

SMT pleated PTFE membrane filters

Product description

Introduction

SMT filters provide safe, reliable and efficient bioburden control and sterilization of oxidizing, corrosive and aggressive liquids used in Food & Beverage, Pharmaceutical and Chemical industries.

The filters effectively retain particles and micro-organisms through a single layer asymmetric, hydrophobic PTFE membrane, fully validated for bacterial retention. The filter media with support layers is integrated into a robust cage or housing making it suitable for nearly all operation, service and cleaning conditions.

Devices

SMT filters are available in a wide range of scalable, cartridges, mini cartridges and capsules, that allow for fast and easy scale-up of your production. From laboratory-scale filters to production-scale assemblies, all filters incorporate the same media and identical materials of construction, eliminating the need to requalify filter units as processes are scaled up.

Compatibility

SMT filters are completely made from polypropylene hardware utilizing thermal welding techniques to seal all the components thus optimizing device integrity, assuring a broad chemical compatibility with a large number of solvents, acids and bases. Polypropylene is a highly chemically resistant material, enabling the filters to be chemically regenerated. The all polypropylene construction guarantees a small extractable footprint.

Documentation

SMT filters are designed, developed and manufactured in accordance with a ISO 9001 certified Quality Management System. A Validation Guide is available for compliance with regulatory requirements.

All the materials used comply with the European Union Regulation (EC) No. 1935/2004 as well as the Regulation (EU) No. 10/2011. concerning plastic materials and articles intended to come into contact with foodstuffs. These guidelines for plastics allow the use in food and beverage applications. All materials used meet the requirements of the CFR Title 21.



Key features

Hydrophobic PTFE membrane, integrity testable

- High flow and low pressure drop
- Wide chemical compatibility
- Validated bacteria retention (0,2µm)

Applications

Thanks to its chemical compatibility SMT filters are widely used in Pharmaceutical, Cosmetics and Chemical Industries.

- Sterilization of aggressive liquids
- Absolute retention of particles and contaminants
- Pre and final filtration of oxidizing liquids
- Particle removal from solvents



Technical data

Micron ratings (µm)

0,1/0,22/0,45/1/3/5/10 µm

Cartridge length

5"/10"/20"/30"/40"

Cartridge diameter

69mm

Material of construction

Filter media	Polytetrafluoroethylene (PTFE)
Core	Polypropylene
Cage	Polypropylene
Housing	Polypropylene
End caps	Polypropylene + reinforcement
Seal	Silicone, Viton, EPDM

Maximum operating temperature

80°C (cartridges), 60°C (capsules)

Maximum differential pressure forward (cartridges)

6,9 bar @ 25°C, 2,4 bar @80°C

Maximum differential pressure reverse (cartridges)

3,0 bar @ 25°C, 1,0 bar @80°C

Maximum differential pressure forward (capsules)

5,2 bar @ 38°C, 3,1 bar @60°C

Sterilization SIP (cartridges)

100 cycles for 30 mins @135°C, 0,3 bar dP

Sterilization Autoclave

400 cycles for 30 mins @130°C

Hot water sanitization (cartridges)

50 cycles for 30 mins @85°C

Chemical sanitization (cartridges)

50 cycles for 30 mins @40°C with sodium hypochlorite (100ppm) or peroxyacetic acid (100ppm)

Regulatory compliance

TOC/Conductivity @25°C

Autoclaved filter effluent meets USP<643> for Total Organic Carbon and USP<645> for Water Conductivity per WFI requirements after UPW flush of specified volume.

Non-fiber releasing

Non-fiber releasing component materials meet the criteria for a "non-fiber releasing filter" as per 21 CFR 210,3(b)(6).

Bacterial endotoxin

Aqueous extraction of autoclaved filter contains <0,25 EU/ml as determined by Limulus Amebocyte Lysate (LAL), USP <85>.

Bacterial Retention to ASTM F838-05 (0,22 µm)

LRV >10⁷ CFU/cm² of Brevundimonas diminuta (ATCC 19146)

Biosafety

Meets criteria of USP <88> Biological Reactivity Test for class VI-121°C plastics.

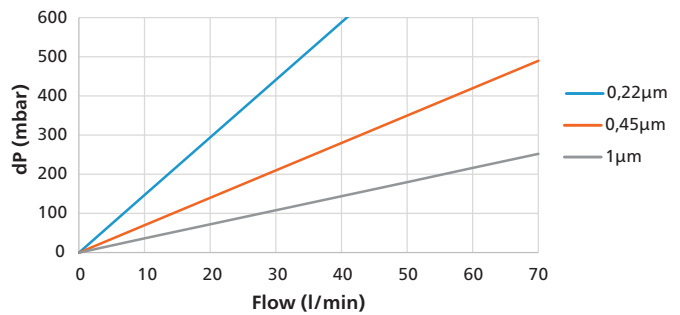
Indirect food additive

The product complies with food contact regulation 21 CFR §177 - 182 and (EC) No 1935/2004 and subsequent amendments.

Quality assurance

For each filter cartridge an electronic Certificate of Conformity is available, detailing relevant test data, biological safety information and product approvals against the specific batch number and part number for the filter. The filter cartridges are manufactured in a controlled clean room environment that generally meets the requirements for ISO 14644-1 Class 8 Cleanrooms.

Flow rate



Note: 10" cartridge tested with water @20°C, 1,005 cP (typical flow rate)

Protecting process, products and people

Atlas Copco's process filters optimize your productivity while protecting your process, product and consumers. Our portfolio of cartridges and housings covers all your filtration needs. The products are made from proven, high quality materials from reputable suppliers and manufactured in a controlled environment subjected to strict QA/QC procedures.

Integrity test data

Cartridge	Capsule	0,1 µm	0,22 µm	0,45 µm	1 µm
Diffusion flow		1 bar	0,8 bar	n/a	n/a
J2,5"	C2	n/a	n/a	n/a	n/a
J5"	C3	< 4,7 ml/min	< 4,7 ml/min	n/a	n/a
5"	C4-5 5"	< 8 ml/min	< 8 ml/min	n/a	n/a
10"	C4-5 10"	< 16 ml/min	< 16 ml/min	n/a	n/a
Bubblepoint		> 1,2 bar	> 3,4 bar	> 0,5 bar	> 0,25 bar

Product configuration

Cartridges

Series	Rating (µm)	Length	End cap	Seal
SMT	0,1	5"	C2 (2x226 O-ring + 2 tabs/flat)	S (Silicone)
	0,22	10"	C3 (2x222 O-ring/flat)	E (EPDM)
	0,45	20"	C7 (2x226 O-ring + 2 tabs/fin)	V (Viton)
	1	30"	C8 (2x222 O-ring/fin)	
	3	40"	C28 (2x222 O-ring + 3 tabs/fin)	
	5		DOE (flat + gasket/flat + gasket)	
	10			

Example: SMT 0,45µm 10" C7 S



Mini cartridges

Series	Rating (µm)	Style	Seal
SMT	0,1	J2,5T/J5T	S (Silicone)
	0,22	J2,5B1	E (EPDM)
	0,45	J2,5I/J3I/J5I	V (Viton)
	1	J1,5F/J5F	
	3	J2,5S/J5S	
	5	J1,5E/J2,5E/J5E	
	10		

Example: SMT 0,22µm J5T S



Capsules

Series	Rating (µm)	Style	Length ¹	Std
SMT	0,1	C1	5"	P
	0,22	C2/C3	10"	
	0,45	C4/C5	20"	
	1	C6/C7	30"	
	3	C8		
	5	C9/C10		
	10			

2 available as Zeta positive capsule 0,22-0,22 & 0,45-0,22 only

Example: SMT 0,45µm C4 10"

