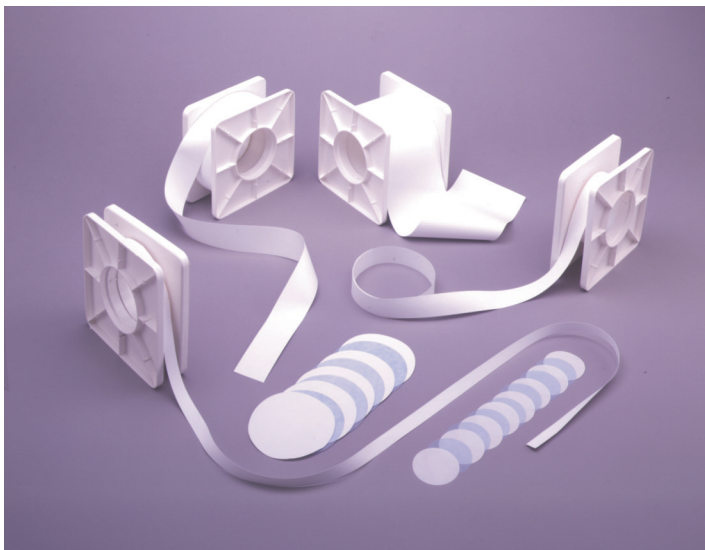


Customized Nylon Membranes for Consistent Filtration Performance



Specialty Membrane Product available for a wide variety of conversion options

CUNO Nylon membranes are ready to use in applications from HPLC sample and high purity solvent preparation to general solvent and vacuum filtration. Membranes are available with a variety of options to tailor fit the membrane to the application; ensuring the best cost and performance benefits. Applications include:

- Lab Filtration Devices
- Disk Filters
- Medical and Dialysis Filters
- Roll-Stock
- Cartridge Filters
- Diagnostics

CUNO provides standard and customized micro-porous membranes of Nylon 6,6 to users and manufacturers of laboratory and medical filtration products. CUNO provides a full range of converting services for rolls, widths, sheets, custom cuts, labeling and packaging.

Charged & Non-Charged Membranes

Non-charged membranes are offered for general filtration applications. Positively charged membranes are offered for superior removal of particles, pyrogens, bacteria and colloids. Positively charged membranes combine traditional mechanical sieving with electro-kinetic capture to remove negatively charged contaminants that are smaller than the rated pore size of the membrane. This feature offers manufacturers a higher flow rate capability without sacrificing filtration efficiency.

Reinforced & Non-Reinforced Membranes

Reinforced CUNO membranes offer increased mechanical strength for ease of handling when fabricating healthcare devices. These membranes are offered in pore size ratings from 0.04 μm to 1.5 μm , including grades for bacteria retention and sterile filtration. Non-reinforced membranes are supplied in pore size ratings of 0.2 μm and 0.45 μm and are offered for bacteria retention and low HPLC extractables in sample preparation.

Multi-zone Membrane Technology

In addition to standard single zone membranes, CUNO offers multi-zone membranes manufactured with CUNO's proprietary asymmetric casting technology. The process produces dual layer membrane that enables graded density filtration in a single membrane layer. Multi-zone membrane consists of a more open, upstream zone and a tighter downstream qualifying zone. This multi-zone membrane construction capability (Figure 2) results in a membrane that provides exceptionally high contaminant capacity for long on-stream life and maximum economy.

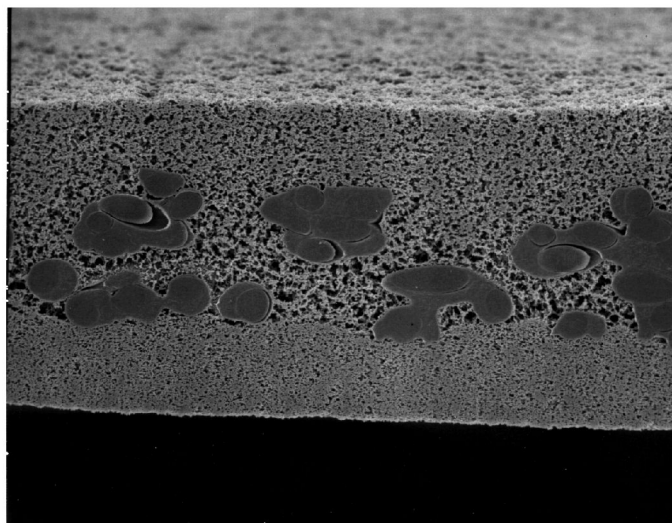


Figure 1. Cross section of CUNO multi-zone membrane

Sterilization & Sealing Methods

All CUNO nylon membranes can be sterilized by autoclave, in-situ steam or ETO. Multiple sealing methods, including ultrasonic and heat sealing can be used to incorporate CUNO nylon membranes into devices.

CUNO provides standard and customized membran, widths, sheets, custom cuts, labeling and packaging. The table below summarizes our supply capabilities side of those listed are available. Please contact CUNO Healthcare Division (1-800-243-6894) for additional information.

TABLE I. CUNO SPECIALTY MEMBRANES SELECTION GUIDE

Charge-Modification	Reinforcement	Pore Size microns	Bubble Point psi	Typical Flow ml/min/cm ² /psi	Nominal Thickness mils
Charge-modified	Non-Reinforced	0.20	45	0.8	6.8
		0.45	35	0.9	6.8
	Reinforced, single-zone	0.04	30*	*	6.0
		0.10	22*	*	6.0
		0.20	54	0.5	9.0
		0.45	33	None	6.5
		0.65	16	2.9	6.2
1.50	16 FAOP**	None	6.6		
Non-charge modified	Non-reinforced	0.20	42	0.8	6.8
		0.45	30	0.9	6.8
	Reinforced, single zone	0.04	31*	*	6.5
		0.10	22*	*	6.5
		0.20	15*	*	6.5
		0.45	11*	2.3	7.0
		0.65	9*	3.7	7.0
		0.10	65	0.25	8.0
		0.20	52	1.0	6.0
		0.45	33	None	6.7
		0.65	16	2.9	7.6
		1.50	None	None	6.6
	Reinforced, multi-zone (asymmetric)	0.45/0.1	22.5*	None	7.5
		0.65/0.2	15*	1.5	7.5
		0.8/0.45	10*	2.7	7.5
		1.2/0.65	8*	4.6	7.5
		2.5/0.8	5.5*	4.6	7.5
	Reinforced, multi-zone (symmetric)	0.10	43*	*	9.8
		0.20	20*	*	11.9

* Measured by forward flow bubble point in 60/40 IPA. Bubble point and flow values measured in 100% H₂O

**Foam-all-over point



a 3M company

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