ (750 mm)
4	40˝ (1000 mm)

Code	Micron
010	0.1 µm
020	0.2 µm
045	0.45 µm
100	1.0 µm

Code	Endcap (10˝)
CF	Flat Top / 226
C	BF / 226 Bayonet
E	Flat Top / 222
D	Fin / 222

Code	Insert Option
N*	No Insert

*0mit if 316L stainless steel insert required

Code	Variant
P	Pharmaceutical

Code	O-rings
P	FEP Encapsulated Viton
K	Kalrez
C	Chemraz
S	Silicone

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