

NanoSHIELD[®] S Series

Polypropylene Filter Cartridges

High Flow Rates, Low Pressure Drop, and Longer Filter Lifetime

NanoSHIELD S Series polypropylene filter cartridges have been engineered to combine the highest level of particle retention with superior flow rates and minimal pressure drop for most chemical applications. Utilizing Hollow Fiber Technology (HFT), NanoSHIELD is able to provide up to 2 times more filtration surface area as compared to an equivalent size pleated filter. This translates into significantly higher flow rates and lower pressure drop. In addition, CUNO's HFT produces a membrane that is up to 2 times thicker than other technologies which in turn maximizes the depth of filtration and particle removal efficiency.

Peak Performance Provided by Hollow Fiber Technology (HFT)

A single NanoSHIELD 10" filter cartridge can replace one standard 20" pleated filter cartridge rated similarly. Increasing flow rates while maintaining filter efficiency provides for faster bath clean-up, reduced pump wear and lower energy consumption. Up to 2 times more surface area than similar size pleated filter cartridges allows NanoSHIELD S a lower pressure drop and increased contact or residence time with high viscosity fluids like polyimide. Maximizing filtration surface area and contact time improves filtration efficiency and reduces recirculation time.

NanoSHIELD S Series Cartridge Construction

The hollow fiber polypropylene membrane in an all polyethylene construction provides excellent resistance to most chemicals. All NanoSHIELD S Series filters are manufactured in a cleanroom to reduce particle adders and extractables, cleaned and integrity tested to ensure process repeatability out of the box.

Features & Benefits

Hollow Fiber Technology.

- Up to 2 times more surface area as compared to equivalent sized pleated filters.
- Higher flow rates, lower pressure drop, and longer life.
- Increased filtration performance in high viscosity fluids.
- Increased depth (2x thicker) of filtration results in improved particle retention.
- Superior removal of gels, and micro-bubbles.

Large Surface Area

- Up to 5 times higher flow rates as compared to other pleated cartridges.
- Increased lifetime, throughput, and overall equipment effectiveness (OEE).

Compact Design.

- Allows for smaller, less costly filter housings.
- Reduces hold-up volume, exposure, and waste of expensive chemicals.

Quality Manufacturing.

- Manufactured in a cleanroom to reduce particle adders and extractables.
- All filters are critically cleaned and integrity tested to ensure process repeatability.



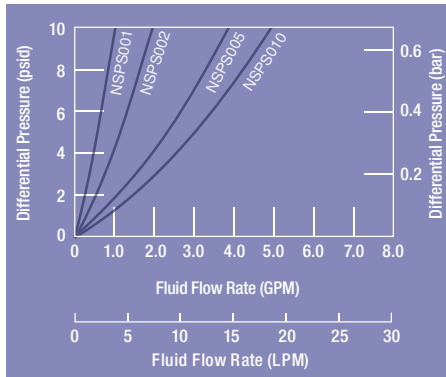
Applications

Anti-Reflective Coatings	Color Filter
Parts Cleaning	Photoresists
Polyimide	Resins
Color Resist	High Viscosity Chemicals
High Purity Process Water	Fine Chemicals
Alcohols	Bases
Developers	Solvents

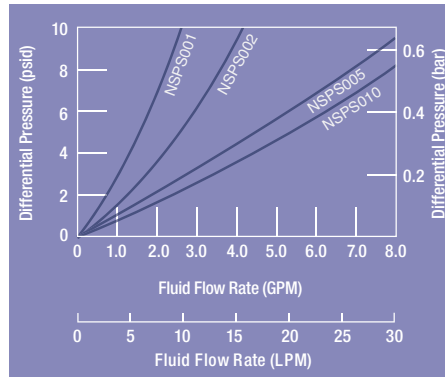
NanoSHIELD® S Series Polypropylene Filter Cartridge

Typical Cartridge Flow vs. Differential Pressure (1cps @ 25°C)

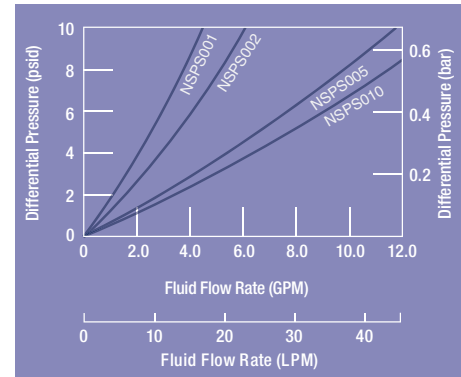
Graph 1: 5" NanoSHIELD Cartridge



Graph 2: 10" NanoSHIELD Cartridge



Graph 3: 20" NanoSHIELD Cartridge



NanoSHIELD S Series Filter Cartridge Specifications

Membrane Material	Hydrophobic Polypropylene
Cage and End Caps	Polyethylene
Potting Material	Polyethylene
Filtration Surface Area	5" Cartridge – 10.8 ft ² (10,000 cm ²) 10" Cartridge – 23.7 ft ² (22,000 cm ²) 20" Cartridge – 47.3 ft ² (44,000 cm ²)
Cartridge Outside Diameter	2.75" (7 cm) nominal
Length	Nominal 5, 10, and 20" (12.7, 25.4, and 50.8 cm)
Maximum Operating Pressure	58 psig @ 77°F (4 bar @ 25°C)
Maximum Differential Pressure	28 psid @ 77°F (1.9 bar @ 25°C)
Maximum Operating Temperature	104°F (40°C)
Absolute Removal Ratings (µm)	0.01, 0.02, 0.05, and 0.1
Filter Capsule Integrity	100% Tested

Ordering Guide

Media	Removal Rating	Configuration	Length	Fitting Connection	O-Ring Material
NSPS	001 - 0.01 µm 002 - 0.02 µm 005 - 0.05 µm 010 - 0.1 µm	H	50 - 5" 01 - 10" 02 - 20"	B - 226 O-Ring & Spear C - 222 O-Ring & Spear F - 222 O-Ring & Flat Cap J - 226 O-Ring & Flat Cap	C - EPDM K - Fluorocarbon Encapsulated PTFE (FEP)

* Available in F and J end modifications only.
Consult factory for pre-wet options.

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