SMN-XZ

Zeta positive pleated Nylon membrane filters

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Product description

Introduction

SMN-XZ filters provide safe, reliable and efficient bioburden control and sterilization of valuable fluids used in Food & Beverage, Pharmaceutical and Chemical industries.

The filters effectively retain particles and micro-organisms through a double layer, modified Zeta positive, hydrophilic Nylon 6,6 membrane, for enhanced retention of fine particles, smaller than the membranes rating, such as endotoxins and other wide range of pharmaceutical and biological solutions. 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

SMN-XZ filters are available in a wide range of scalable 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

SMN-XZ filter's hardware is completely made from polypropylene utilizing thermal welding techniques to seal all the components thus optimizing device integrity, thus 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

SMN-XZ 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

- Hydrophilic Nylon 6,6 membrane, integrity testable
- Positively charged double-layer media
- Endotoxin removing
- High flow rates
- Low filter extractables

Applications

Thanks to its chemical compatibility SMN-XZ filters are widely used in Food & Beverage, Pharmaceutical, Cosmetics and Chemical Industries.

- Retention of particles and micro-organisms in liquids
- Bioburden control and sterilization
- Edible liquids: bottled water, beer, wine, spirits, juices, soft drinks, non-carbonated drinks, etc.
- Non-edible liquids: water, serums, formulations, WFI, aggressive solvents, chemicals, etc.

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.

Technical data

Micron ratings (µm)
0,1-0,1/0,22-0,22/0,45-0,22/1,0-0,45 µm

Cartridge length
5"/10"/20"/30"/40"

Cartridge diameter
69 mm

Effective filtration area (typical)
0,58 m^2

Material of construction

Filter media	Double layer Nylon 6,6, Positive Zeta potential
Core	Polypropylene
Cage	Polypropylene
End caps	Polypropylene + reinforcement
Housing	Polypropylene
Seal	Silicone, Viton, EPDM

Maximum operating temperature
80°C (cartridges), 60°C (capsules)

Maximum differential pressure forward (cartridges)
6.9 bar @25c, 2.4 bar @ 80c

Maximum differential pressure reverse (cartridges)
3.0 bar @25c, 1.0 bar @ 80c

Maximum differential pressure forward (capsules)
5.2 bar@38°C, 3.1 bar @ 60°C

Sterilization SIP (cartridges)
10 cycles for 30 mins @121°C, 0.3 bar dP

Sterilization Autoclave
50 cycles for 30 mins @121°C

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 >

Biosafety

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

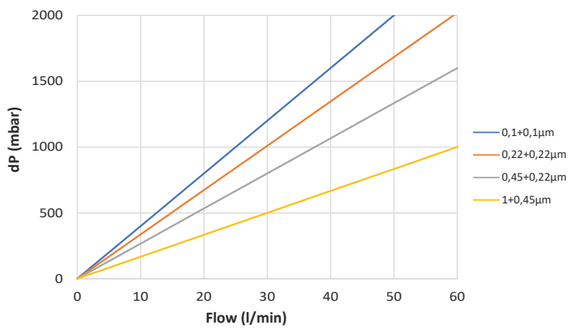
Food Contact Compliance

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)

Integrity test data

Cartridge	Capsule	0,1-0,1 µm	0,22-0,22 µm	0,45-0,22 µm	1,0-0,45 µm
Diffusion flow		n/a	2,75 bar	n/a	n/a
J2.5"	C2		n/a		
J5"	C3		< 5,0 ml/min		
5"	C4-5 5"		< 8 ml/min		
10"	C4-5 10"		< 16 ml/min		
Bubblepoint		> 3,8 bar	> 3,0 bar	> 3,0 bar	> 1,4 bar

Product configuration

Cartridges

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

Example: SMN-XZ 0,22-0,22µm 10" C7 S

Capsules

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

Example: SMN-XZ 0,22-0,22 C4 5" P / SMN-XZ 0,22-0,22 C6 P

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