

Battery Show Europe: LANXESS to showcase comprehensive portfolio for battery production

- **LANXESS will be in Hall 10, booth 10-E70, at the exhibition and trade center in Stuttgart**
- **Innovative products and solutions along the entire value chain for lithium-ion batteries**
- **Precursors for the development of European supply chains for lithium iron phosphate (LFP)**
- **Key raw materials for electrolyte conducting salts**

Cologne, June 12, 2024 – From June 18 to 20, LANXESS will be at Battery Show Europe showcasing its wide range of products for the production of lithium-ion batteries and applications in the area of electromobility. These include numerous key raw materials and material solutions along the entire value chain. The event in Stuttgart is Europe's biggest specialist trade show for cutting-edge materials, technologies and production processes in the fast-growing electromobility segment.

Extensive product portfolio

The portfolio of the specialty chemicals company includes raw materials for cathode materials and electrolyte components, ion exchange resins for extracting ultra-pure metal compounds for cathode materials and battery recycling, coolants and colorants for high-voltage applications as well as casting compounds for protecting electronic battery components. Another key product area features flame retardants for high-performance plastics and non-flammable electrolytes that help to improve the safety of battery cells.

Shift of supply chains

According to a recent analysis conducted by the Transport & Environment (T&E) agency, which operates throughout Europe, a shift of the supply chains from China to Europe may help to reduce the CO₂ emissions released during the production of batteries by 37 percent

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(<https://www.transportenvironment.org/articles/european-made-batteries-could-be-60-less-carbon-intensive-than-chinese-analysis>).

If, on top of that, electricity from renewable sources were used, a reduction of up to 60 percent would be possible. Thus, if the European demand for battery cells and components were produced in Europe, an estimated 133 million metric tons of CO₂ could be saved by 2030.

LANXESS supports the development of regional supply chains for battery materials

LANXESS is a sustainable and reliable supplier of materials for European battery producers. “Thanks to our extensive portfolio of key raw materials and precursors as well as the existing assets in Europe, we can support the development of local value chains,” explains Dr. Harry Zumaqué, Head of New Business Development at LANXESS Corporate Development. “Our expertise in process development also allows us to open up new fields in the area of battery recycling and thus actively promote sustainability in cell manufacturing and chemical production.”

Customized iron oxides and iron phosphate for LFP cathode materials

Lithium iron phosphate (LFP) is becoming increasingly widespread as a cathode active material that offers a sustainable alternative to materials containing cobalt and nickel. At the moment, LFP batteries are being produced almost exclusively in China. Western OEMs are therefore in favor of establishing regional value chains with the aim of becoming more independent and securing supply to the markets with sustainable materials of local origin.

To reduce this dependency, LANXESS is now offering customized precursors for LFP synthesis. These include new iron oxide battery grades as well as iron phosphate, which LANXESS intends to start producing. With a production capacity of over 300,000 metric tons annually, the company is one of the world’s leading manufacturers of iron oxides and operates as a major producer sites in Germany and

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Brazil, for example. “The majority of iron oxide manufactured outside China comes from LANXESS production sites,” says Stefano Bartolucci, Head of the Specialties market segment in the Inorganic Pigments (IPG) business unit. LANXESS currently offers two field-tested iron oxide battery grades under the brand name Bayoxide. In terms of purity, surface properties, crystallinity and particle size, they are produced in a way that enables optimum electrochemical properties for the cathode materials. IPG also intends to establish itself as a supplier of iron phosphate, which is also used in LFP synthesis and for which there is currently only limited capacity.

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Flame retardants for plastic components

High-performance plastics used for applications in electric vehicles, for example in battery modules and battery housings, high-voltage connectors and components in the field of charging infrastructure, need particularly effective flame-retardant properties. To ensure this, LANXESS offers numerous phosphorus-based and bromine-based flame retardants for various polymers.

Orange plastics to indicate danger

The signal color orange is used for high-voltage components in electric cars to ensure the safety and protection of mechanics and first responders, whether during maintenance and assembly work or during rescue operations after an accident. The plastics dyed with BAYPLAST Orange TP LXS 51137 offer excellent color stability even at high temperatures.

Synthetic fluids for effective battery cooling

During the fast charging of vehicle batteries, considerable amounts of heat are generated, which must be effectively dissipated to prevent subsequent damage. To achieve this, the battery cells are cooled directly by immersion coolant. Here, LANXESS can leverage its expertise in thermal fluid management with highly suited products: Synthetic fluids such as phosphoric esters are electrically non-

conductive and highly flame resistant. These properties are essential to ensure safety at all times during fast charging.

Electrolyte formulations and raw materials for conducting salts

Leverkusen-based LANXESS subsidiary Saltigo produces electrolyte formulations for lithium-ion batteries in cooperation with Guangzhou Tinci Materials Technology Co. (Tinci). The Chinese company, which is one of the world's leading manufacturers of conducting salts and electrolytes, supplies European cell manufacturers with these ultra-pure formulations.

The production of conducting salts such as lithium hexafluorophosphate (LiPF₆) and lithium bis(fluorosulfonyl)imide (LiFSI) for electrolyte formulations requires essential key raw materials. These include anhydrous hydrofluoric acids, phosphorus chemicals, thionyl chloride and fluorosulfuric acid. Here, LANXESS is one of the leading manufacturers and can contribute to set up a local conductive salt production for sustainable cell manufacturing in Europe with its integrated plant network at its Leverkusen site.

Battery recycling with Lewatit resins

Lewatit ion exchange resins from LANXESS have long been used in ore processing to extract and refine battery-grade nickel and cobalt and purify all types of lithium concentrate. These resins open up another application in the field of battery production – namely, the recycling of lithium-ion batteries. “We produce selective Lewatit resins that can be used to purify battery-grade metals such as lithium, nickel, cobalt and manganese extracted from black mass. They can then be reused for cathode materials,” explains Dr. Dirk Steinhilber, Technical Marketing Manager in the Liquid Purification Technologies business unit at LANXESS.

Battery Show Europe will take place on June 18–20, 2024, at the exhibition and trade center in Stuttgart. You will find LANXESS in Hall 10 (booth 10-E70).

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

Image



The LANXESS portfolio for the production of lithium-ion batteries includes raw materials for cathode materials and electrolyte components, ion exchange resins for extracting ultra-pure metal compounds, as well as flame retardants and coolants.

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LANXESS is a leading specialty chemicals company with sales of EUR 6.7 billion in 2023. The company currently has about 12,600 employees in 32 countries. The core business of LANXESS is the development, manufacturing and marketing of chemical intermediates, additives and consumer protection products. LANXESS is listed in the leading sustainability indices of the Dow Jones Sustainability Index (DJSI World and Europe).

Forward-Looking Statements

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You can find further information concerning LANXESS chemistry at <https://lanxess.com/en/Media/Stories>.

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