

Rubber additives for sustainable tire production

- **LANXESS at the Tire Technology Expo 2024 in Hanover, booth 3022**
- **Focus on sustainability**
- **Rhenodiv release agents for clean and efficient processes**
- **Revolutionary solution for rubber compound engineering**

Cologne, March 12, 2024 – Specialty chemicals company LANXESS will be presenting its comprehensive range of additives and solutions for the tire industry at Tire Technology Expo 2024 in Hanover, Germany. From March 19 to 21, the company will demonstrate how tire manufacturers can reduce their ecological footprint during production as well as that of the end product.

This year, sustainable rubber chemistry from LANXESS will be showcased under the motto “Less is more”. Dr. Dietmar Hoff, Global Head of Auxiliaries at LANXESS’ Rhein Chemie business unit (RCH), says: “The concept emphasizes that the more LANXESS products are introduced into manufacturing processes, the less resources and cleaning are required.”

Antidegradant soon available in a sustainable variant

In order to meet the sustainability targets of the tire manufacturers – namely, to produce completely “green” tires by 2050 – LANXESS offers the first sustainable antidegradant for rubber compounds. Over 50 percent of the contents of the additive TMQ will be based on sustainable raw materials. In the case of TMQ, ISCC Plus certification (International Sustainability & Carbon Certification) demonstrates that the criteria for reliable balancing are met and correctly applied. The facility at the production plant in Brunsbuettel, where LANXESS produces the antidegradant, will be certified within the year 2024. This means that tire manufacturers can use the sustainable TMQ variant, which is fully equivalent to its conventional

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counterpart in terms of its properties, without the need for fresh approval.

Antidegradants are chemicals that protect the vulcanizates from harmful external influences. They counteract degradation processes caused by oxygen or heat that change the properties of the vulcanizates. Over time, processes such as depolymerization, fatigue, embrittlement, cracking, and even decomposition can occur, resulting in fundamental damage to the tire.

Rhenodiv release agents – clean and efficient

In rubber manufacturing, rubber sheets are dipped into “batch-off” liquids to prevent the sheets from sticking together when they are folded for storage. Rhenodiv BO-3300 Pearls is the state-of-the-art solution for a dust-free batch-off process which also minimizes the need for cleaning the production equipment. In tire manufacturing, release agents ensure a smooth molding process. The process essentially involves placing the unvulcanized tire in the press, vulcanization, and then removing it from the press. To ensure the adhesion of sealing layers, noise-reducing foam and air pressure sensors, silicone release agent residue must be completely removed from tire’s inner surfaces using a laser or chemicals. With silicone-free products, these steps are cleaner and less disruptive. For processors, water-based, silicone-free Rhenodiv release agents from LANXESS therefore contribute to greater cost efficiency and sustainability.

Introducing Rhenocure DR/S: a revolutionary solution for rubber compound engineering

Rhenocure DR/S offers a unique formulation of 50 percent polyethyleneimine absorbed on silica, serving as a versatile secondary accelerator and dispersion aid. Engineered without aromatic moieties, Rhenocure DR/S ensures the absence of toxic byproducts resulting from Rhenocure DR/S during vulcanization. Its

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easy dosing, rapid dispersion, and branched polymer structure significantly reduce blooming, streamlining the manufacturing process.

For tire compounds, Rhenocure DR/S provides exceptional benefits. It acts as a fast secondary accelerator, allowing precise control over crosslinking processes. In silica-filled treads, it enhances silica dispersion, activates silanization, and mitigates the Payne effect, leading to superior tire performance. Dr. Andreas Lang, Head of Marketing Bound Systems at RCH, says: “With Rhenocure DR/S, we are setting a new standard of excellence in rubber compound additives, empowering engineers with a reliable, innovative solution for optimized tire manufacturing.”

Comprehensive portfolio for tire production

The LANXESS Rhein Chemie business unit is one of the world’s largest providers of rubber additives and system solutions for the rubber-processing industry. Its range of products comprises an extensive selection of additives that are used in tire mixtures in particular. These include vulcanizing agents and rubber additives in pre-dispersed and other delivery forms, processing accelerators, anti-reversion agents, zinc oxide, antidegradants, and mastication agents. The range of release agents comprises granulated batch-off products, interior spray solutions for single and multiple mold release, and bladder coatings. Outside, finishing, and tire marking paints complete the portfolio.

More information about products and solutions for the rubber industry are available at rch.lanxess.com.

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Sustainable rubber chemicals from LANXESS enable tire manufacturers to reduce their environmental footprint – both during production and in the final product.

Photo: LANXESS

LANXESS is a leading specialty chemicals company with sales of EUR 8.1 billion in 2022. The company currently has about 13,000 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 index Dow Jones Sustainability Index (DJSI World and Europe).

Forward-Looking Statements

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Information for editors:

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

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