

# SEAWATER DESALINATION ENERGIZED BY



## LEWABRANE® RO SEAWATER

The **Lewabrane® ROS** type is the new Reverse Osmosis (RO) spiral wound element produced by LANXESS for seawater desalination. The chemistry of this membrane is a higher cross-linking of the polyamide layer. This higher degree of polymerization improves the mechanical and chemical stability of the thin barrier layer offering greater durability and a more stable rejection of mixed ion salt solutions and organic periods.

The **Lewabrane® RO S** type product family was designed to meet and exceed the nominal performance standards for desalination and is offered in both high rejection (HR) and high flow (HF) product types. Three different sizes of the series are available RO S400, RO S440 and RO S085. The RO elements RO S400 and RO S440 have a stand-

ard length of 40 inches (1,016 mm) and a diameter of 8 inches (201 mm) suitable for use within standard RO membrane equipment. The product family also includes a 4-inch (101 mm) RO element suitable for smaller applications. All 8-inch diameter elements meet today's industry standards for RO membrane surface area at 400 and 440 square feet per 8-inch by 40-inch element.

Key attributes of the new **Lewabrane® RO S HR** type:

- Low salt passage
- More stable salt rejection during operating lifetime
- High rejection of critical ions

Key attributes of the new **Lewabrane® RO S HF** type:

- High flow productivity
- Low salt passage at high fluxes
- Low energy demand

Seawater (S) High rejection (HR)/High flow (HF)	Permeate Flow	Salt Rejection	Membrane Area	Feed Spacer Thickness	Dimensions
S085 HR 4040	5.2 m <sup>3</sup> /day	99.8%	7,9 m <sup>2</sup>	0.8 mm	1,016/100/19 mm (OD)
	1,380gpd	99.8%	85 ft <sup>2</sup>	31 mil	40/3.9/0.75 inch
S400 HR	24.6 m <sup>3</sup> /day	99.8%	37.2 m <sup>2</sup>	0.8 mm	1,016/201/29 mm
	6,500 gpd	99.8%	400 ft <sup>2</sup>	31 mil	40/7.9/1.125 inch
S440 HR	27.3 m <sup>3</sup> /day	99.8%	40.9 m <sup>2</sup>	0.7 mm	1,016/201/29 mm
	7,200 gpd	99.8%	440 ft <sup>2</sup>	28 mil	40/7.9/1.125 inch
S085HF 4040	7.2 m <sup>3</sup> /day	99.8%	7.9 m <sup>2</sup>	0.8 mm	1,016/100/19 mm (OD)
	1,910 gpd	99.8%	85 ft <sup>2</sup>	31 mil	40/3.9/0.75 inch
S400 HF	34.1 m <sup>3</sup> /day	99.8%	37.2 m <sup>2</sup>	0.8 mm	1,016/201/29 mm
	9,000 gpd	99.8%	400 ft <sup>2</sup>	31 mil	40/7.9/1.125 inch
S440 HF	37.5 m <sup>3</sup> /day	99.8%	40.9 m <sup>2</sup>	0.7 mm	1,016/201/29 mm
	9,900 gpd	99.8%	440 ft <sup>2</sup>	28 mil	40/7.9/1.125 inch

**Test conditions:** applied pressure 55.2 bar (800 psi), NaCl concentration 32,000 mg/l, 25 °C (77 °F), pH 8 and recovery rate 8%.

## Application: Seawater desalination

The Lewabrane® RO S HR type was designed for single pass seawater desalination plants where a high rejection is necessary while the Lewabrane® RO S HF type was developed for double pass desalination plants where a low energy consumption is demanded. Of course, both types can be installed in one pressure vessel as a hybrid system to improve rejection and energy demand.



[http://lewabrane.com/uploads/tx\\_ixsmatrix/Water\\_Info\\_Room\\_01.pdf](http://lewabrane.com/uploads/tx_ixsmatrix/Water_Info_Room_01.pdf)

## Service and Support

LANXESS offers with the LewaPlus™ design software a comprehensive software design tool for RO membrane and ion exchange resin (IX) systems which is available in several languages. It combines the Lewabrane® RO membrane design with the existing Lewatit® ion exchange resin design, allowing the designer to move seamlessly from RO design to ion exchange design all within the same design software. For seawater application it offers different energy recovery devices, the design of a split partial system and the calculation of a hybrid installation in the pressure vessel. LewaPlus™ can design more than 5,000 possible configuration and offers a post-treatment and a cost-energy calculation tool.

## Contact

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**We are happy to support your business. Please contact us for additional information: visit [www.lewabrane.com](http://www.lewabrane.com)**

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