

NanoSHIELD[®] LHV

Filter Tubes

Low Hold-Up volume Testing of Experimental Photoresists and Ancillary Chemicals

NanoSHIELD LHV filter tubes have been specially designed to provide superior particle retention and low hold-up volume for advanced photoresists and ancillary chemicals. Utilizing Hollow Fiber Technology (HFT), NanoSHIELD filters are able to deliver high flow rates with low hold-up volume, to minimize the waste of experimental photoresist formulations. The tubes are offered in 1/4" and 3/8" outside diameters thereby allowing common compression fittings to connect directly to the outside of the NanoSHIELD LHV tube. In addition, a syringe can also be used to inject fluid directly into the tube.

These small compact filter tubes allow material suppliers to assess parameters such as material compatibility, photo-speed, particle retention, and lithography in a rapid and cost effective manner. NanoSHIELD LHV filter tubes contain the same filter media as full size NanoSHIELD filter cartridges and capsules, ensuring a consistent level of quality throughout laboratory, pilot, and full-scale production testing. The NanoSHIELD family of products is offered in several configurations to allow the end user to match the volume of fluid with the appropriate filter in an effort to reduce chemical waste.

NanoSHIELD LHV filter tubes are ideally suited for critical applications requiring high particle retention and high flow rates at 0.01, 0.02, 0.05, and 0.1 µm.



Features & Benefits

Hollow Fiber Technology.

- More filtration per surface area as compared to pleated filters.
- Provides both lower operating and differential pressure across the filter to minimize outgassing and micro-bubble formation.

Polypropylene and Polyethylene Construction.

- Excellent chemical resistance to photoresists and ancillary chemicals.
- No IPA pre-wetting and system flushing required.

0.01 µm and 0.02 µm Retention Ratings.

- Superior removal of particles, gels, and micro-bubbles.
- Reduced micro-bridge and wafer level defects for 193 nm photoresists.

Small Compact Design.

- Reduced hold-up volume and waste of expensive chemicals.

Applications






193 nm Photoresists	Alcohols
ARC, BARC, TARC	Bases
Etchants/ Strippers	Developers
Polyimide	Solvents

NanoSHIELD® LHV Filter Tube

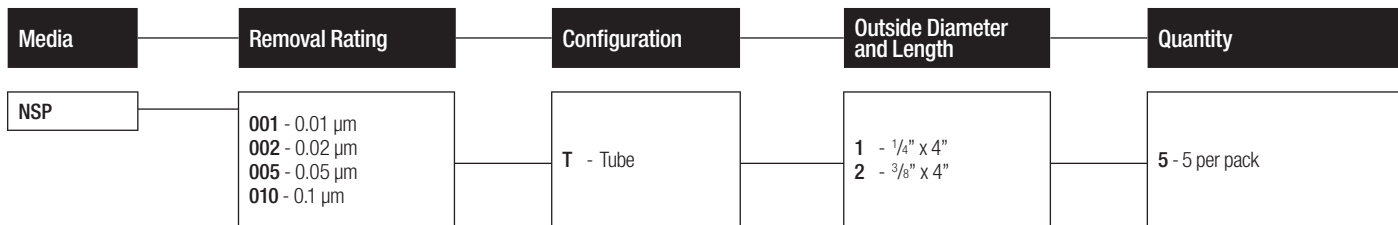
NanoSHIELD LHV Filter Tube Specifications

Membrane Material	Hollow Fiber Polypropylene
Tubing Material	Polyethylene
Potting Material	Polyethylene
Filtration Surface Area – 1/4" tube	3.9 in ² (25 cm ²)
Filtration Surface Area – 3/8" tube	17 in ² (110 cm ²)
Outside Diameter (nominal)	1/4" (6.4 mm), 3/8" (9.5 mm)
Length (nominal)	4.1" (10.5 cm)
Maximum Operating Pressure	58 psig @ 77°F (4 bar @ 25°C)
Maximum Operating Temperature	104°F (40°C)
Absolute Removal Ratings (µm)	0.01, 0.02, 0.05, and 0.1
Maximum Differential Pressure	28 psid @ 77°F (1.9 bar @ 25°C)
Filter Integrity	100% Tested

Full Scale-Up – The NanoSHIELD Filter Family

LHV		LHV Tubes	Laboratory Testing on New Formulations
SDC		SDC Capsules	Pilot Scale Production up to 1 gallon
MDC		MDC Capsules	Pilot Scale Production up to 5 gallons
LDC		LDC Capsules	Pilot Scale Production up to 100 gallons
HFP		HFP Filter Cartridges	Full Scale Production greater than 100 gallons

Ordering Guide



Example – A single package (5 pieces) of 1/4" x 4" tubes, rated at 0.01 micron, would be NSP001T15.

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