**Description**

The Ultradyne® TT0.2 filter cartridge is a hydrophobic PTFE membrane filter offering maximum chemical compatibility with minimal extractables in a wide range of fluids and applications. This sterilizing grade 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 sterility assurance, high flow rates and throughput under demanding conditions. The Ultradyne® TT0.2 filter cartridge is 100% integrity tested during manufacture and has the added benefit of quality certification that meets the critical demands of the pharmaceutical, biotechnology, and related industries.

**Materials of Construction**

All components of the filter cartridge are either animal component free or in compliance with EMEA/410/01 Rev. 3 (EDQM 5.2.807/2011:50208), and US Code of Federal Regulations 9 CFR94.18 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 (PTFE) 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/gaskets:** Typically Silicone CFR Title 21, 177.2600
- **Sealing method:** Thermal bonding

**Pore Size**

0.2 μm

**Minimum Bubble Point**

16 psi (1.10 bar), 60% IPA/40% water, air
16 psi (1.10 bar), 70% IPA/30% water, nitrogen

**Maximum Diffusion Rate**

10 mL/min at 10 psig (0.69 bar), 60% IPA, per 10” (25 cm)

**Water Intrusion Rate**

0.6 mL/min water at 36 psi per 10” (0.6 mL/min water at 2.48 bar per 25 cm)

Specification can vary by instrumentation; consult Meissner.

**Typical Water Flow Rate**

0.4 psid/gpm per 10” (1.37 L/min at Δp 10 mbar per 25 cm)

**Typical Air Flow Rate**

50 scfm/psid per 10” (61.6 Nm³/hr at Δp 50 mbar per 25 cm)

**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)

**Bacterial Retention**

>10⁷ per cm² removal of *Brevundimonas diminuta* per ASTM F838

**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.

Irradiation is not recommended.

**Biological Safety**

Ultradyne® filters meet the requirements as specified in the current USP <88> Class VI plastics, <87> cytotoxicity and pyrogenicity tests. No binders, adhesives, or surfactants are used in its construction. Filters comply with Commission Regulation (EU) No 10/2011.
**Quality Assurance**

Each Ultradyne® TT0.2 filter cartridge is supplied with a Certificate of Quality verifying the high standards and superior performance of the product. Ultradyne® 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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**Reinforcement Ring Option**

- (blank): Standard, no reinforcement ring
- R: Reinforcement ring required for autoclave/SIP applications

**Cartridge Configuration**

- C2: SOE, 222 O-rings, button cap end
- C6: SOE, 226 O-rings, button cap end
- F2: SOE, 222 O-rings, fin end
- F6: SOE, 226 O-rings, fin end

* See Green Docs for other configurations

**Cartridge Length**

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

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