

LANXESS at 2019 Tire Technology Expo, Deutsche Messe,
Hanover, stand 4014

Smart solutions for the tire industry

- **Innovative solutions for smart tires**
- **RFID technology for bladders**
- **Nitrogen-free accelerators for nitrosamine-free cross-linking**
- **Reinforcement options for tires**
- **Antioxidants and antiozonants**

Cologne – Specialty chemicals company LANXESS will be at the Tire Technology Expo in Hanover from March 5 to 7, 2019, to showcase its extensive range of products and versatile solutions for manufacturing tires. These include environmentally friendly Rhenodiv release agents, Rhenomark tire marking paints, Rhenoshape tire vulcanization bladders, Rhenogran aramid-fiber masterbatches, additives, accelerators and antidegradants. The company will be represented at the event by its Rhein Chemie and Advanced Industrial Intermediates business units.

“With our wide range of rubber additives, we offer high-quality, clean and, above all, environmentally friendly solutions for meeting the ever more challenging requirements of the tire industry,” commented Dr. Dietmar Hoff, head of Tire Marketing for the Rhein Chemie business unit. “Our products make a major contribution to the complex processes involved in tire manufacturing, from the provision of high-performance additives for compounding to additives for tire testing.”

Innovative solutions for smart tires

In the production of “smart” tires and with low-noise and self-sealing tires, it is essential that the release agents applied or transferred to the blank be removed entirely after vulcanization. This ensures that the polymers, foams or sensors applied subsequently will adhere

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properly. Such sensors can transmit important data such as tire pressure, temperature or tread depth, and can also pass on relevant alerts to drivers or fleet operators. This improves safety considerably and helps to prevent damage to the tires.

In addition to products containing silicone, such as Rhenodiv BP-286 and Rhenodiv BP-2864, which are removed by means of laser technology after the tires have been vulcanized, LANXESS has developed completely silicone-free products such as Rhenodiv BP-166 and Rhenodiv BP-9500. A special type of release agent makes these even easier to wash off.

Permanently coated Rhenoshape bladders enable tire manufacturers to vulcanize tires with no additional release agents, eliminating the need to clean the vulcanized tires. Since the spraying process for tire blanks is no longer necessary, no contamination can occur – neither in critical tire areas nor at the workplace.

RFID technology now for bladders as well

Rhein Chemie is introducing RFID technology for bladders to improve traceability at its production sites. This involves fitting bladders with RFID tags containing information such as model name, production batch and date of manufacture. This helps to avert errors in allocating the bladders later in the process and makes them easier for customers to identify.

It is also possible to make the information stored on the RFID chip available to the tire manufacturer. If a bladder is replaced in the tire press, the relevant information for the new bladder can be read using an RFID reader and linked to the curing press. This prevents mistakes such as failure to reset the cycle counter. It also makes it possible to track which tire has been cured with which bladder – information that is still not always available at present.

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Nitrogen-free accelerators and reinforcement options for tires

Dithiophosphates – including Rhenogran TP-50 and Rhenogran SDT-50 – are nitrogen-free accelerators that can replace conventional sulfenamide, thiuram and carbamate accelerators. Their advantage is that they mainly form monosulfide and disulfide cross-links, which are more thermally stable and less susceptible to reversion. In addition, their excellent solubility enables them to be used in all common types of rubber. Rhein Chemie offers dithiophosphates not only as masterbatches under the Rhenogran brand, but also as liquid and dry liquid under the Rhenocure brand.

Rhein Chemie offers an outstanding solution for tires exposed to high mechanical and thermal loads in the form of the Rhenogran P91-40 series. This involves highly reinforced aramid-fiber masterbatches that can be incorporated evenly into the rubber compound.

Rhenogran P91-40 is suitable for use not only in typical tire polymers such as NR, IR, BR and SBR, but also for many other types of rubber such as EPDM, CR and NBR.

The Rhein Chemie business unit supplies the rubber industry with a broad portfolio of pre-dispersed polymer-bound additives, processing promoters, vulcanization and filler activators, light protection waxes, release agents, tire marking paints and high-performance curing bladders. Further information can be found at <http://rch.lanxess.com>.

Antioxidants and antiozonants from LANXESS for extended lifespans

Among the key products that LANXESS will present at the Tire Technology Expo will be antioxidants, as rubber, a truly versatile material, must be individually protected against aging based on its respective use. The Advanced Industrial Intermediates business unit also offers the rubber industry an extensive range of antioxidants and antiozonants that can be metered and processed easily, safely and

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with very little dust. These can be combined with one another to further improve the distinct effective range of each particular additive.

Every antioxidant and antiozonant features a typical effective range in terms of the various types of aging. Depending on chemical structure, they counteract one or more of the degradation processes. With its Vulkanox, Vulkacit, Vulkazon and Renacit brands, LANXESS is one of the few manufacturers to offer the right additives for all stages of rubber production from a single source.

Preventing material deterioration

Aging processes, most of which are triggered by the effects of oxygen, ozone and heat, alter the properties of vulcanized rubber and can result in its partial or complete deterioration over time. The Vulkanox antioxidants and Vulkazon antiozonants from LANXESS extend the lifespans of elastomers by significant margins. This helps tires to maintain their characteristics and remain in service for longer.

In addition to antidegradants, the company offers vulcanization accelerators from the Vulkacit series. The sulfenamides and thiazoles are among the most significant accelerators in the rubber industry by far. They affect both the speed of the cross-linking reaction and the physical properties of the vulcanized products.

You can find more detailed information on the product range at <http://axx.lanxess.com>.

LANXESS is a leading specialty chemicals company with sales of EUR 9.7 billion in 2017. The company currently has about 15,500 employees in 33 countries and is represented at 59 production sites worldwide. 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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All LANXESS news releases and their accompanying photos can be found at <http://press.lanxess.com>. Recent photos of the Board of Management and other LANXESS image material are available at <http://photos.lanxess.com>. TV footage can be found at <http://globe360.net/broadcast.lanxess/>.

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

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At the Tire Technology Expo in Hanover LANXESS will present its extensive product range and versatile solutions for tire manufacturing.

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