

LANXESS adds new sustainable product variants to Tepex composites range

- **Composite with polyamide 6 matrix based on “green” cyclohexane**
- **Composites made from recycled material with a forged carbon look**
- **New composite matrices based on biological and recycled materials**

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Cologne, June 21, 2022 – LANXESS is placing an emphasis on sustainability in its business activities, driving the circular economy forward. New Tepex thermoplastic composites that are currently being developed starting from recycled or bio-based raw materials are the latest example of this. “With these construction materials, we want to help our customers to make more sustainable products that have a smaller carbon footprint, conserve resources, and protect the climate,” explains Dr. Dirk Bonefeld, Head of Global Product Management and Marketing for Tepex at LANXESS. Recently, the specialty chemicals company has launched a fully bio-based composite material based on flax and polylactic acid on the market.

Tailor-made for structural lightweight design

Development is about to be completed, for example, on a matrix plastic based on polyamide 6 for Tepex dynalite, that is produced starting from “green” cyclohexane and therefore consists of well over 80 percent sustainable raw materials. As a result, the plastic meets the requirements that LANXESS has set for its new “Scopeblue” range. It consists of products that contain a significant proportion of circular (recycled or bio-based) raw materials or have a carbon footprint that is considerably smaller than that of conventional products. When the matrix plastic is reinforced with continuous-fiber fabrics, the resulting semi-finished products exhibit the same outstanding properties as comparable, equivalent products that are purely fossil-based. The semi-finished products with a green matrix are therefore suitable for applications in structural lightweight design

that are typical for Tepex dynalite – such as front-end carriers, seat shells, or battery consoles.

High-class decor and strong mechanical properties

Another new product line comprises variants of Tepex with a proportion of recycled material of up to 80 percent that yield surfaces with a so-called forged carbon look. The corresponding components feature a grain that is reminiscent of marble. The high proportion of recycled material is based on carbon fibers from post-consumer and post-industrial waste. The fibers are used as non-woven material or as chopped fiber mats. A variety of thermoplastics are suitable as a matrix material, such as polyamide 6 and 66, polypropylene or polycarbonate, whereby types of recycled material made up of these plastics can also be used.

The fibers in the composite semi-finished product have no preferred orientation, meaning that the mechanical properties of the resulting components are isotropic (the same in all directions). The mechanical performance of the new carbon composites approximates the high level of the continuous-glass-fiber reinforced composites of the Tepex range. “We see good opportunities for these products in applications that at once require high-class decor and high-grade mechanical properties – such as in car interiors and exteriors or in housings for consumer electronics,” says Bonefeld.

Bio-based alternatives to polyamide 12

Another development focus are new matrix solutions for Tepex based on recycled thermoplastic polyurethane (TPU) or polyethylene terephthalate (PET) as well as on bio-based polyamide 10.10. The recycled TPU products are primarily intended for sports equipment. One of their strengths is their good composite adhesion with many other injection-molded materials when processed using the insert molding or hybrid molding methods. The semi-finished products with a PET recycle matrix are a cost-effective alternative to virgin polycarbonate and polyamide, for example. The PET comes from used beverage bottles and is also available in large quantities thanks

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to the closed recycling chain for these bottles. The bio-based polyamide 10.10 is derived from castor oil. “The composite materials made with it are a sustainable alternative to polyamide 12 composites, because they have similar mechanical characteristics and a comparable density,” says Bonefeld.

You can find further information about the Tepex product line at <https://lanxess.com/en/Products-and-Solutions/Brands/Tepex>.

All news releases from LANXESS regarding K 2022 are available at <https://lanxess.com/K2022/Press>.

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Image



LANXESS is currently developing new Tepex thermoplastic composites that are being made starting from recycled or bio-based raw materials.

Photo: LANXESS

LANXESS is a leading specialty chemicals company with sales of EUR 7.6 billion in 2021. The company currently has about 14,900 employees in 33 countries. 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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