

## **Customized and effective water solutions from LANXESS in India**

When it comes to making contaminated water usable, the chemical industry can provide valuable assistance. As is widely known, water requires adequate treatment before it can be used for industrial applications such as a processing or a cooling medium. Water is often a key component for process chemicals and additives. But how does one treat water and turn it into a perfect medium for usage and processes?

The treatment of water is the best-known and biggest field of application for ion exchange resins. Ion exchange resins have proved themselves in a wide variety of applications connected with treatment and cleaning of water. For example, in the metalworking industry, they are used for the following purposes such as treatment of raw water for production, care and recycling of water-based process solutions, recycling of rinse water and, if required, the recovery of metals, and also treatment of wastewater prior to discharge into the environment with possibility of metal recovery.

Constantly mounting specifications regarding the quality of the treated water are making ever higher demands on the suppliers. To address this, more than one separation technology is often applied to achieve the demanded quality. For desalination and the production of high-purity water, LANXESS offers two premium separation technologies.

For purification of high tedious water, Lewabrane® is used. LANXESS' membrane separation elements are characterized by a high degree of polymerization and a low surface charge, which in itself reduces the accumulation of dissolved solids at the membrane surface. All Lewabrane® products from LANXESS comprise a polyamide composite membrane, wound in several layers to form a spiral wound element. In membrane separation,

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fouling describes the process by which dissolved solids (colloids) form deposits on the membrane surface, leading to a reduction in separation capacity.

These separation elements, are engineered specifically for industrial water treatment. The fields of application include the desalination of brackish and low-salinity water with a high potential for organic or biological fouling. The recently launched, Lewabrane® reverse osmosis (RO) types have a surface area of 37.2, 34.4, and 8.4 square meters (equivalent to 400, 370, and 90 square feet). Each of these new FR membrane types are recommended for waters with strong fouling potential. Also launched were Lewabrane® of the LE type – low energy type membrane.

Additionally, LANXESS' Lewatit®, one of the leading brands in the field of water treatment has the right ion exchange resins and the right processes to meet just about any set of requirements. For the generation of power and for chemical production processes, such as refineries, huge amounts of treated and cleaned water are needed to protect the technical components (e.g. turbines, steam boilers, piping) against corrosion.

The ion exchange resins offered by LANXESS, under the brand name Lewatit® tackles the cleaning process in a very different and much smarter way. Lewatit® is in the form of small beads less than a millimeter in diameter, made of a porous plastic, and the pores are functionalized with specially designed molecules. The chemists at LANXESS have given these molecules very special properties, which make them ideal partners for salt particles, for example. When ions flow past these molecules, they stick to them like flies to flypaper. In return, the ion exchangers release other ions so that the charge balance of the solution is preserved – hence the name 'ion exchanger'. These ions may be simple sodium, or they might be hydrogen ions, which in combination with hydroxide ions yield nothing other than water. Based on the relevant customer applications, the range of ion exchange resins, adsorbers

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and functional polymers is divided into the segments – water and process specialties (PSP) which include foodstuffs, catalysis, biotechnology and chemicals processing. LANXESS offers new and established products from the Lewatit® range for all these sectors. In combination with Lewabrane® reverse osmosis (RO) membrane elements, they meet the highest demands in the industry.

Furthermore, in order to treat microorganisms like bacteria, algae and fungi in cooling water systems or paper mills, oxidizing as well as non-oxidizing biocides are commonly used. Oxidizing biocides are very effective against most problematic organisms. They react readily with the general protoplasm of bacteria, and kill very quickly. However, the high reactivity and low persistence of most oxidizing biocides can leave certain microorganisms unharmed raising the need for other classes of biocides. Non-oxidizers are more persistent than oxidizers and can handle organisms that are not or poorly effected by oxidizers.

LANXESS, the market leader of non-oxidizing biocides in India offers active ingredients with several biocidal applications, Veriguard® and Preventol®. Whether for cooling water treatment, the treatment of pulp and paper or other water treatment applications, LANXESS has the capabilities to develop the right solution for every microbiological problem in water treatment applications. While some are commodities, there are some specialty variants with unique applications for water treatment.

Water softening is an effective purification process and plays an important part. Water softening prevents lime deposits and formation of certain salts in water. Lime if dissolved in water supplies, reduces the performance of many cleaning agents. Water softening is required in industrial cleansing processes, such as the rinsing of bottles in beverage production and also in water-dependent cleaning equipment in private households.

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With Baypure® and Bayhibit®, LANXESS offers water treatment agents for the environmentally friendly optimization of washing and cleaning agents. These agents, prevent the formation of non-soluble salt deposits in water circuits, avoid corrosion and improve performance in industrial processes.

Premium products and innovative technologies from LANXESS enable more sustainable and responsible use of water.

## About LANXESS

LANXESS is a leading specialty chemicals company with sales of EUR 9.1 billion in 2012 and roughly 17,500 employees in 31 countries. The company is currently represented at 52 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).

### Forward-Looking Statements

This news release may contain forward-looking statements based on current assumptions and forecasts made by LANXESS AG management. Various known and unknown risks, uncertainties and other factors could lead to material differences between the actual future results, financial situation, development or performance of the company and the estimates given here. The company assumes no liability whatsoever to update these forward-looking statements or to conform them to future events or developments.

### Information for editors:

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

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