

LANXESS at Battery Show 2022

- **Products and solutions for the entire value chain for lithium-ion batteries**
- **High-tech thermoplastics for a large high-voltage battery enclosure**
- **Upcoming start of electrolyte production in Leverkusen**
- **Ion-exchange resins also for battery recycling**

Cologne, June 2, 2022 – LANXESS will once again be appearing at the Battery Show in Stuttgart. This is Europe's biggest trade show featuring cutting-edge technologies and production processes for batteries in electric and hybrid vehicles and covers the entire battery supply chain. "We are presenting ourselves as a sustainable and reliable supplier of materials for European battery producers. Among our focuses are concepts for establishing circular material flows in the recycling of batteries in order to further reduce the ecological footprint of electric vehicles," says Dr. Martin Saewe, who heads LANXESS' initiative for electromobility and circular economy. The specialty chemicals company offers numerous key raw materials along the entire value chain for lithium-ion batteries. These include raw materials for cathode materials and electrolytes, ion exchange resins for extracting and for recycling ultra-pure metal compounds for cathode materials, flame retardants and coolants, as well as polyurethane (PU) potting solutions for protecting electronic battery components. High-performance thermoplastics for components of batteries, electric powertrains, and the charging infrastructure are another important product area.

Large high-voltage battery enclosure made from plastic

At the Battery Show, LANXESS will also be unveiling its range of thermally conductive polyamides for the thermal management of batteries and charging stations. Among the exhibits will be very stiff, orange-colored, halogen-free, flame-retardant high-voltage battery connectors, and a series-produced cover for an on-board battery charger made from high-strength, high-stiffness Durethan BKV50H3.0. An eyecatcher of the trade show will be a technology

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Page 1 of 6

carrier for a large high-voltage battery enclosure made from thermoplastics and designed for C-segment vehicles. This sophisticated component is made from the polyamide 6 compound Durethan B24CMH2.0 with localized reinforcing elements made from the Tepex composite, eliminating the need for metallic structural elements. It was developed in collaboration with the partner Kautex Textron, whereby LANXESS was responsible for the material and Kautex for the component and production process.

Direct battery cooling

During fast-charging of batteries, a significant amount of heat is generated. This heat can be effectively dissipated by means of direct cooling with immersion cooling fluids. LANXESS offers a range of cooling fluids such as phosphoric esters. These are electrically non-conductive and highly flame-resistant, which helps to enhance battery safety during fast-charging. With these products, LANXESS is currently expanding its expertise in the field of thermal fluid management.

Electrolyte formulations and raw materials for conductive salts made in Leverkusen

As of this year, the LANXESS subsidiary Saltigo in Leverkusen will be producing electrolyte formulations for lithium-ion batteries on behalf of Guangzhou Tinci Materials Technology Co. (Tinci), a globally leading manufacturer of lithium-ion battery materials. This will enable Tinci to supply European battery cell manufacturers with high purity formulations locally from Leverkusen.

In addition to electrolyte manufacturing, LANXESS is a leading producer of anhydrous hydrofluoric acids, phosphorus chemicals, and thionyl chloride. These are key raw materials for conductive salts such as lithium hexafluorophosphate (LiPF_6) and lithium bis(fluorosulfonyl)imide (LiFSI), which are main ingredients in electrolyte formulations. At its Leverkusen site, LANXESS operates an integrated plant network with which it can support the local production of conductive salt in Europe.

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Key precursors for lithium iron phosphate

In the area of cathode active materials, lithium iron phosphate (LFP) is of growing interest also in Europe as a sustainable and low cost alternative to cobalt- and nickel-containing active materials. Key precursors for LFP include lithium carbonate, phosphorus chemicals and technical iron oxides such as Bayoxide from LANXESS. “Thanks to our world-scale facility in Krefeld-Uerdingen, we are one of the world’s biggest producers of iron oxides. LANXESS is also among the leading producers of phosphorus compounds. So, as a broad-based raw material supplier, we can reliably and sustainably cover the growing European demand for LFP,” says Saewe.

Next phase of the lithium extraction project

LANXESS considers itself well positioned to serve the global rise in demand for lithium for battery chemicals. This is because the specialty chemicals company’s project in El Dorado, Arkansas, USA, focusing on the commercial and sustainable extraction of battery-grade lithium enters the next phase. In this project, LANXESS has partnered with Standard Lithium Ltd. and is employing an innovative process developed by the Canadian company to sustainably extract high-purity lithium carbonate from brine which is also used for manufacture of bromine. Following the 20-month operation of a pilot plant, the next step is to launch a front-end engineering design (FEED) study for the construction of a first industrial lithium carbonate plant in order to assess the economic viability and technical feasibility of producing the salt.

Battery grade metal salts from battery recycling processes

Ion exchange resins of the Lewatit brand have long been used in ore processing to extract battery-grade nickel and cobalt and purify lithium brine. “We can envisage yet another application for our resins – namely, the recycling of lithium-ion batteries. We are working on Lewatit resins, which can be used to extract and purify valuable materials such as lithium, nickel, cobalt, and manganese from the

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Page 3 of 6

black mass that arises during recycling so that they can be reused for new cathode materials,” says Saewe.

Battery Show Europe will take place on June 28-30, 2022, at the exhibition and trade center in Stuttgart. You can find LANXESS in Hall 10 (stand no. 10-E80).

More detailed information about LANXESS' product portfolio for electromobility can be found at <https://lanxess.com/en/Products-and-Solutions/Focus-Topics/LANXESS-e-Mobility>.

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Page 5 of 6

LANXESS offers a range of products for lithium-ion batteries including raw materials for cathode materials and electrolytes, ion exchange resins for extracting and recycling ultra-pure metal compounds for cathode materials, flame retardants and coolants, as well as polyurethane (PU) potting solutions for protecting electronic battery components.

Photo: LANXESS



LANXESS also offers high-performance thermoplastics for components of batteries, electric powertrains, and the charging infrastructure. The large plastic enclosure for high-voltage batteries in electric vehicles was developed in collaboration with Kautex Textron as a near-series technology demonstrator, whereby LANXESS was responsible for the material and Kautex for component and process development.

Photo: Kautex Textron

LANXESS is a leading specialty chemicals company with sales of EUR 7.6 billion in 2021. The company currently has about 14,900 employees in 33 countries. The core business of LANXESS is the development, manufacturing and marketing of chemical intermediates, additives, specialty chemicals and plastics. LANXESS is listed in the leading sustainability indices Dow Jones Sustainability Index (DJSI World and Europe) and FTSE4Good.

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Page 6 of 6