

ARLANXEO with new proprietary process to improve fuel economy of tires

- **ARLANXEO introduces new development in Functionalized Solution Rubbers**
- **Specific performance benefits for tire manufacturers and users**
- **Stand number at K 2016 - 6C78**

June 28, 2016

Dusseldorf - At K 2016 in Dusseldorf, ARLANXEO will be introducing a newly developed technology for the production of functionalized solution rubbers. The application of this new technology to both styrene butadiene rubber (S-SBR) and functionalized butadiene rubber - in particular neodymium catalyzed butadiene rubber (Nd-BR) – increases the interaction with fillers, helping to improve the dynamic properties of tire tread compounds.

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As the filler becomes more easily dispersed into the compound, a more elastic network is built up. This reduces the rolling resistance and thus improves the fuel economy of the tire. In some cases traction properties can also be enhanced.

- **S-SBR**

The new functionalized solution rubber technology represents an upgrade for the S-SBR family – and new grades will be added to the ARLANXEO Buna FX product group, a brand new family of high performance rubbers. Different grades – namely high vinyl and high styrene rubbers – are available for customer approvals.

- **Nd-BR**

With regard to the Nd-BR types, several ways to modify and functionalize these grades have been studied and investigated in the ARLANXEO R&D facilities. As a first result the easy-to-process Buna Nd EZ grades have been commercialized and are already acknowledged in the rubber industry as being able to provide a good balance between the dynamic properties and the processability of the respective Nd-BR compounds.



One of the next major steps in the Nd-BR development will be to introduce a new functionalization technology on an industrial scale. According to David Hardy, Technical Service and Development Manager at ARLANXEO, functionalizing Ziegler/Natta catalyst polymerized rubbers such as Nd-BR is much more complicated due to the side reactions that can occur, one of the reasons there are fewer of these products available in the market compared to S-SBR: “However, we have found a technique to control this in a reliable way.”

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Automotive OEMs have to meet stringent requirements for fuel economy and grip. These requirements can only be met by using materials designed to improve the dynamic properties of the tire. Functionalized rubbers are a very suited and proven way to meet these requirements in combination with fillers and silanes. Therefore, tire makers are constantly looking for new types of functional polymers to help create compounds that best fit their application developments.

David Hardy: “Since the introduction of tire labelling in 2012, tire manufacturers are looking to produce tires with improved rankings. This can only be achieved by using high performance and functionalized rubbers, particularly in their tread compounds. Our goal is to apply our extensive R&D capabilities to develop functionalized S-SBRs and Nd-BRs produced in our proprietary polymerization processes to meet customers’ needs and to outperform rubber grades currently available.”

The new functionalized solution rubbers offer immediate benefits to the tire industry. However, in the longer term they can be adopted for use in other applications where excellent dynamic properties are required, for example in conveyor belting, anti-vibration and sport shoe soles applications.

This newly developed technology for the production of functionalized solution rubbers is part of the business unit Tire & Specialty Rubbers.

Tire & Specialty Rubbers

TSR (Tire & Specialty Rubbers), a business unit of the ARLANXEO group, offers a broad portfolio of versatile rubbers primarily for applications in tire production. They are used in, for example, the inner liners (the airtight layers) of tires as well as for the tread, side walls and other tire components. Other applications include chewing gum, sports and golf balls, hoses and conveyor belts.



About ARLANXEO

ARLANXEO is a world-leading synthetic rubber company with sales of around EUR 2.8 billion in 2015, about 3,800 employees and a presence at 20 production sites in nine countries. The company's core business is the development, manufacturing and marketing of high-performance rubber for use in, for example, the automotive and tire industries, the construction industry, and the oil and gas industries. ARLANXEO was established in April 2016 as a joint venture of LANXESS and Saudi Aramco.



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(Photo ARLANXEO, ARPR004)

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Press Release

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