TETPOR

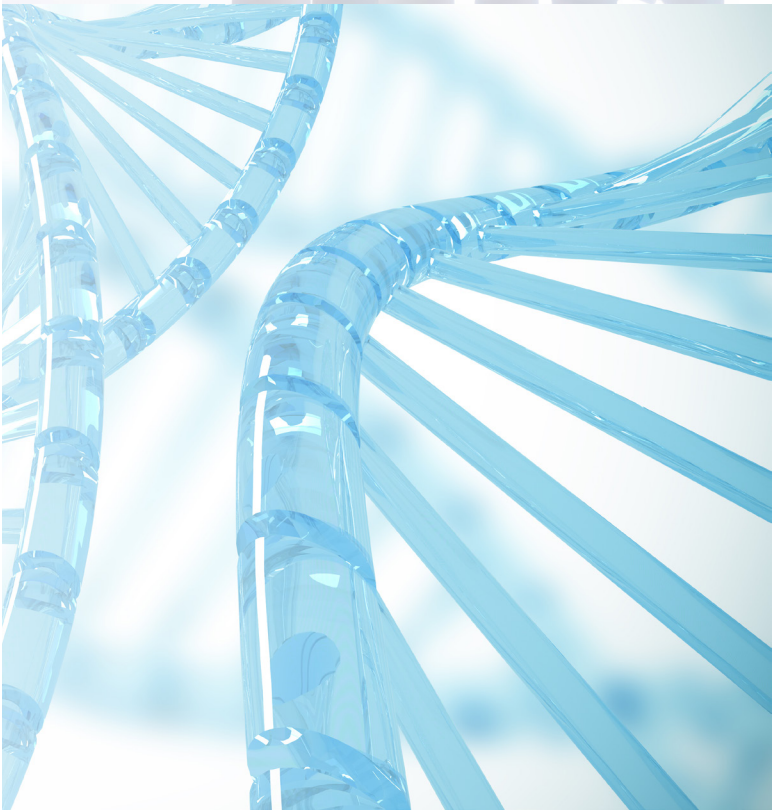
Air, Gas & Liquid Filter for Sterilizing & Bioburden Reduction

TETPOR filter cartridges and capsules provide a unified PTFE membrane platform delivering exceptional filtration performance for critical air, gas and liquid filtration across a wide range of process industries.

The well-proven, inherently hydrophobic expanded PTFE membrane is validated as sterilizing grade to current ASTM F838 methodology.

TETPOR's 0.2µm PTFE membrane will provide sterilizing grade filtration for air, gas and liquids, at high flow rates with low pressure drops. The high voids volume membrane ensures a high dirt holding capacity, especially useful in liquid applications, supporting long service life. TETPOR is also available in a 0.45 µm PTFE membrane for bioburden reduction.





Features and Benefits

Retention validated in accordance with current version of ASTM F838 liquid bacterial challenge using *Brevundimonas diminuta*:

- Evaluation of retention in worst case conditions.
- Sterility assurance from absolute rated filtration.

Integrity testing parameters correlated to complete bacterial retention:

- Effective and fast non-destructive test to confirm filter will provide sterilizing filtration.
- Diffusional flow (DF) and water intrusion test (WIT) parameters.

Operational flexibility and reliability:

- Up to 142°C steam sterilization in air and gas applications; up to 130°C in liquid applications.
- Superior chemical resistance from PTFE membrane and polypropylene hardware.

High voids volume membrane:

- Ensuring high dirt holding capacity for long service life.
- High flow rates with low pressure drops.

Applications

TETPOR is suited for sterile air and gas filtration, sterile venting, chemical serilization, and bioburden reduction in chemical process streams, supporting pharmaceutical manufacturing as well as broader process applications.

Material Specifications

Component	Material	Cartridge	MURUS	DEMICAP
Filtration Membrane	PTFE	x	x	x
Upstream Support	Polypropylene	x	x	x
Downstream Support	Polypropylene	x	x	x
Inner Support Core	Polypropylene	x	x	x
Outer Support Cage	Polypropylene	x	x	x
Endcaps	Polypropylene	x	x	x
Endcap Inserts	316L Stainless Steel	o		
Standard O-rings	Silicone	o	o	x
Alternative O-rings	EPDM	o	o	
	Viton	o	o	
	FEP Encapsulated Silicone	o		
MURUS Capsule	Polypropylene + TiO_2		x	
MURUS Endcap Insert	Polyethersulphone		x	
DEMICAP Capsule	Polypropylene			x

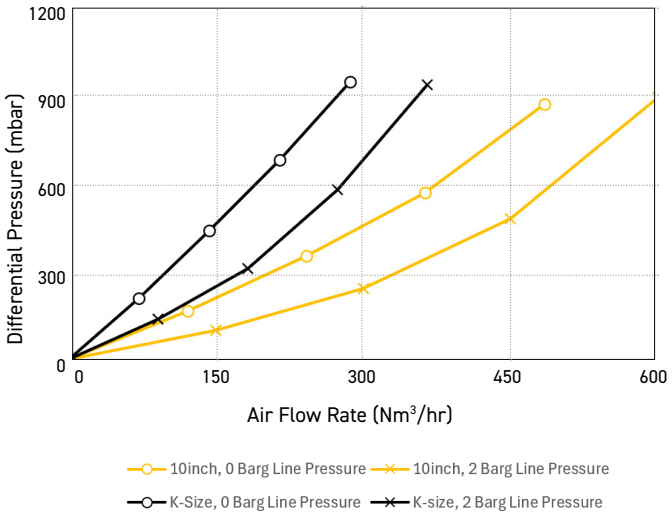
x = included in format, o = optional in format

Recommended Operating Conditions

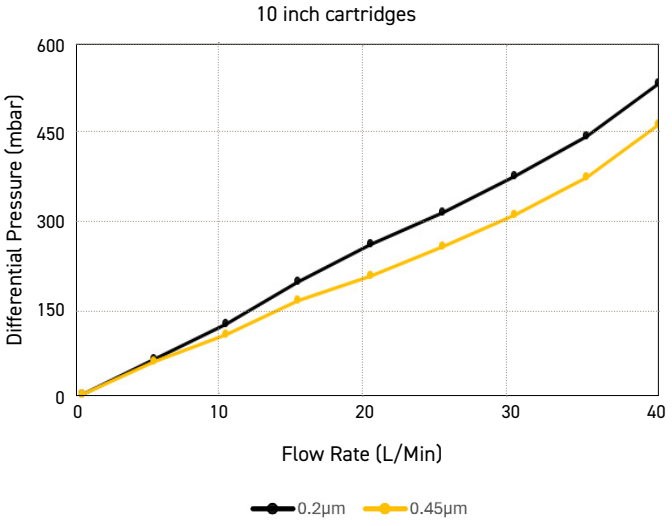
Cartridge Maximum Operating Pressures	5 barg @ 20°C 4 barg @ 40°C 3 barg @ 60°C *Short term CIP:* 2 barg @ 80°C 1.7 barg @ 90°C
MURUS Maximum Operating Pressures[1]	5.5 barg at 25°C 2.8 barg at 60°C
DEMICAP Maximum Operating Pressures[1]	5.0 barg at 40°C

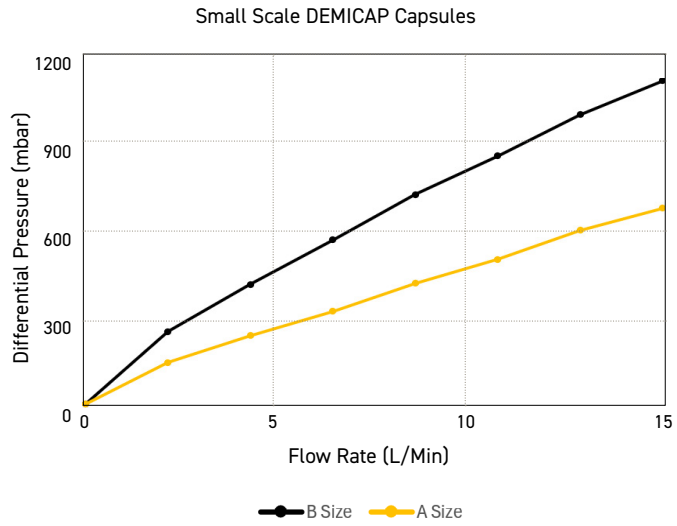
[1]Note: Parker Hannifin certify that this product complies with the current European Council Pressure Equipment Directve (PED) - Sound Engineering Practice (SEP). This product is intended for use with Group 1 & 2 Dangerous and Harmless Liquids and Group 2 Harmless Gases at the operating conditions stated in this document. The Pressure Equipment Directive mandates that category SEP product cannot bear the CE mark.

Air Flow Rates



Water Flow Rates





Steam Sterilization (SIP & Autoclave)

Cartridge SIP	120 cycles x 30 minute at 142°C
Cartridge Autoclave	120 cycles x 30 minute at 142°C
MURUS Autoclave	5 cycles x 30 minute at 130°C
DEMICAP Autoclave	100 cycles x 30 minute at 135°C
Syringe Autoclave	1 cycles x 30 minute at 130°C

Biological Safety

Materials used in TETPOR conform to the relevant requirements of 21 CFR part 177 current USP <88> Plastics Class VI - 121 °C.

Bacterial Retention Characteristics

TETPOR Filters are validated as sterilizing grade filters for compressed air, gas and liquid applications as per industry guidance. They provide sterile filtrate when challenged with a liquid bacterial culture in accordance with current revision ASTM* F838

** ASTM American Society for Testing and Materials*

Effective Filtration Area (EFA)

30 inch	2.31 m^2
20 inch	1.54 m^2
10 inch	0.77 m^2
K size	0.36 m^2

A size	2500 cm^2
B size	1200 cm^2
E size	600 cm^2
Syringe	14.5 cm^2

Integrity Test Data

Every filter cartridge is integrity tested prior to despatch using the diffusional flow test method after wetting with 60:40 Isopropanol:Water.

Diffusional Flow and Bubble Point Parmeters:

Minimum Bubble Point Pressure	All sizes	0.2µm:1.0 barg 0.45 µm: 0.7 barg
Diffusional FLow Test Pressure	All sizes	0.2µm: 0.8 barg 0.45µm: 0.4 barg
Maximum Diffusional Flow	30” 20” 10” K A B E	54.0 mL/min 36.0 mL/min 18.0 mL/min 8.5 mL/min 6.0 mL/min 3.0 mL/min 1.5 mL/min

The integrity o f dry TETPOR 0.2 µm flters may be evaluated by a water intrusion test (WIT) using the parameters.

Water Intrusion Test Parameters:

Test Pressure	All sizes	2.5 barg
Water Intrusion	30” 20” 10” K A B E	45.9 mL/10min 30.6 mL/10min 15.3 mL/10min 7.2 mL/10min 5.3 mL/10min 2.6 mL/10min 1.3 mL/10min
Water Flow	30” 20” 10” K A B E	13110 µg/10min 8740 µg/10min 4370 µg/10min 2060 µg/10min 1514 µg/10min 742 µg/10min 371 µg/10min

Quality Assurance

TETPOR filters are manufactured under a quality system, certified to the current revision of ISO9001, to the high standards of quality and cleanliness expected of pharmacetuical grade filters.

Each lot of expanded PTFE membrane is tested to demonstrate confomity to specification. Filters are packaged and sealed in a protective polyethylene bag within a controlled manufacturing environment. Every filter device is integrity tested and flushed with purified water and every capsule leak tested.

Filter Cleanliness

All TETPOR products are flushed with purified water during the manufacturing process.

- Effluent demonstrated to meet current USP requirements for oxidizable substances.
- Effluent shown to be below the maximum test limit of 0.25 EU/mL when evaluated using Limulus Amebocyte Lysate reagent in accordance with USP<85> Bacterial Endotoxins methodology.
- Constructed to be non-fiber-releasing as defined under 21 CFR 211.72 and 21 CFR 210.3(b)(6).
- Effluent particulate levels have been demonstrated to comply with current USP <788> requirements for Particulated Matter Injections.

Ordering Information

Cartridges

ZCMT [ ] - [ ] [ ] - [ ] [ ]

Code	Length (nominal)
B	2.5" (65 mm)
A	5" (125 mm)
K	5" (125 mm)
1	10" (250 mm)
2	20" (500 mm)
3	30" (750 mm)

Code	Micron
020	0.2
045	0.45

Code	10"-30" Endcaps
C	Fin/226 Bayonet
E	Flat Top/222

Code	K Endcaps
C	Fin/226 Bayonet

Code	A/B Endcaps
SK	Sealkleen™
T	TRUESEAL
X	116 Internal, lock
Z	116 Internal

Code	Insert
X	Standard
N	No Insert*

**No insert option only available for C & E style endcaps. Cartridges no longer steam sterilizable if insert removed.*

Code	O-ring
E	EPDM
P	FEP encapsulated Silicone
S	Silicone
V	Viton™

Must not be left blank except for SK endcap which does not require an o-ring.

MURUS Capsules

ZLMT [ ] - [ ] [ ] [ ] - [ ] [ ]

Code	Length (nominal)
K	5" (125 mm)
1	10" (250 mm)
2	20" (500 mm)
3	30" (750 mm)

Code	Micron
020	0.2

Code	Inlet Connection
A	3/4" Tri-Clamp
B	1 1/2" Tri-Calmp
D	1" Hosebarb
T	1" Tri-Clamp
H	1/2" Hosebarb

Code	Outlet Connection
A	3/4" Tri-Clamp
B	1 1/2" Tri-Calmp
D	1" Hosebarb
T	1" Tri-Clamp
H	1/2" Hosebarb

Code	Insert
L	In-Line
T	T-Port
Z	In-Line/ No Vents

Code	O-ring
E	EPDM
S	Silicone
V	Viton™

DEMICAP Capsules

ZEMT [ ] - [ ] [ ] [ ]

Code	Length (nominal)
E	1 1/4" (32 mm)
B	2 1/2" (65 mm)
A	5" (125 mm)

Code	Micron
020	0.2

Code	Inlet Connection
T	1" Tri-Clamp
N	1/2" NPT Male
H	1/2" Hosebarb
G	Stepped Hosebarb 6-12 mm
M	1/4" NPT Male

Code	Outlet Connection
T	1" Tri-Clamp
N	1/2" NPT Male
H	1/2" Hosebarb
G	Stepped Hosebarb 6-12 mm
M	1/4" NPT Male

Syringe Filters

ZSMT [ ] - [ ] [ ] [ ] PNS025

Code	Diameter
050	50 mm

Code	Micron
020	0.2

Code	Inlet Connection
F	Female Luer Lock
G	Stepped Hosebarb

Code	Outlet Connection
F	Female Luer Lock
G	Stepped Hosebarb

Reference: DS_PH_001 Revision: 2 Date of Issue: 09/26
© 2026 Parker Hannifin Corporation. All Rights Reserved.