

LANXESS expands portfolio for reverse osmosis:

Saving energy with new LE membrane elements

LewaPlus design software now supports cost calculation, too

Leverkusen – Specialty chemicals company LANXESS has expanded its range of membrane separation elements for reverse osmosis (RO)-based water treatment to include new low energy (LE) elements. These new products are to be presented for the first time at Aquatech China, which is being held in Shanghai from June 5 to 7, 2013. Around 1,000 exhibitors from over 30 countries will be exhibiting their products and services at this leading Chinese trade fair dedicated to the megatrend of water.

“The operating pressures of the LE membrane elements are around 20 to 40 percent below those of the standard pressure elements in our product portfolio. The pumps in RO plants that use these elements also exhibit corresponding reductions in energy consumption in relation to the volumes of purified water produced and the rate of flow,” explains Alan Sharpe, head of the RO Membrane Project in the Liquid Purification Technologies business unit of LANXESS. LE membranes are particularly beneficial in any applications that demand high flow rates and thus high levels of productivity and where slight compromises in terms of water quality are acceptable.

The main area of application for RO elements equipped with LE membranes is the desalination of brackish water. These elements can be used to treat both surface water and groundwater in industrial and municipal sectors, including the treatment of wastewater. “LE membranes are in great demand on the global markets. In some regions, they have a market share of almost 70 percent. In launching the LE membranes, we are expanding our already comprehensive

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product portfolio for the desalination of brackish water. We anticipate further, sustainable sales growth in this area,” says Sharpe.

Suitable LE types for many areas of application

LE membranes for reverse osmosis are spiral wound and made from a polyamide composite membrane sheet. The dimensions of the LE modules match those of standard elements, which means they can be easily installed in the standard pressure vessels of RO plants. “Although the new elements have been modified and optimized in a number of ways, their separation mechanism is still based on tried-and-tested polyamide thin-film composite membranes,” explains Sharpe.

Three product types are currently available, each with an average salt rejection of 99.5 percent at reference conditions of 10.3 bar:

Type	Lewabrane RO		
	B090 LE 4040	B400 LE	B440 LE
Average flow rate (m ³ /day)	7.9	34.8	38.3
Diameter (inches)	4	8	8
Membrane surface area (m ²)	8.4	37.2	40.9

Details on these and other Lewabrane reverse osmosis membrane elements are available online at www.lewabrane.com.

New functions in LewaPlus planning software

User-friendly, integrated LewaPlus software supports the simulation and design of both reverse osmosis (RO) and ion exchange (IEX) processes for water desalination. This makes it possible to design complex water treatment solutions and draw direct comparisons

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between calculations for RO and IEX processes. To better meet customer requirements, a series of new features and enhancements specifically for calculating RO processes have been incorporated into the latest version of this software (1.4.0).

These include:

- Energy optimization of the process and comparison of different RO design configurations to improve energy efficiency;
- Cost calculation for capital investment and operational costs to estimate all the relevant factors influencing the total cost of product water.

Detailed information is available online at www.lewabrane.com. The LewaPlus design software can also be downloaded from this website free of charge.

The Liquid Purification Technologies business unit is part of LANXESS' Performance Chemicals segment, which recorded sales of EUR 2.2 billion in fiscal 2012.

LANXESS is a leading specialty chemicals company with sales of EUR 9.1 billion in 2012 and roughly 17,400 employees in 31 countries. The company is currently represented at 50 production sites worldwide. The core business of LANXESS is the development, manufacturing and marketing of plastics, rubber, intermediates and specialty chemicals. LANXESS is a member of the leading sustainability indices Dow Jones Sustainability Index (DJSI) World and FTSE4Good as well as the Carbon Disclosure Leadership Index (CDLI).

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Forward-Looking Statements.

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News Release

Information for editors:

All LANXESS news releases and their accompanying photos can be found at <http://press.lanxess.com>. Recent photos of the Board of Management and other LANXESS image material are available at <http://photos.lanxess.com>. The latest TV footage, audiofiles and podcasts can be found at <http://multimedia.lanxess.com>.

You can find further information concerning LANXESS chemistry in our WebMagazine at <http://webmagazine.lanxess.com>.

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