

Spiral Membranes

Cross-flow filtration for liquid separations

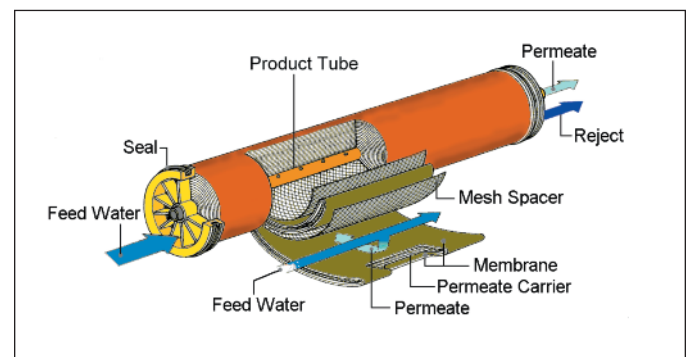


Membrane Specialists supplies an extensive range of spiral-wound membranes for reverse osmosis (RO), nanofiltration (NF), and ultrafiltration (UF) liquid separation applications, from pilot-scale testing to full-scale production.

The basic spiral element consists of one or more membrane envelopes wound around a perforated central tube. The envelope is made of membrane sheets glued on three sides and enclosing permeate carrier material. The permeate passes through the membrane into the envelope and spirals inward to the center tube. Membrane layers are separated by feed channel spacer material. Feed flows across the surface of the membrane in the channels formed by the feed spacers, providing a turbulent sweeping effect and reducing boundary layers at the surface. This configuration had proven to be exceptionally versatile.

Spiral-wound membrane elements can be made of many different materials and choosing the right membrane and element construction is the key to a successful feed-stream separation. Membrane Specialists offers a wide range of products to serve different feed streams and treatment requirements. These include membrane filters for feed streams characterized by high viscosity, high TDS, high and low pH, high temperature and high pressure. Specially designed elements are available for both industrial and sanitary environments.

Membrane Specialists works closely with its customers developing new applications, as well as providing expert design, engineering, plant fabrication and installation services.



MEMBRANE TYPES

Membrane			Apparent retention character*	Recommended maximum pressure (psi/bar)	Maximum temp. (°F)/(°C)	Max.pH range (operation)
Character	Material	Title				
RO	Thin Film	SPR99	99.5% NaCl	370/25.5****	120/49	4.0 - 11.0
		SPR98	99% NaC	500/34.5****	120/49**	2.0 - 11.0
NF	Thin Film	SPN30	150-300D	500/34.5	120/49**	2.0 - 11.0
		SPN40	150-300D	370/25.5	120/49**	
UF	Thin Film	SP002	2500D	300/20.7	120/49	2.0 - 11.0
		SP003	3500D	220/15.2	120/49	
		SP008	8000D	150/10.3	120/49	
		SP010	10,000D	150/10.3	120/49	
	Polyethersulphone	SP011	10,000D	150/10.3	120/49***	

* Retention character is highly dependant upon the nature of the fluid being processed. This information should therefore be used as a guide only

** Up to 160°F/71.1°C available

*** Up to 200°F/93.3°C available

**** High pressure construction available (max. operating pressure 155 psi/10.7 bar).

Element details

Dimensions – All elements available in the following sizes:

Element	2540	4040	8040
Diameter (in/cm)	2.5/6.4	4/10.2	8/20.3
Length (in/cm)	40/101.6	40/101.6	40/101.6

Construction

Element	2540	4040	8040
Feed spacer (mil)	30, 47	30, 47, 80	30, 47, 80
Outer wrap	Fiberglass	Fiberglass	Fiberglass

All elements come with 30 mil feed spacers standard. Wide feed spacers are available, depending on feed fluid. Fiberglass outer wrapping is standard (sanitary wrap is also available).

