



TETPOR AIR Filter Cartridges

- air / gas filters
- expanded PTFE

TETPOR AIR sterilisation filter cartridges offer exceptional filtration performance whilst providing the highest levels of biosecurity throughout the process industry.

Operating at ambient temperature conditions, TETPOR AIR filter cartridges provide a cost effective filtration solution. A unique polypropylene prefilter layer extends service life in heavily contaminated environments.

TETPOR AIR filter cartridges also utilise a well-proven inherently hydrophobic expanded PTFE membrane with an absolute removal rating of 0.01 micron for gas applications. This ensures the removal of all airborne bacteria, viruses and bacteriophage.

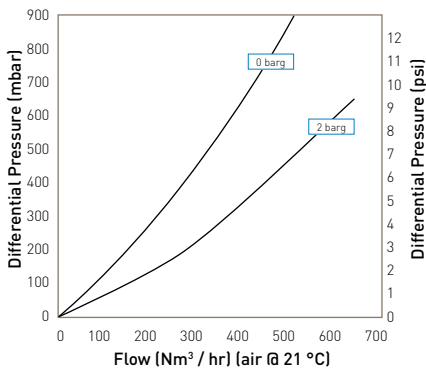
Features and Benefits

- Assured biosecurity with absolute rated filtration
- High flow rates with low pressure drops
- High voids volume PTFE membrane
- Steam sterilisable to 142 °C (287.6 °F)
- Unique prefilter layer

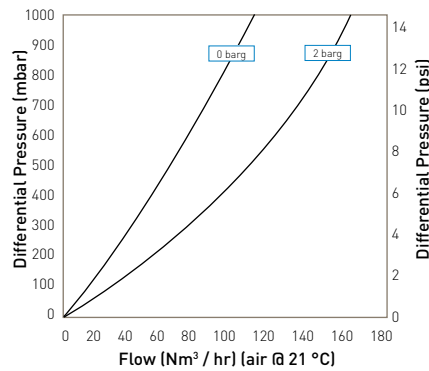


Note: TETPOR is a registered trademark of Parker domnick hunter

Performance Characteristics



10" Size (250 mm) Cartridge



B Size (65 mm) Cartridge

Specifications

Materials of Construction

- Filtration Membrane: Expanded PTFE
- Upstream Support: Polypropylene
- Downstream Support: Polypropylene

Filter Cartridges

- Inner Support Core: Polypropylene
- Outer Protection Cage: Polypropylene
- End Caps: Polypropylene
- End Caps Insert: 316L Stainless Steel
- Standard o-rings/gaskets: Silicone

MURUS Disposable Filter Capsules

- Core: Polypropylene
- Sleeve: Polypropylene
- Standard o-rings: Viton
- Capsule Body: Polypropylene
- Capsules Vent Seals: Silicone

DEMICAP Filter Capsules

- Core: Polypropylene
- Sleeve: Polypropylene
- End Caps: Polypropylene
- Capsule Body: Polypropylene
- Capsules Vent Seals: Silicone
- Filling Bell: Polycarbonate

Syringe Filters

- Body: Polypropylene

Recommended Operating Conditions

Filter Cartridges

Up to 70 °C (158 °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 (psig)
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	1.7	24.6

MURUS Disposable Filter Capsules

Up to 25 °C (77 °F) @ 5.5 barg (79.7 psig)
Up to 60 °C (140 °F) @ 2.8 barg (40.6 psig)

Parker Hannifin certify that this product complies with the European Council Pressure Equipment Directive (PED) 97/23/EC Article 3, Paragraph 3 - 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 : In compliance with PED Article 3, Paragraph 3, SEP, this product does not bear the CE mark.

DEMICAP Filter Capsules

Up to 40 °C (104 °F) at line pressures up to 5.0 barg (72 psig).

Effective Filtration Area (EFA)

10" (250 mm):	0.77 m ²	(8.28 ft ²)
K Size:	0.36 m ²	(3.87 ft ²)
A Size:	0.25 m ²	(2.69 ft ²)
B Size:	0.12 m ²	(1.29 ft ²)
E Size:	0.06 m ²	(0.64 ft ²)
Syringe ø50 mm:	14.50 cm ²	(2.25 in ²)

Sterilisation

	Autoclave		Steam-in-Place	
	Cycles	Temp	Cycles	Temp
Cartridges	120	142 °C (287.6 °F)	120	142 °C (287.6 °F)
MURUS	5	130 °C (266 °F)	-	-
DEMICAP	100	135 °C (275 °F)	-	-
Syringe	1	130 °C (266 °F)	-	-

TETPOR AIR filter cartridges can be sanitised with hot water at up to 90 °C (194 °F) and are compatible with a wide range of chemicals.

For detailed operational procedures and advice on cleaning and sterilisation, please contact the Technical Support Group through your usual Parker domnick hunter contact.

Food and Biological Safety

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

Quality Standards

Pharmaceutical grade products are manufactured in accordance with cGMP, 100% flushed with pharmaceutical grade purified water and integrity tested prior to despatch. A sample of each lot is tested to demonstrate conformity to validated claims.

Performance Characteristics

TOC / Conductivity

The filtrate quality from a 10" (250 mm) TETPOR AIR conforms to the requirements of current USP <643> (TOC) and USP <645> (conductivity).

Endotoxins

Aqueous extracts from the 10" (250 mm) TETPOR AIR contain < 0.25 EU / ml when tested in accordance with the Limulus Amoebocyte Lysate test.

Non-Volatile Extractables (NVE)

Total NVEs extracted in the first 5 litre flush of purified water for a 10" (250 mm) cartridge are <5 mg.

Pharmaceutical Validation

A full validation guide is available upon request from Laboratory Services Group (LSG).

Oxidisable Substances

TETPOR AIR filter cartridges meet current USP and EP quality standards for sterile purified water for oxidisable substances following a <1 litre water flush.

Integrity Test Data

All filters are integrity testable to the following limits when wet with 60 / 40 : IPA /water and using air as the test gas.

Cartridge	Test Pressure		Diffusional Flow (ml / min)	Water Intrusion Test Pressure		Water Intrusion (ml / 10 min)	Water Flow (µl / 10 min)
	(barg)	(psig)		(barg)	(psig)		
E	0.8	11.6	1.5	2.5	36.3	1.3	371
B	0.8	11.6	3.0	2.5	36.3	2.6	742
A	0.8	11.6	6.0	2.5	36.3	5.3	1514
K	0.8	11.6	8.5	2.5	36.3	7.5	2142
10"	0.8	11.6	18.0	2.5	36.3	16.0	4571

Retention Characteristics

TETPOR AIR filter cartridges are validated by bacterial challenge testing with *Brevundimonas diminuta* to current ASTM F838-05 methodology (10⁷ organisms / cm² EFA minimum) with typical in-house challenge levels being 10¹¹ organisms per 10" (250 mm) filter cartridge.

Ordering Information

Cartridges

ZCMT [] / [] [] - A []

Code Length (Nominal)	Code Micron	Code Endcap (10")	Code O-rings
B 2.5" (65 mm)	020 0.2 µm	B dh DOE	E EPDM
A 5" (125 mm)		C BF / 226 Bayonet	P PTFE
K 5" (125 mm)		G Recess / 222	S Silicone
1 10" (250 mm)		R BF / 222 Bayonet	V Viton
2 20" (500 mm)			
3 30" (750 mm)			

Code Endcap (Demi)	
SK	Retrofit
T	TRUESEAL
Y	Demi Stub
Z	Demi A & B Std

MURUS Capsules

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

Code Length (Nominal)	Code Micron	Code Inlet Connection	Code Outlet Connection	Code Variant	Code Grade	Code Design	Code O-rings ¹
K 5" (125 mm)	020 0.2 µm	A 3/4" Tri-Clamp	A 3/4" Tri-Clamp	P Pharmaceutical	N Non-sterile	L In-Line T T-Port	E EPDM ²
1 10" (250 mm)		B 1 1/2" Tri-Clamp	B 1 1/2" Tri-Clamp				S Silicone
2 20" (500 mm)		D 1" Hosebarb	D 1" Hosebarb				V Viton
3 30" (750 mm)		T 1" Tri-Clamp	T 1" Tri-Clamp				

¹ Silicone o-ring supplied as standard without having to specify the 'S' code
² EPDM = Ethylene Propylene Diene Monomer Rubber

DEMICAP Capsules

ZEMT [] / [] [] [] [] - [] [] []

Code Length (Nominal)	Code Micron	Code Inlet Connection	Code Outlet Connection	Code Variant	Code Grade	Code Pack N°
E 4.4" (113 mm)	020 0.2 µm	T 1" Tri-Clamp	T 1" Tri-Clamp	P Pharmaceutical	N Non-Sterile	3 Pack of 3
B 5.5" (140 mm)		N 1/2" NPT Male	N 1/2" NPT Male			
A 7.9" (200 mm)		H 1/2" Hosebarb	H 1/2" Hosebarb			
		G Stepped Hosebarb	G Stepped Hosebarb			
		M 1/4" NPT Male	M 1/4" NPT Male			
		Q Walther QC	Q Walther QC			
		R Grommel / QC	R Grommel / QC			
		V 3/8" NPT Female	V 3/8" NPT Female			

Syringe Filters

ZSMT [] - [] [] [] - [] [] []

Code Diameter	Code Micron	Code Inlet / Outlet Connection	Code Variant	Code Grade	Code Options	Code Pack N°
050 50 mm	020 0.2 µm	G Stepped Hosebarb L 1/8" NPT Male	P Pharmaceutical	N Non-sterile	S Standard	025 25 per box

Parker dominick hunter has a continuous policy of product development and although the Company reserves the right to change specifications, it attempts to keep customers informed of any alterations. This publication is for general information only and customers are requested to contact our Process Filtration Sales Department for detailed information and advice on a products suitability for specific applications. All products are sold subject to the company's Standard conditions of sale.