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Abstract

Novel Solutions For More Sustainable Elastomers and Thermoplastic Materials

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Replacing fossil-based materials with innovative, renewable, and sustainable solutions has been a primary objective of various industries, for example automotive building and construction, or packaging.
Especially in rubber-processing, where often highly CO_2-intensive raw materials are used, options for producing products with a lower environmental footprint have been limited. UPM Biochemicals is in the process of developing a portfolio of revolutionary, renewable solutions at its Leuna biorefinery. We present a range of application examples both, based durable rubber-compounds with a long service-life, as well as recyclable thermoplastic materials. Material properties match those of fossil-based reference-materials, while showing significantly reduced carbon footprint and weight. We highlight opportunities and challenges for material-developers. Various end-of life scenarios are discussed, including the specific benefits our renewable solutions can provide.