

SuperGuard Pleated Cartridges Polyethersulfone Membrane Filters



SuperGuard U cartridge is a premium sterilizing-grade filter product combining two layers of polyethersulfone membrane with thermally bonded polypropylene components to provide a durable filter for aggressive microfiltration applications. Its double layer membrane configuration makes the cartridge ideally suited for final filtration in critical applications, especially those involving fluids at high temperatures.

SuperGuard U cartridge is manufactured under tightly controlled procedures for consistent and reliable performance. During manufacture, each **SuperGuard U** cartridge is flushed with proprietary solvents followed by ultrapure water, 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 particle retention to minimize filter change-outs during batch processing
- Manufactured under stringent processes to ensure highest level of quality and consistency
- Maximize recovery of critical solution components with extensive drug compatibility and low protein binding characteristics
- Offer great resistance to severe sanitizing agents such as hot water, concentrated hydrogen peroxides, and active chloride compounds
- 100% integrity tested during manufacture to ensure optimal quality product

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, Vinegar, Flavored seltzer

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: Two 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 and 0.2 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

HyperPure

SuperGuard U

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

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: 49 psi (3.4 bar) in water

Typical Liquid Flow Rate

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

0.2 um: 1.2 gpm/psid/10 inch length
(6.6 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	U: Ultrapure	010=0.1 um 020=0.2 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