Chemdyne® Filter Cartridge

The Chemdyne® filter cartridge is an absolute rated, pleated membrane filter that is constructed of 100% pure polypropylene. It provides maximum chemical compatibility, performance and economy while controlling contaminants in critical processes. Its pure polypropylene membrane is made by a patented process, which produces a highly porous structure that is inherently hydrophobic. This uniform structure maintains consistent porosity and particle retention throughout its operational life, even after repeated in-line steam sterilization or autoclaving. A unique, state-of-the-art process thermally bonds the filter and support components to the cartridge end caps. This produces an integral filter cartridge with excellent chemical compatibility and exceptionally low extractables levels.

Available in absolute retention ratings of 0.04, 0.1 and 0.2 micron, the Chemdyne® filter offers a cost effective alternative to PTFE membrane filter cartridges. Constructed entirely of inert polypropylene, the Chemdyne® filter offers similar chemical compatibility, reliability, and performance of PTFE membrane cartridges.

Features and Benefits

• 100% polypropylene components provide wide chemical compatibility and permit use in a broad range of fluids and applications

• Absolute ratings of 0.04, 0.1 and 0.2 micron deliver precise particle retention at rated level

• Unique polypropylene membrane offers high flow rates, long service life and is a cost effective alternative to PTFE membranes

• Inherently hydrophobic membrane provides a natural barrier to water without the use of additives or surface modifying agents which can leach or wash out

• Rugged, thermally bonded construction ensures reliable integrity under severe process conditions and withstands multiple sterilizations

• Contains no binders or adhesives for wide solvent compatibility with extremely low extractables

• Fully integrity testable for assurance of product integrity and effectiveness in operation

• 100% integrity tested by factory to guarantee product reliability and consistency

• Biologically inert and non-toxic - Chemdyne® meets FDA requirements for food contact use and is biosafe in compliance with USP Class VI biological reactivity tests

Typical Applications

Chemdyne® meets the critical demand for contamination control in the chemical, microelectronics, aerospace, photonics, biologicals, pharmaceutical, cosmetics, and other industries. The Chemdyne® cartridge is designed for the removal of particulates, colloids and microorganisms from solvents, corrosive chemicals and gases. It also offers high security for bulk and point-of-use filtration.

Typical chemicals include:
- Acids
- Bases
- Alcohols
- Solvents
- Etchants
- Photoresists
- Photolithographic solutions

For aqueous solutions, the Chemdyne® filter must be pre-wet by immersion in a suitable low surface tension fluid.

The inherently hydrophobic Chemdyne® filter is ideal for gas filtration applications which include:
- Compressed air
- Fermentation air
- Pressurized gases
- Tank ventilation
Materials of Construction
Filter Membrane: Polypropylene
Upstream Support: Polypropylene
Downstream Support: Polypropylene
Core/Outer Guard: Polypropylene
End Caps: Polypropylene
Sealing Method: Thermal Bonding
O-ring/Gasket Seal: Buna, EPR, polyethylene, silicone, Teflon® over silicone, Teflon® over Viton®

All materials of construction listed above meet FDA standards for food contact per 21 CFR 177.

Filters comply with European Commission Regulation No. 10/2011. Chemdyne® filters meet the requirements as specified in the current USP Class VI plastics, pyrogen and cytotoxicity tests. No binders, adhesives or surfactants are used in the construction of Chemdyne® filters. Chemdyne® filters are non-fiber-releasing as defined in 21 CFR 210.3(b)(6) and 211.72.

Filtration Ratings
Filter Grade Absolute Ratings (µm)
PM 0.04, 0.1, 0.2
PT 0.2

Integrity Testing
Minimum Bubble Point, 60% IPA
0.04 µm 29 psi (2,0 bar)
0.1 µm 24 psi (1,7 bar)
0.2 µm 10 psi (0,7 bar)

Bacterial Retention
ASTM F838-05 Challenge
0.1 µm, 0.2 µm > 10^7 cfu/cm^2 Brevundimonas diminuta
(0.1 µm, 0.2 µm meet the FDA definition of a liquid rated sterilizing grade filter.)

Sterilization
Steam-in-place (SIP):
saturated steam @ 121-135 °C, 30-60 minutes
[15-30 psi (1-2 bar), 30-60 minutes]
Autoclave: 121-125 °C, 30-60 minutes
Chemdyne® cartridges are capable of repeated sterilization cycles without loss of integrity. For applications requiring autoclave/SIP, a stainless steel reinforcement ring must be ordered. See “Reinforcement Ring Option” within the Ordering Information.

Maximum Operating Temperatures and Pressures
∆p 80 psi @ 32 °F to 100 °F (∆p 5,5 bar @ 0 °C to 38 °C)
∆p 60 psi @ 150 °F (∆p 4,1 bar @ 66 °C)
∆p 30 psi @ 180 °F (∆p 2,1 bar @ 82 °C)

Cartridge Dimensions (nominal)
Diameter: 2.75" (7 cm)
Length: 10", 20", 30", 40" (25 cm, 50 cm, 75 cm, 100 cm)

Typical water flow rates per 10" cartridge
Typical air flow rates per 10" cartridge
## End Cap Configurations

### Flat Gasket
Flat Gasket; open end for GS and GL DOE configurations

### Internal O-ring
Internal O-ring; open end for DN and DA DOE or RN and RA SOE configurations

### Button Cap
Button Cap; closed end for C1, C2, C5 and C6 SOE configurations

### Alignment Fin
Alignment Fin; closed end for F1, F2, F5 and F6 SOE configurations

### Recessed Cap
Recessed Cap; closed end for RN and RA SOE configurations

### Ordering Information

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| PM 1 | 10" (25 cm) | GS = DOE; flat gaskets (9.75", 19.5", 29.25", 39" length filters) |
| PM 2 | 20" (50 cm) | GL = DOE; flat gaskets (20", 30", 40" length filters) |
| PM 3 | 30" (75 cm) | C1 = SOE; -222 nO-Ring®, button cap end |
| PM 4 | 40" (100 cm) | C2 = SOE; -222 O-rings, button cap end |
|       |             | F1 = SOE; -222 nO-Ring®, fin end |
|       |             | F2 = SOE; -222 O-rings, fin end |
|       |             | C5 = SOE; -226 nO-Ring®, button cap end |
|       |             | C6 = SOE; -226 O-rings, button cap end |
|       |             | F5 = SOE; -226 nO-Ring®, fin end |
|       |             | F6 = SOE; -226 O-rings, fin end |
|       |             | DN = DOE; internal -120 O-rings |
|       |             | RN = DOE; internal -120 O-ring, recessed cap end |
|       |             | DA = DOE; internal -213 O-rings |
|       |             | RA = DOE; internal -213 O-ring, recessed cap end |

### Reinforcement Ring Option
- **R** = Reinforcement ring; required for autoclave/SIP applications
- (Blank) = Standard - no reinforcement ring

### Seal Material (O-ring or Gasket)
- **O-ring Seal**
  - **B** = Buna
  - **E** = EPR
  - **S** = Silicone
  - **T** = Teflon® over silicone
  - **V** = Viton®

- **Gasket Seal**
  - **B** = Buna
  - **E** = EPR
  - **P** = Polyethylene
  - **S** = Silicone
  - **T** = Teflon®
  - **V** = Viton®

### Filter Grade Descriptions
- **PM** = This sterilizing grade filter is absolute, microbially rated and 100% integrity tested during manufacture. It is suited for critical applications when regulatory documentation requirements are minimal. A Certificate of Conformance is available on a lot basis.
- **PT** = This absolute, microbially rated, sterilizing grade filter meets full traceability requirements for the pharmaceutical industry. It is 100% integrity tested during manufacture. Each PT grade filter is shipped with a Certificate of Quality stating exact quality control criteria and test performance results. This is a validatable product to meet the stringent requirements of the pharmaceutical industry.

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