

New PBT blends for exterior truck cab components

Leverkusen – Polybutylene terephthalate (PBT) blends can be used in many different ways in the production of paneling/moldings and add-on body parts for truck cabs. Examples include fenders, wind deflectors, A-pillars, access steps and radiator grilles. One existing series application is the bumper of the *Eurocargo* truck from IVECO, which is made from the glass fiber-reinforced PBT+PET blend Pocan TS3220. The success of this material has now resulted in LANXESS adding Pocan A3131, C3230 XF and T3150 XF to its portfolio of PBT blends for exterior truck components. “The three materials have each been optimized with specific strengths in mind, such as good coatability, minimal distortion and excellent stiffness. They also offer the usual advantages of PBT blends,” explains Jürgen Horstmann, Key Account Manager for the truck industry in the Semi-Crystalline Products business unit.

Coating flexibility

Pocan A3131 is a PBT+ASA blend reinforced with 30 percent glass fibers. “This material has been optimized to minimize distortion, produces smooth surfaces that are easy to coat and boasts excellent flowability, which also makes it ideal for thin-walled components with finely structured geometries,” states Dr. Ulrich Plutowski, Product Developer for Pocan. One special feature of the material is its high heat resistance (Vicat 175 °C, ISO 306), which creates a larger process window for coating such components. Potential applications include large, low-distortion components such as wind deflectors and door extensions.

Isotropic shrinkage

The key strength of Pocan C3230 XF is its minimal distortion. The PBT+PC blend filled with 30 percent glass fibers demonstrates virtually isotropic shrinkage behavior in the component. The material’s flowability and toughness have also been improved. This is

LANXESS AG

Contact: Udo Erbstößer
Corporate Communications
51369 Leverkusen
Germany

Phone: +49 214 30-54529
Fax: +49 214 30-44865
udo.erbstoesser@lanxess.com

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unusual because these two properties normally counteract each other. The material has 40 percent higher flowability and is 30 percent tougher than the standard PBT+PC blend Pocan KU 1-7635. It also yields excellent surfaces and is ideal for components that need to have very accurate dimensions – such as lamp housings and large panels/trim.

Extremely stiff

Pocan T3150 XF is the material of choice for functional components and for components intended for structural reinforcement that must both demonstrate excellent stiffness and strength. This extremely tough, highly reinforced PBT+PET blend with 55 percent glass fibers has a very high elasticity modulus of 18,500 MPa (at room temperature) that is not affected by the level of humidity. It has a Charpy impact strength (ISO 179-1eU) of 55 kJ/m² at 23 °C. “This low-distortion material with a high elasticity modulus could be used instead of die-cast aluminum in many applications – such as handles, mirror arms and steps. The components can also be realized as plastic-metal composites,” says Plutowski. A further unusual feature is the blend’s good weather resistance, despite its high glass-fiber content.

Service along the entire component development chain

LANXESS helps manufacturers of exterior truck components made from PBT blends all the way along the development chain. In addition to mold flow calculations and CAE simulations, it also performs drop, vibration, dynamic/static stress tests and accelerated weathering tests. “Feasibility studies on substituting PBT for metals or SMCs blends are a further key aspect of our service,” notes Horstmann. Exterior applications for plastics are not the only focus of key account management for the truck industry, however. Applications for the vehicle interior and engine compartment – such as dashboard trim panels, oil pans, oil filter covers, cylinder head covers and coolant pipes – are also important.

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51369 Leverkusen
Germany

Phone: +49 214 30-54529
Fax: +49 214 30-44865
udo.erbstoesser@lanxess.com

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LANXESS AG

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Corporate Communications
51369 Leverkusen
Germany

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Fax: +49 214 30-44865
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