

Chemdyne®



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 Media: 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, Viton®, Teflon® over Viton®

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)

Cartridge Dimensions (nominal)

Diameter: 2.75" (7 cm)
 Lengths: 10", 20", 30", 40"
 (25 cm, 50 cm, 75 cm, 100 cm)

Bacterial Retention

ASTM F838-05 Challenge
 0.1 µm, 0.2 µm > 10⁷ cfu/cm² *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

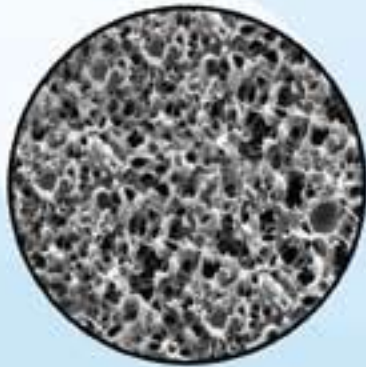
Chemdyne® cartridges are capable of repeated sterilization cycles without loss of integrity. For applications requiring autoclave/SIP, a stainless steel reinforcement ring must be ordered. See "Reinforcement Ring Option" on back page.

Maximum Operating Temperatures and Pressures

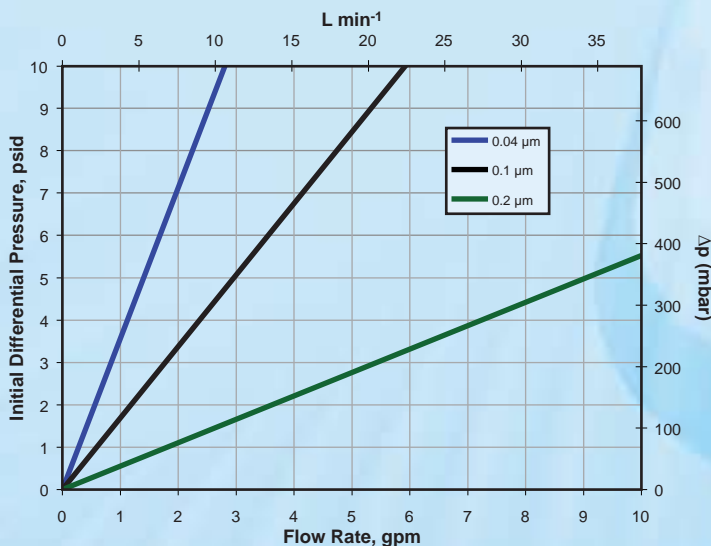
80 psid @ 32°F to 100°F
 (Δp 5,5 bar @ 0°C to 38°C)

60 psid @ 150°F
 (Δp 4,1 bar @ 66°C)

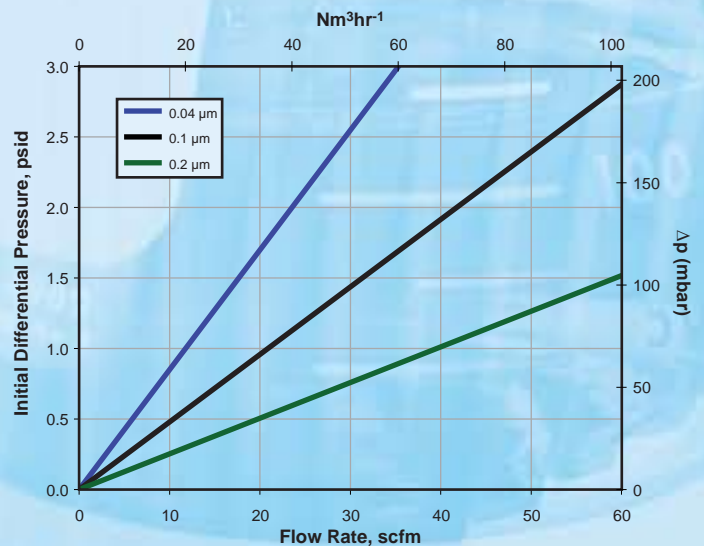
30 psid @ 180°F
 (Δp 2,1 bar @ 82°C)



Typical Water Flow Rates per 10" Cartridge



Typical Air Flow Rates per 10" Cartridge



End Cap Configuration



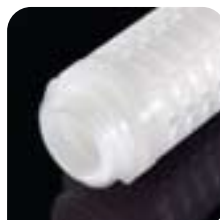
-226 O-ring

External -226 O-rings with locking tabs; open end for C6 and F6 SOE configurations



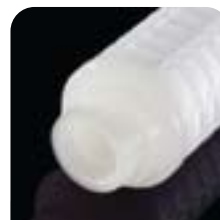
-222 O-ring

External -222 O-rings; open end for C2 and F2 SOE configurations



-226 nO-Ring

External -226 nO-Ring® with locking tabs; open end for C5 and F5 SOE configurations



-222 nO-Ring

External -222 nO-Ring®, open end for C1 and F1 SOE 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



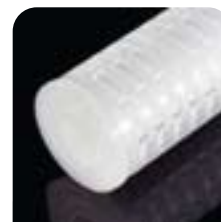
Button Cap

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

DOE = Double Open End
SOE = Single Open End

Ordering Information

Filter Grade	Absolute Rating (µm)	Cartridge Length	End Cap Configuration	Reinforcement Ring Option	Seal Material (O-ring or Gasket)
PM	0.2	- 3	F2	R	S
PM	0.04, 0.1, 0.2	1 = 10" (25 cm) 2 = 20" (50 cm) 3 = 30" (75 cm) 4 = 40" (100 cm)	GS = DOE; flat gaskets (9.75", 19.5", 29.25", 39" length filters) GL = DOE; flat gaskets (20", 30", 40" length filters) C1 = SOE; -222 nO-Ring®, button cap end 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 F5 = SOE; -226 nO-Ring®, fin end C6 = SOE; -226 O-rings, button cap end F6 = SOE; -226 O-rings, fin end DN = DOE; internal -120 O-rings RN = SOE; internal -120 O-rings, recessed cap end DA = DOE; internal -213 O-rings RA = SOE; internal -213 O-rings, recessed cap end	(Blank) = Standard - no reinforcement ring R = Reinforcement ring; required for autoclave/SIP applications	<u>O-ring Seal</u> B = Buna E = EPR S = Silicone T = Teflon® over Silicone V = Viton® X = Teflon® over Viton® <u>Gasket Seal</u> B = Buna E = EPR P = Polyethylene S = Silicone T = Teflon® V = Viton®

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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