Ultradyne® TM0.2 small filter cartridge, or small flow element (SFE), is a hydrophobic PTFE membrane filter offering maximum chemical compatibility with minimal extractables in a wide range of fluids and applications. This filter provides reliable removal of particles and microorganisms from aggressive liquids, including strong acids and bases, and organic solvents. Ultradyne® is optimized for applications requiring complete removal of contaminant bacteria and viruses from air and gas streams, such as fermenter inlet air and exhaust, sterile process air, and sterile venting of tanks, lyophilizers, and autoclaves. The Ultradyne® filter provides high flow rates and throughput under demanding conditions.

Materials of Construction
All components of the Ultradyne® filter are either animal component free or in compliance with EMEA/410/01 Rev. 3 (EDQM 5.2.8 07/2011:50208), and US Code of Federal Regulations 9 CFR 94.18 and 21 CFR 189.5. These materials are listed for food contact use in the Code of Federal Regulations (CFR), Title 21, as below:

Membrane: Polytetrafluoroethylene CFR Title 21, 177.1550
Upstream support: Polypropylene CFR Title 21, 177.1520
Downstream support: Polypropylene CFR Title 21, 177.1520
Outer guard: Polypropylene CFR Title 21, 177.1520
Core: Polypropylene CFR Title 21, 177.1520
End caps: Polypropylene CFR Title 21, 177.1520
O-rings: Typically Silicone CFR Title 21, 177.2600
Sealing method: Thermal bonding

Pore Size
0.2 μm

Minimum Bubble Point
14 psi (0.96 bar), 60% IPA/40% water

Maximum Diffusion Rate
2.5" (7 cm): 2.0 mL/min @ 9 psi (0.62 bar), 60% IPA/40% water
5.0" (13 cm): 4.2 mL/min @ 9 psi (0.62 bar), 60% IPA/40% water

Maximum WIT Rate
2.5" (7 cm): 0.12 mL/min water @ 32 psi (2.20 bar)
5.0" (13 cm): 0.25 mL/min water @ 32 psi (2.20 bar)

Typical Air Flow Rate
2.5" (7 cm): 8.25 scfm/psid (10.2 Nm³/hr @ ∆p 50 mbar)
5.0" (13 cm): 21.55 scfm/psid (26.6 Nm³/hr @ ∆p 50 mbar)

Operating Characteristics
Operating temperature range: 32 °F to 100 °F (0 °C to 38 °C)
Maximum temperature rating: 180 °F @ 30 psid (82 °C @ 2.1 bar)
Maximum operating pressure: 80 psid @ 100 °F (5.5 bar @ 38 °C)
Maximum reverse pressure: 15 psid @ 100 °F (1.0 bar @ 38 °C)

Sterilization
Autoclave: 121°C to 135 °C (15 to 30 psi, 1 to 2 bar), 30 to 60 minutes, ≥ 3 cycles.
Steam-in-place (SIP): 121 °C to 135 °C (15 to 30 psi, 1 to 2 bar), 30 to 60 minutes, ≥ 3 cycles.
Gamma irradiation is not recommended.

Biological Safety
Ultradyne® filters meet the requirements as specified in the current USP <88> Class VI plastics, USP <87> cytotoxicity and pyrogenicity tests. No binders, adhesives or surfactants are used in the construction of Ultradyne® filters. Filters comply with European Commission Regulation No 10/2011.
Quality Assurance
Ultradyne® TM0.2 filters comply with the Food and Drug Administration Code of Federal Regulations, Title 21, Parts 210 and 211. Product is manufactured and packaged in a cleanroom facility that, through voluntary compliance, meets or exceeds FDA Good Manufacturing Practice Standards. To ensure product reliability, Meissner’s Quality Assurance staff continually audits the manufacturing process for conformance to its Quality Management System. Each Ultradyne® filter is integrity tested during manufacture and is clearly marked with filter type and lot number.

Ordering Guide

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<th>Model</th>
<th>Cartridge Configuration</th>
<th>Cartridge Length</th>
<th>O-ring Seal Material</th>
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Cartridge Configuration

- L: 116 O-ring with Mini Lock
- SK: SOE, Skirt-flange adapter (reinforcement or O-ring not required)
- B: SOE, internal 116 O-ring, button cap end
- 2: SOE, 222 O-rings, button cap end
- 6: SOE, 226 O-rings, button cap end

Cartridge Length

- 2: 2.5" (7 cm)
- 5: 5.0" (13 cm)

Product

- Ultradyne® hydrophobic PTFE membrane
- Grade: TM
- Pore Size: 0.2 μm

Additional information about this filter product is available in the Ultradyne® Green Docs document at www.meissner.com/green-docs.

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SSTM17-03.A