Versalis: new rubber grades for tyre – Tyre Technology EXPO 2016, Hanover (D)

Innovation to broaden and revitalize the rubber portfolio: Versalis presents the new path on the occasion of Tyre Technology EXPO 2016 in Hanover.

The strategy of innovation has developed along three main subjects:

1. Latest generations of sSBR/Nd-BR for ‘green’ tyre
2. New rubber bioplasticizers : Matrilox™ P
3. New BIO oil extended rubbers

1. Latest generation of sSBR/Nd-BR for green tyre
   1.1 sSBR

Versalis is one of the very few sSBR manufacturers, with proprietary know-how, to produce both batch and continuous SSBR, hence offering to the market a wide products and performances portfolio.

Alongside the widely-established dry and oil grades portfolio, the commercial offer is expanding to solution SBR functionalized grades for both carbon blacks and silica, based on batch technology, with an enhanced balance of grip, low rolling and abrasion resistance, able to compete with state of the art grades in the market. Three main categories of new sSBR are on stream: high vinyl functionalized types for carbon black, high and medium vinyl grades functionalized for silica, low vinyl/low styrene grades functionalized for both silica and carbon grades, addressing most of tyre tread requirements for both car and truck applications. All of them are already available for sampling and some have already been available at industrial scale, produced in the new expanded sSBR facility at Versalis plant in Grangemouth (UK) (capacity + 30 kt)

Among them:

Europrene SOL®R X 72615 functionalized for PC carbon black based tread, already available at industrial stage

Europrene SOL® R X 72616 functionalized for silica based PC treads, production planned

Europrene SOL®R X 74618 functionalized for HP/UHP silica based PC tread, already available at industrial stage

Europrene SOL R® LVLS functionalized for carbon black for winter treads (Tg -70°C), production planned

All these grades are covering a wide range of Sty % / Tg, which are based on tailored polymer macrostructures, specifically designed to enhance interaction with fillers, thus improving final tread properties.
1.2 Europrene Neocis®: Neodimium based catalized polybutadienes.

Latest generation of Europrene Neocis® offer includes new BR grades, both in dry and oil extended versions, providing an improved balance of easy processing and elastic/dynamic properties to match energy saving and enhanced performances needed by the newest generations of tyres.

Europrene Neocis® BR 450 dry grade, Europrene Neocis® BRX 650 oil grade and Europrene Neocis® BRX 35 0E use a new kind of the Neodimium catalyst, refreshing and improving the technology proprietary know how, which Versalis owns since mid of ‘80ties.

Using Neodimium catalyst means that the polymerization is “green”, i.e. in aliphatic less impacting solvent, having an environmental friendly process, with lower energy consumptions and reduced emissions. This is the sustainable way approaching the tyre industry.

2. Matrilox™ P, new bio-based plasticizers

The focus on innovation has been leading to additives for the rubber industry, developing a new product family of plasticizers from renewable source: Matrilox™ P, produced by Matrica, a 50:50 joint venture between Versalis and Novamont.

These include plasticizers for specialty elastomers and PVC as well as an innovative type of bio-extender oils for general purpose elastomers and compounding.

Matrilox™ PD bio-plasticizers offer a high-performance, non-toxic, eco-sustainable alternative to traditional plasticizers (like phthalates or adipates). These plasticizers, which have high molecular weight and low release levels, are able to achieve excellent plasticization and exceptional thermal stability in NBR, CR, and other polar elastomers based compounds.

Matrilox™ PF 801 D has been specifically designed for the tyre industry with the aim of partially or totally replacing oil of fossil origin. It can be used either for the production of oil-extended SBR and BR, or, when properly formulated, as free oil in the production of tyre compounds. The peculiar nature of Matrilox™ bio-sourced oil represents an additional tool to the tyre industry for developing sustainable formulations with a unique property balance. The proposed novel plasticizers also provide opportunities to further expand the idea of green tyres.

Available for sales:

- Europrene 1739 BIO20 (oil extended TDAE/Matrilox 80/20)
- Europrene 1739 BIO50 (oil extended TDAE/Matrilox 50/50)
- Europrene 1789 BIO50 (oil extended TDAE/Matrilox 50/50)
- Matrilox™ PF 801 D to be used as free oil in compounding

A constant upgrading of product performances and creating value in a sustainable way is Versalis’ distinctive way to meet the ever-growing challenging needs within the rubber market