

# ENM Capsule Filters

Nylon 6,6 Membrane



## Applications

- ◆ UP DI Water
- ◆ Chemicals
- ◆ Photoresists
- ◆ Developers
- ◆ Solvents

ENM Capsules are hydrophilic and manufactured with the highest quality Nylon 6,6 membrane. The Nylon 6,6 is capable of removing particles below the rated micron size, and exhibits broad chemical compatibility.

ENM capsules are used for critical applications in contamination control such as final filtration of ultrapure DI water in the water loop or at the point of use. They are also used for final filtration of solvents, alcohols, photoresists and other liquids in distribution systems or in tools.

Nylon has very low extractables and rinses to high purity very quickly. It is particularly suited for the filtration of solvents used in the production of low nanometer geometry products.

High efficiency retention ratings with broad chemical compatibility

Final filtration of UPDI water, resists, solvents

Very low extractables; rinses to high purity very quickly

## ENM Capsule Filters - Filtration Area

Media	Capsule Length				
	2"	5"	10"	20"	30"
<b>Nylon 6,6 Membrane</b>	1.0 ft <sup>2</sup> (930cm <sup>2</sup> )	3.0 ft <sup>2</sup> (2788cm <sup>2</sup> )	7.0 ft <sup>2</sup> (6503cm <sup>2</sup> )	14.0 ft <sup>2</sup> (13006cm <sup>2</sup> )	21.0 ft <sup>2</sup> (19509cm <sup>2</sup> )

## Flow Rate / Filtration Area

The following table represents typical water flow at a one psi (69 mbar) pressure differential across a single 2 inch capsule with 1.0 ft<sup>2</sup> (930 cm<sup>2</sup>) of media with 1/2" FNPT ports. The test fluid is water at ambient temperature. Higher pressure drops are acceptable, but as flows increase the pressure drop of the housing becomes more apparent.

Pore Size	0.10 μm	0.22 μm	0.45 μm	0.65 μm
<b>GPM</b>	0.14	0.25	0.43	0.60
<b>LPM</b>	0.53	0.95	1.63	2.27

\* For approximate flow rates for 5" through 30" capsules, refer to the appropriate cartridge data sheet

## Construction Materials

<b>Housing</b>	Polypropylene
<b>Filtration Media</b>	Nylon 6,6 Membrane
<b>Media Support</b>	Polypropylene
<b>End Caps</b>	Polypropylene
<b>Center Core</b>	Polypropylene
<b>Outer Support Cage</b>	Polypropylene
<b>Sealing Method</b>	Thermal Bonding

## Maximum Operating Parameters

<b>Liquid Operational Pressure</b>	80 psi (5.5 bar) at 20 °C (68 °F)
<b>Gases Operational Pressure</b>	60 psi (4.1 bar) at 20 °C (68 °F)
<b>Operating Temperature</b>	43 °C (110 °F) at 30 psi (2.1 bar) in water
<b>Forward Differential Pressure</b>	50 psid (3.4 bard) at 20 °C (68 °F)
<b>Reverse Differential Pressure</b>	40 psid (2.7 bard) at 20 °C (68 °F)
<b>Recommended Changeout Pressure</b>	35 psid (2.4 bard)

## Integrity Test Specifications

Pore Size	Test Pressure (psi)	Max Diffusion Rate (cc/min -water wetted membrane)				
		2"	5"	10"	20"	30"
0.10	48	4.3	12.9	30	60	90
0.22	35	4.3	12.9	30	60	90
0.45	20	4.3	12.9	30	60	90
0.65	15	4.3	12.9	30	60	90

## Sanitization/Sterilization

**Autoclave** ..... 250° F (121° C), 30 min, multiple cycles

**Chemical Sanitization** .....Nylon does not tolerate aggressive chemical sanitization protocols. Nylon membrane cartridges are best sanitized with 1% hydrogen peroxide or 1% hydrogen peroxide and peracetic acid. Follow the manufacturers instructions for use on nylon filter devices.

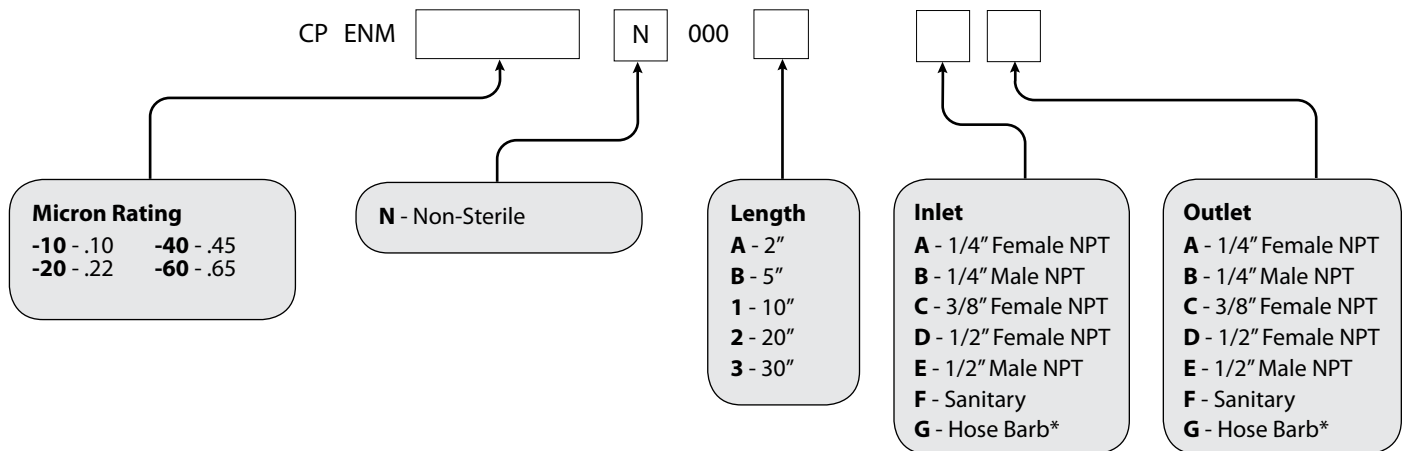
**Note** .....ENM capsules are not to be used in steam.

## Extractables

The levels of extractables in aqueous extracts from E-grade capsule filters are below 3ppb of TOC after product rinse during manufacturing. E-grade filters typically exhibit very low levels of non-volatile residues during startup.

## Ordering Information

Capsule order number example: Electronics Grade Nylon 6,6 Membrane, 0.10 Micron Rating, Non-Sterile, 10" Length, Sanitary Inlet, Sanitary Outlet = CPENM-10N0001FF



Hose Barb Diameter Ranges\*

	Minimum	Maximum
<b>Outer Diameters</b>	11/32" (8.6mm)	9/16" (14.0mm)
<b>Inner Diameters</b>	5/32" (4.0mm)	13/32" (10.5mm)

## Quality Assurance and Standards

Critical Process Filtration uses state of the art computer controlled equipment to consistently produce high quality products as well as significantly reduce hand operations that can compromise quality. All manufacturing and testing is continuously monitored in real time so that data can be quickly and easily analyzed to facilitate improvements in both quality and cost.

The Critical Process Filtration manufacturing and quality systems meet rigorous ISO 9001:2008 standards. Each operation, including assembly, testing, cleaning, drying and packaging, is done in an appropriately rated clean room. Manufacturing is controlled using a sophisticated manufacturing system that networks work stations, manufacturing centers and inspection points. During the manufacturing and inspection processes, data is collected in real time to allow continuous quality monitoring and full traceability of all materials and processes.

Each capsule assembly is integrity tested before release.

## Total Performance

Critical Process Filtration, Inc. is a vertically integrated manufacturer of filtration products to industries in which filtration is considered a critical part of the manufacturing process. We supply a complete line of products and services to help you cost effectively satisfy all your filtration requirements from a single source.

Request a **QUOTE** from your area representative



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