

SuperGuard Pleated Cartridges Polyethersulfone Membrane Filters



SuperGuard cartridge is a precision filter product that combines the benefit of both pre-filter and final filter in one device to provide reliable and consistent performance. The pleated filter medium is modified polyethersulfone hydrophilic membrane specifically developed for rigorous operating conditions in many filtration applications.

This cartridge is designed for long service and can be used for final filtration when absolute particle removal is necessary, or prefiltration where highly fine particle removal is desired to protect the final filter.

During the manufacturing process, each **SuperGuard** cartridge is flushed with proper solvents under controlled conditions to provide optimum cleanliness, and integrity tested to assure the product quality.

SuperGuard cartridge is compatible with autoclave and in-line steam sterilization, as well as chemical sanitization methods.

Performance Advantages

- Constructed of only two materials, i.e., modified polyethersulfone and polypropylene with no adhesives to ensure lower extractables.
- All components meet USP Class VI-121° Plastics Tests for biosafety
- Provide high throughputs minimize filter change-outs during batch processing
- Enhanced porosity of polyethersulfone membrane as a filter medium in the cartridge results in low differential pressures and extended filter life
- Offer great resistance to severe sanitizing agents such as hot water, concentrated hydrogen peroxides, and active chloride compounds
- Available in a variety of configurations allowing easy installation in common-used filtration system
- 100% integrity tested during manufacture to assure product reliability and quality

Typical Applications

Pharmaceuticals and Biologicals: Parenterals, Ophthalmics, Oral and topical medicines, Serum, Tissue culture media, Wash and rinse water, Diagnostic reagents, Buffers, Vaccines, Bottle and vial washers, Dry compressed gases, Make-up water

Food and Beverages: Alcohols, Mineral water, DI and RO water, Dry compressed gases, Juices and other potable liquids

Bulk Chemicals: Selected acids, Diluted bases, Alcohols

Inks: Water and alcohol based inks

Electronics: Photoresists, Acids, Etchants, Bases, Solvents, Electroless nickel plating solutions, Pretreatment of DI and RO water

Specifications

Materials of Construction

Filter Media: Serial layers of pleated modified polyethersulfone hydrophilic membrane

Support Material: Polypropylene

Structure Components: Polypropylene

Sealing Technology: Thermal Bonding

Nominal Length

10, 20, 30, and 40 inch
(25.4, 50.8, 76.2 and 101.6 cm)

Diameter

2.7 inches (6.9 cm)

Nominal Pore Size

0.1, 0.2 and 0.45 μm

Typical Effective Filtration Area

5.8 ft² (0.54 m²) per 10 inch

Maximum Operating Temperature*

90 °C (194 °F) at 30 psid (2.1 bar)

**supported adapters are recommended for applications at elevated temperature over 60 °C*

Sterilization/Sanitization Methods

Chemical: Peracetic acid, chlorinated alkaline products, bleach, sulfur dioxide, and hydrogen peroxide at typical sanitization concentrations and temperatures

Hot Water: 88 °C at 5 psid (0.34 bar)

Autoclave: 121 °C (250 °F) for 30 minutes up to 10 cycles

In-line Steam: 121 °C (250 °F) for 30 minutes at 2 psid (0.14 bar) up to 10 cycles

142 °C (288 °F) for 60 minutes at 2 psid (0.14 bar) up to 5 cycles

Maximum Differential Forward Pressure

60 psid (4.1 bar) at ambient temperature

Maximum Differential Back Pressure

0.1 um: 30 psid (2.1 bar) at ambient temperature

0.2 um: 15 psid (1.0 bar) at ambient temperature

0.45 um: 15 psid (1.0 bar) at ambient temperature

Maximum Continuous Pressure

Limited by housing

Recommended Integrity Tests

Minimum Bubble Point

0.1 um: 28 psi (2.0 bar) in ethanol

0.2 um: 45 psi (3.1 bar) in water

0.45 um: 28 psi (2.0 bar) in water

Typical Liquid Flow Rate

0.1 um: 0.4 gpm/psid/10 inch length
(2.2 lpm/0.1 bar/25.4 cm length)

0.2 um: 2.2 gpm/psid/10 inch length
(12 lpm/0.1 bar/25.4 cm length)

0.45 um: 4 gpm/psid/10 inch length
(22 lpm/0.1 bar/25.4 cm length)

Oxidizable Substances

Filtrate meets USP XXII requirements for purified water with <1 L flush after autoclaving

Biosafety

All components meet USP Class VI-121° C Plastics Tests

Endotoxin Level

< 0.5 EU/mL utilizing Limulus Amoebocyte Lysate (LAL) test

Non-Volatile Residue

< 50 ppm per 10 inch

Bacterial Retention

Provided separately*

Ordering Information

Model	Grade	Micron Rating	Cartridge Length	Adapter Configuration	Seal Material
SG	E: Electronics	010=0.1 um 020=0.2 um 045=0.45 um	1=10 inch 2=20 inch 3=30 inch 4=40 inch	0=DOE 3=SOE, 222/Flat 7=SOE, 226/Fin 8=SOE, 222/Fin	E=EPDM S=Silicon V=Viton