

Press release

Lightweight TPE with a high proportion of recycled content

Waldkraiburg, October 2024

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Reducing material density, strengthening the sustainability factor: KRAIBURG TPE introduces Lightweight TPE with a high proportion of recycled content

Industry demand for lightweight materials that have properties comparable to those of conventional materials in their specific application environments has been increasing by leaps and bounds in recent years. The replacement of conventional thermoplastic elastomers (TPEs) by Lightweight TPEs with recycled content plays a central role here. Lightweight TPEs provide wide-ranging options and unique materials parameters.

Waldkraiburg, 15 October 2024 – In the late 2010s, KRAIBURG TPE developed a technology that makes it possible to produce very lightweight application-specific thermoplastic elastomers. This technology was based on the use of 3M™ Glass Bubbles, which, with a markedly low overall material density, enabled the production of plastic-compatible components that are characterized by both outstanding resilience and softness. Launched in spring 2020, these newly developed Lightweight TPEs have proven to be successful. The main reason for this was that these compounds extensively met the current demand for effective lightweight solutions on the part of automotive manufacturers, as well as manufacturers in other sectors such as aviation and power tools, or in the sports and leisure industry.

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KRAIBURG TPE's expansion of the Lightweight series now marks another milestone in the development of materials for the lightweight construction sector. The newly developed THERMOLAST® R compounds have almost exactly the same material properties as the existing series and combine these properties with a recycled content of 10 to 60 percent. These advantages of lightweight TPEs are complemented by resource-conserving recycled raw materials from post-consumer sources. This leads to a reduced product carbon footprint (PCF) for the compounds and can therefore have a positive impact on the sustainability and climate targets of plastics-processing companies for many components.

The use of Lightweight TPEs with recycled content also reduces the weight of both materials and parts. This may lead to a reduction in energy consumption during the utilization phase of vehicles. In addition, components made of these materials can be recycled and reused in the same or similar applications. "Irrespective of any formal advantages that we achieve, it is measurably the case that the processing of Lightweight TPEs with recycled content saves more resources due to shorter cycle times," explains Marius Kantoch, Market Manager Consumer at KRAIBURG TPE. "This shows once again that, in relation to sustainability issues, thermoplastic elastomers also represent the materials of the future."

The weight reductions achieved by using Lightweight TPEs with recycled content for applications in the mobility sector or the consumer industry, for example, can save about 35 percent as compared to the respective standard TPS, 30 percent as compared to TPV, or even up to fifty percent as compared to PVC.

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Other advantages of lightweight elastomers from KRAIBURG TPE include easy processability in the respective production processes. This means they can be used – with low shrinkage and distortion in the part geometry – for injection molding and extrusion processes on all thermoplastic production lines. The material achieves excellent results due to its high surface homogeneity and outstanding compression set. Lightweight TPE with recycled content is also characterized by its softness, damping, surface quality and wearing comfort. So there's a wide range of possible applications: in the automotive sector, as components for power tools, as well as for large-surface and lightweight components for skiing equipment or protectors, etc.

Lightweight TPEs with recycled content are available worldwide from KRAIBURG TPE.



Image: Substituting standard thermoplastic elastomers (TPEs) with light TPEs with recycled content opens up a wide range of options. *(Image: KRAIBURG TPE)*

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About Lightweight TPEs

Since their launch in 2020, Lightweight TPEs from KRAIBURG TPE have been used in many automotive applications. Along with the benefit of component weight reduction, the product's key factors particularly include material properties such as reduced distortion of the component, optimized cycle times as well as outstanding resilience that can even compete with fully cross-linked EPDMs. Successful applications in the fields of roof rail carriers, multicomponent door seals, trunk and hood buffers, as well as extruded sealings, confirm the unique properties of this still young technology and are encouraging KRAIBURG TPE to extend the idea of sustainability beyond weight reduction.

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About KRAIBURG TPE

KRAIBURG TPE (www.kraiburg-tpe.com) is a global manufacturer of custom thermoplastic elastomers. KRAIBURG TPE was founded in 2001 as an independent business unit of the KRAIBURG Group and is now the industry's competence leader in the field of TPE compounds. The company's goal is to provide safe, reliable and sustainable products for customer applications. With more than 660 employees worldwide and production sites in Germany, the USA and Malaysia, the company provides a large product portfolio for applications in the automotive, industrial and consumer goods industries, as well as for the strictly regulated medical sector. The established THERMOLAST®, COPEC®, HIPEX®, and For Tec E® product lines are processed by injection molding or extrusion and offer manufacturers numerous advantages not only in processing but also in product design. KRAIBURG TPE is characterized by its innovative strength, global customer orientation, customized product solutions and reliable service. The company is ISO 50001 certified at its headquarters in Germany and holds ISO 9001 and ISO 14001 certifications at all its sites worldwide.