

Plant expansion at LANXESS in Leverkusen:

More Lewatit for the food industry

Millions invested in the production of weak acid cation exchange resins and new food-compatible filling unit

Cologne – Specialty chemicals company LANXESS is expanding its business with water treatment solutions. On September 26, 2014, the company inaugurates a new production line at its largest site worldwide in Leverkusen for the production of the Lewatit premium brand of weak acid cation (WAC) exchange resins, as well as bringing a cutting-edge food-compatible filling and packing system into operation. Some EUR 10 million has been invested in the expansion, which began in April 2013. The additional volumes will be available to the global market with immediate effect.

Rainier van Roessel, a member of the LANXESS AG Board of Management, explains the significance of this investment: “Demand for special cation exchange resins alone is growing at a rate of three to five percent each year. This is why we are raising our profile in this sector and increasing production capacity for WAC resins in Leverkusen by around one third. This investment is a clear indication of our commitment not only to promoting responsible usage of the precious resource water, but also to this site and to the region as a whole.” The Lewatit brand of heterodisperse ion exchange resins has been produced in Leverkusen since the mid-1960s.

Highly automated production

The technical aspects of the new production line reflect many years of experience producing WAC resins. The discontinuous (i.e. batch) production process begins with the creation of polymer beads through emulsion polymerization. A mixture of the two polymer components, the monomer and the crosslinker, is placed in an inert solvent in a “beading tank” to form a finely distributed emulsion.

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Adhering precisely to the reaction parameters is essential for creating a high-quality product. “This is where our many years of experience are particularly important,” says technical plant manager Uwe Tegtmeier. “To maintain a high degree of reproducibility and consistency in quality at this stage, the procedures involved are largely automated.”

Sophisticated safety technology ensures that the highly exothermic (heat-generating) reaction takes place safely. If this technology fails, there is also a non-electric safety system in reserve that can stop a reaction fully automatically if it becomes too powerful. “In this respect we insist not merely on double redundancy, but on a triply redundant safety system, so that everything is always under full control,” says Tegtmeier. Once the monomer has been processed and the reaction comes to an end, the beads are filtered from the liquid reaction medium and assigned the relevant functional groups. Because of their negative charge, the functional groups are capable of binding positively charged ions (cations). In the case of weak acid cation exchange resins, they are organic acid residues known as carboxyl groups. This is how an ion exchange resin is produced from an almost entirely unreactive polymer.

Food-compatible filling system

To complement the site’s existing filling plant, the recent capacity expansion also included the construction of a new building for filling products destined for food applications. With this food-compatible packaging facility, LANXESS is setting very high standards for product purity and ensuring even better quality. “Demand for food application products is increasing – as are hygiene requirements within the industry. This highly efficient filling and packaging system, which to our knowledge is absolutely unique, equips us perfectly for filling the ever greater volumes that will be produced in the future following our capacity expansion,” says Jean-Marc Vesselle, Senior Vice President of the Liquid Purification Technologies business unit at LANXESS. “Even before being brought into operation, our new

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food-compatible filling unit has attracted major market interest,” adds Tegtmeier. The centerpiece is the “white zone” of the new plant, which was designed according to the “black and white” principle. This principle was originally developed and used in the mining industry and serves to keep clean (“white”) and contaminated (“black”) work areas separate.

The white zone is supplied with filtered air and is under positive pressure to prevent impurities in the surrounding environment from entering. The specially trained personnel who work there also wear protective clothing.

Inside this hall, which covers some 300 square meters, products are fed from several silos into big bags and drums on stainless steel pallets so that they can immediately be weighed, labeled and transported. A rail-bound transportation system is used instead of conventional forklifts. Packaging material can be delivered via three truck ramps. Before being transported to the adjoining storage and dispatch building, the containers are transferred fully automatically onto wooden pallets and sealed in weatherproof film. There is an additional buffer storage area next to the workroom.

Customized drinking water treatment

Weak acid cation exchange resins are predominantly used in cartridges for household water filters and in installed domestic water systems, which are becoming increasingly popular. They remove calcium and magnesium ions, which can cause mains water to become hard, and in some cases also ions that are harmful to human health such as lead and copper, releasing other safe ions in the water instead. This improves both the quality and taste of drinking water. Recently, using particular ions to enrich drinking water has also been gaining in importance. In some regions of Italy, for instance, special ion exchangers charged with calcium or magnesium ions have been used to treat water that is very low in minerals.

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LANXESS is one of the leading manufacturers of ion exchange resins worldwide. Premium products from the established Lewatit range are used to treat solutions in the food and beverage industry, chemical catalysis, the power plant industry and pharmaceutical biofermentation, for example. As well as ion exchange resins, LANXESS also produces the Lewabrane brand of membrane filter elements for reverse osmosis. This makes LANXESS one of only a very few companies that offer products and expertise relating to both ion exchange and reverse osmosis from a single source – two different yet complementary water treatment technologies.

Detailed information about the company's wide range of products is available online at www.lewatit.com.

The Liquid Purification Technologies business unit is part of LANXESS' Performance Chemicals segment, which generated sales of EUR 2.13 billion in the 2013 fiscal year.

LANXESS is a leading specialty chemicals company with sales of EUR 8.3 billion in 2013 and about 16,900 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 DJSI Europe) and FTSE4Good as well as CDP's Climate Disclosure Leadership Index (CDLI).

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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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News Release

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

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