NSPD Filters

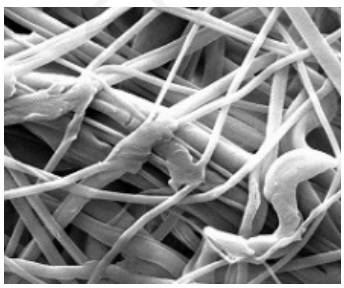
Nano-Spun Polypropylene Depth Media

NSPD filters are part of Critical Process Filtration's economical, general service product line that can be used to lower the total cost of filtration from simple to the most complex applications. Produced using the same quality materials and manufacturing excellence as our other product lines, you can be assured of their performance, dependability and scalability. While general service filters are not integrity tested or validated for retention, these highly efficient filters remove large amounts of contaminants early in the process to reduce the load on your expensive downstream filters. They are also useful as stand-alone clarifying or particle removal filters in less critical applications.

NSPD cartridge and capsule filters are made with Nano-spun Polypropylene depth media, which is the laying down of graded density fibers on a spinning core and used when filtering fluids with high contaminant loading. Pore sizes range from 0.5 to 100 µm.

The NSPD products are engineered to hold large amounts of contaminants and still provide 99% retention at the rated pore size. NSPD filters protect downstream membrane filters and improve process efficiency.

Critical Process provides unrivaled delivery times, technical consulting before purchasing, and very competitively priced high-performance products. Our comprehensive testing & analysis and validation services support your team whenever they need it. Your process experts partnering with our filtration experts is how we deliver your company's solution right the first time.



NSPD filters are recommended for clarification & prefiltration of:

- High Purity Chemicals
- Fermentation Broths
- Wine, Beer, Juices
- Buffers & Biologicals
- Container Wash Solutions
- Inks & Dyes
- CMP Slurries
- Water Purification

Clarification & Prefiltration

Particle Filtration

CARTRIDGES – Nominal Dimensions
Length: 5 to 40 in. (12.7 to 101.6 cm)
Outside Diameter: 2.50 in. (6.35 cm)

CAPSULES – Nominal Dimensions
Length: 2 to 30 in. (5.1 to 76.2 cm)
Outside Diameter: 3.50 in. (8.9 cm)

Critical Process Filtration, Inc.

Maximum Operating Parameters

	CARTRIDGES	CAPSULES
Liquid Operational Pressure	N/A	80 psi at 68 °F (5.52 bard at 20 °C)
Gases Operational Pressure	N/A	60 psi at 68 °F (4.14 bar at 20 °C)
Operating Temperature (water)	140 °F at 30 psid (60 °C at 2.07 bard)	110 °F at 30 psid (43 °C at 2.07 bard)
Forward Differential Pressure	50 psid at 68 °F (3.45 bard at 20 °C)	50 psid at 68 °F (3.45 bard at 20 °C)
Reverse Differential Pressure	20 psid at 68 °F (1.38 bard at 20 °C)	20 psid at 68 °F (1.38 bard at 20 °C)
Recommended Changeout Pressure	35 psid (2.41 bard)	35 psid (2.41 bard)

Sanitization & Sterilization

Chemical Sanitization	Performed using industry standard concentrations of hydrogen peroxide, peracetic acid, sodium hypochlorite and other selected chemicals.

Construction Materials

Filtration Media	Melt-Blown Polypropylene Depth Media
End Caps, Capsule Housing	Polypropylene
Sealing Method	Thermal Bonding
O-Rings/Gaskets Cartridges only	Buna, Viton® (or FKM), EPDM, Silicone, FEP Encapsulated Silicone, FEP Encapsulated Viton (or FKM)

Endotoxins

The levels of bacterial endotoxins in aqueous extracts from NSPD filters are below current USP limits as specified for water for injection.

Extractables

NSPD filters typically exhibit low levels of non-volatile residues.

Non-Fiber Releasing

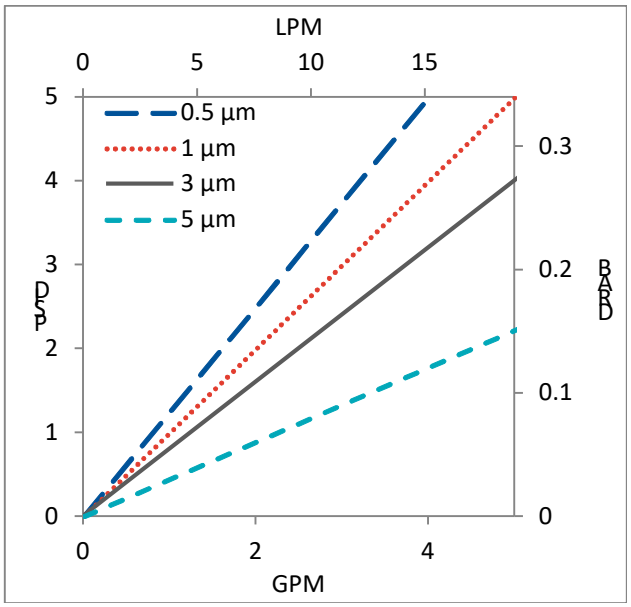
NSPD filters comply with Title 21 CFR sections 210.3 (b)(6) and 211.72, for non-fiber releasing filters.

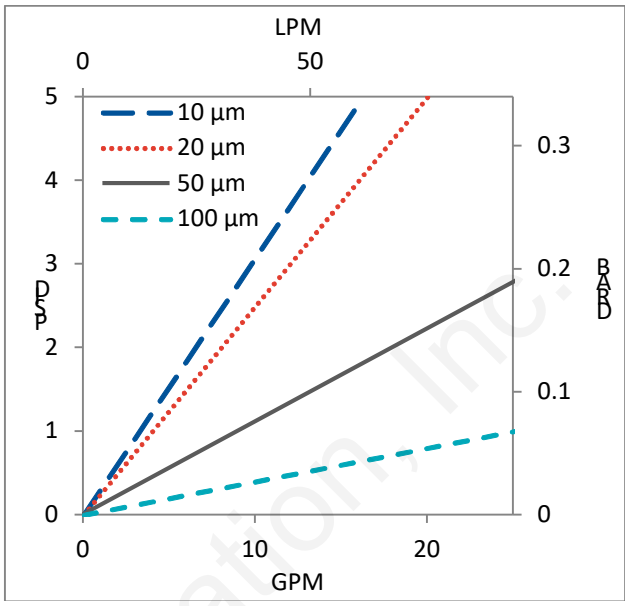
FDA Compliance

Materials meet the requirements listed by the FDA as appropriate for use in articles intended for repeated food contact as specified in Title 21 CFR sections 174.5, 177.1500, 177.1520, 177.1630, 177.2440, and 177.2600 as applicable.

© Critical Process Filtration, Inc.

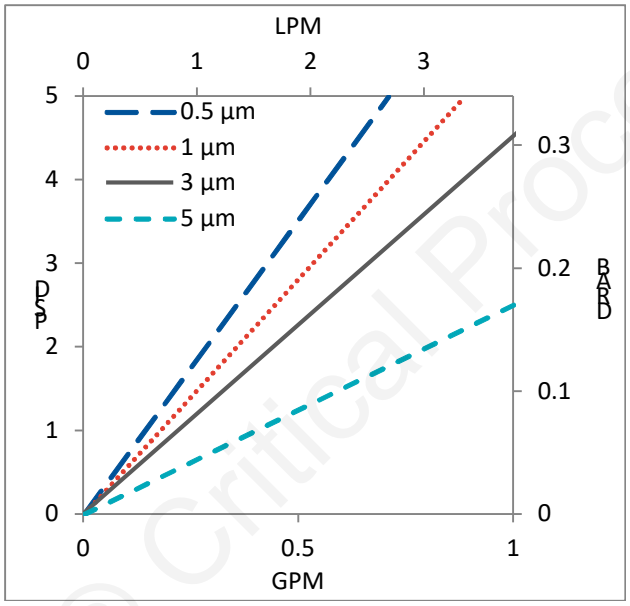
Flow Rates for NSPD Cartridges by Pore Size

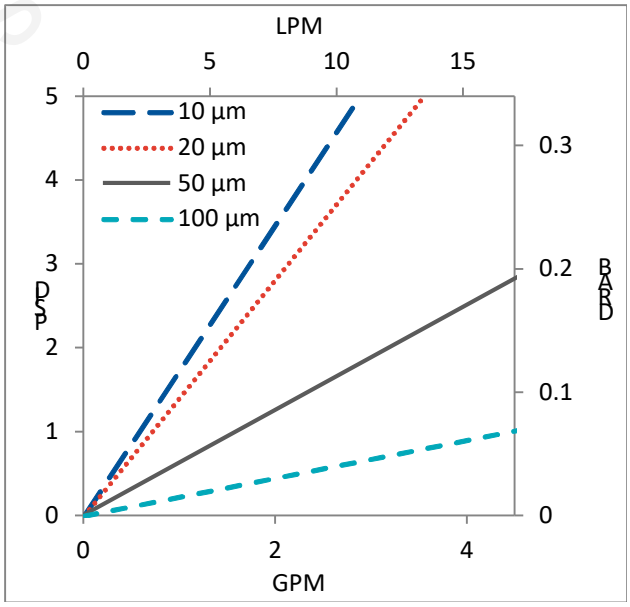




Flow rates for Cartridge filters are per 10-inch length. The test fluid is water at ambient temperature.

Flow Rates for NSPD Capsules by Pore Size





Flow rates for Capsule filters are tested using a 2" capsule filter with 1" sanitary inlet and outlet ports. The test fluid is water at ambient temperature. Flow rates for larger capsules will scale with filtration area. Rates will vary based on end configuration of the capsule.

© Critical Process Filtration, Inc.

NSPD Filters Ordering Information

Fill in the corresponding codes in the boxes below to build your Part Number.

To consult with one of our technical team members, request a quote or place an order:
call (603) 880-4420 or contact us here.

Cartridge Filters

NSPD [ ] N 000 [ ] [ ] [ ]

Pore Size Code
-50 = 0.5 µm
1-0 = 1.0 µm
3-0 = 3.0 µm
5-0 = 5.0 µm
10- = 10 µm
20- = 20 µm
50- = 50 µm
999 = 100 µm

Length
05 = 5 in. (12.7 cm)
97 = 9.75 in. (24.8 cm)
01 = 10 in. (25.4 cm)
02 = 20 in. (50.8 cm)
03 = 30 in. (76.2 cm)
04 = 40 in. (101.6 cm)

O-Ring/Gasket Code
X = No Gasket
S = Silicone
B = Buna
V = Viton (or FKM)
T = FEP Encapsulated Viton (or FKM)
E = EP
R = FEP Encapsulated Silicone
P = Polyethylene Integra

End Cap Code
0 = Flat Gasket, DOE
5 = 2-222 O-ring/Flat
6 = 2-226 O-ring/Flat
8 = 2-222 O-ring/Spear
9 = 2-226 O-ring/Spear

Capsule Filters

CP NSPD [ ] N 000 [ ] [ ] [ ] - [ ] [ ]

Pore Size Code
-50 = 0.5 µm
1-0 = 1.0 µm
3-0 = 3.0 µm
5-0 = 5.0 µm
10- = 10 µm
20- = 20 µm
50- = 50 µm
999 = 100 µm

Length
A = 2”
B = 5”
1 = 10”
2 = 20”
3 = 30”

Inlet
A = 1/4” Female NPT
B = 1/4” Male NPT
C = 3/8” Female NPT
D = 1/2” Female NPT
E = 1/2” Male NPT
F = 1” Sanitary
G = Hose Barb*
H = 1 ½” Sanitary with side vent
I = ½” Single Stepped Barb with side vent
J = ¾” Single Step Barb with Bleed Side Vent
Y = 3/8” Compression (JACO©) (Top Luer lock vent only)
Z = 6mm Quick Disconnect (Top Luer lock vent only)

Outlet
A = 1/4” Female NPT
B = 1/4” Male NPT
C = 3/8” Female NPT
D = 1/2” Female NPT
E = 1/2” Male NPT
F = 1” Sanitary
G = Hose Barb*
H = 1 ½” Sanitary with side vent
I = ½” Single Stepped Barb with side vent
IB = ½” Single Stepped Barb with filling bell and side vent
J = ¾” Single Step Barb with Bleed Side Vent
Y = 3/8” Compression (JACO©) (Top Luer lock vent only)
Z = 6mm Quick Disconnect (Top Luer lock vent only)

Side Vent Options
1 = Luer Lock
2 = 1/8” Bleed Valve
3 = ¼” Bleed Valve

O-Rings
(Bleed Valves Only)
S = Silicone
E = EP
V = Viton
B = Buna
K = FFKM

*Fits hoses/tubes with inner diameter 11/32 to 9/16 inches

© Critical Process Filtration, Inc.

CRITICAL PROCESS FILTRATION, INC.

One Chestnut Street
Nashua, NH 03060
603.880.4420
FAX: 603.880.4536

CriticalProcess.com

The information contained herein is subject to change without notice. The Critical Process Filtration logo is a trademark of Critical Process Filtration, Inc. Viton is a trademark of DuPont Performance Elastomers L.L.C.
© 2025 Critical Process Filtration, Inc. • All Rights Reserved

Data Sheet NSPDDS Rev C