HyperPure

HyperGuard Pleated Cartridges
Polyethersulfone Membrane Filters

HyperGuard cartridge is a filter specifically designed for reduction of bioburden and particulate levels to protect final 0.1 and 0.2 um system filters. The pleated filter medium is modified polyethersulfone hydrophilic membrane specifically developed for rigorous operating conditions in many filtration applications.

HyperGuard cartridge is designed for low cost and higher throughput than Nylon, PVDF, or Cellulose ester membrane cartridge.

HyperGuard cartridge is compatible with autoclave and in-line steam sterilization, as well as chemical sanitization methods that make it an ideal microporous membrane cartridge for various applications.

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 while maintaining high flow rate
- Reduce microbial bioburden and particulate levels to protect final filters
- 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

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HyperGuard

Typical Applications

Pharmaceuticals and Biologicals:	Parenterals, Ophthalmics, Oral and topical medicines, Serum, Tissue 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: Single layer 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
0.2, 0.45 and 0.8 um

Typical Effective Filtration Area
7.0 ft^2 (0.65 m^2) per 10 inch

Maximum Operating Temperature*
85 °C (185 °F) at 30 psid (2.1 bar)

**supported adapters are recommended for applications at elevated temperature over 55 ℃*

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 6 cycles
In-line Steam:	140 °C (284 °F) for 60 minutes at 2 psid (0.14 bar) up to 3 cycles

Maximum Differential Forward Pressure
0.2 and 0.45 um: 60 psid (4.1 bar) at ambient temperature
0.8 um: 50 psid (3.4 bar) at ambient temperature

Maximum Differential Back Pressure
15 psid (1.0 bar) at ambient temperature

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Maximum Continuous Pressure
Limited by housing

Recommended Integrity Tests
Minimum Bubble Point :
0.2 um: 45 psi (3.1 bar) in water
0.45 um: 28 psi (1.9 bar) in water
0.8 um: 10 psi (0.7 bar) in water

Typical Water Flow Rate
0.2 um: 3 gpm/psid/10 inch length (16.5 lpm/0.1 bar/25.4 cm length)
0.45 um: 5.2 gpm/psid/10 inch length (28.5 lpm/0.1 bar/25.4 cm length)
0.8 um: 10 gpm/psid/10 inch length (54.9 lpm/0.1 bar/25.4 cm length)

Oxidizable Substabces
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

Ordering Information

Model	Grade	Micron Rating	Cartridge Length	Adapter Configuration	Seal Material
HG	**E**: Electronics	020=0.2 um 045=0.45 um 080=0.8 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