

Press release

Lightweight thermoplastic elastomers for significant weight savings

Waldkraiburg, February 2020

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KRAIBURG TPE to launch the world's first weight-saving thermoplastic elastomers

Foam-free and extremely lightweight for sophisticated components

KRAIBURG TPE has developed an innovative material technology that enables the production of thermoplastic elastomers (TPE) with very low density. The result is three new product lines for extremely weight-saving components of a type that is in increasing demand for vehicle construction, power tools and various other application areas.

To further reduce CO₂ emissions from vehicles and to improve the fuel economy and range of new models, automobile manufacturers are always looking for extremely lightweight solutions – particularly for unsprung weight in and on their vehicles. But lower weight and increased mobility also play a decisive role for the market success of products in other sectors such as power tools, aviation, drones, textiles, as well as sports, leisure and outdoor items.

Expandable materials including TPE are therefore often used, but they require strict process control procedures to achieve an even surface quality without surface waviness.

KRAIBURG TPE has now been able to implement an outstanding new TPE technology by using 3M™ Glass Bubbles for materials with very low densities of between 0.7 and 0.9 g/cm³ (1.358 and 1.746 slug/ft³) that allow the production of extremely lightweight thin-walled moldings that provide excellent surfaces and are able to withstand mechanical loads.

The microscopically small hollow glass bubbles are made of chemically stable borosilicate glass that is insoluble in water. They spread evenly in the TPE matrix and help increase the dimensional stability.

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The new lightweight TPEs can be processed cost-effectively using established injection-molding machines and extruders. In addition to significant weight savings (see table) and very homogeneous surfaces, they also provide excellent compression set values. Production waste can be recycled directly.

KRAIBURG TPE is initially offering three specific series of the world's first TPEs of this type:

- THERMOLAST® K LW/UV (lightweight + UV resistance) specifically for exterior vehicle components
- THERMOLAST® K LW/CS/UV (lightweight + increased compression set + UV stability) with excellent resilience and adhesion to polypropylene, making this product series particularly suitable for various sealing applications
- THERMOLAST® K LW/PA (lightweight + adhesion to polyamides), also with HB nonflammability classification in accordance with UL94; ideal for power tools, for example

“3M™ Glass Bubbles have been tried and tested as weight-saving fillers in various ‘hard’ thermoplastics, but our new lightweight technology is using them in TPEs for the first time,” emphasizes Martina Hetterich, Project Manager Advance Development at KRAIBURG TPE. “Thanks to the excellent collaboration with our partner 3M™, we have been able to develop formulations that not only meet current lightweight construction and quality requirements, but also open up completely new markets for the commercial use of our TPEs.”

The three new THERMOLAST® K lightweight series from KRAIBURG TPE are now available worldwide.

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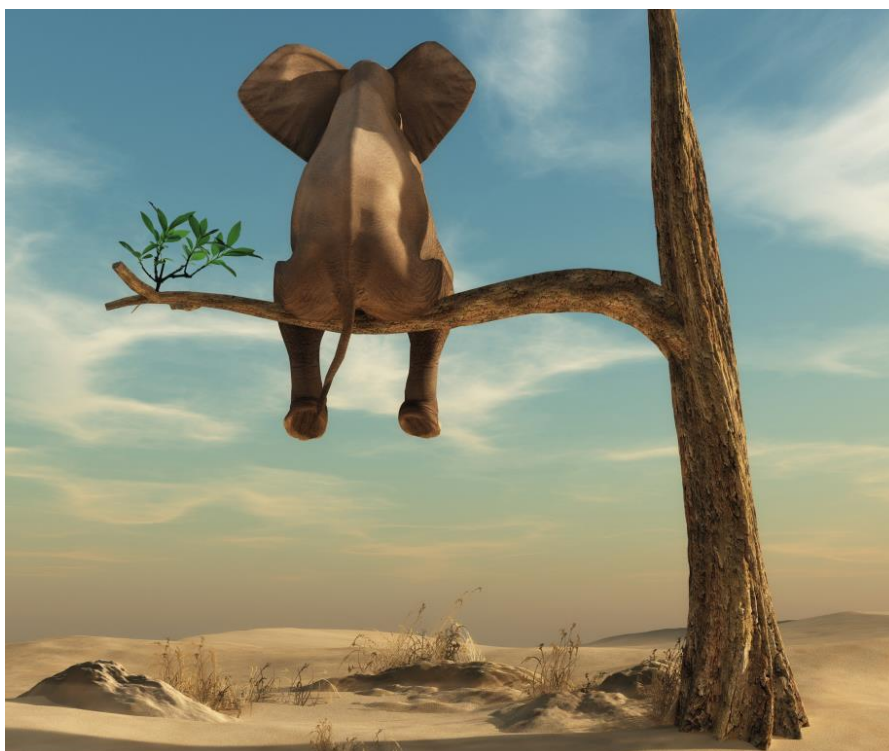
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Maximum possible weight savings with KRAIBURG TPE's new lightweight materials

Reference material	PVC	EPDM rubber	TPU	TPS	TPV
Weight saving with THERMOLAST® K lightweight materials	50%	40%	40%	35%	30%

(Table: © 2020 KRAIBURG TPE)



KRAIBURG TPE's innovative new technology for thermoplastic elastomers with very low material density allows the production of extremely lightweight thin-walled moldings by injection molding and extrusion that provide excellent surface quality and are able to withstand mechanical loads.

(Image: © 2020 KRAIBURG TPE)

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About KRAIBURG TPE

KRAIBURG TPE (www.kraiburg-tpe.com) is a global manufacturer of thermoplastic elastomers. From its beginning in 2001 as subsidiary of the historical KRAIBURG Group founded in 1947, KRAIBURG TPE has pioneered in TPE compounds, today being the competence leader in this industry. With production sites in Germany, the US, and Malaysia the company offers a broad range of compounds for applications in the automotive, industrial, consumer, and for the strictly regulated medical sectors. The established THERMOLAST®, COPEC®, HIPEX®, and For Tec E® product lines are processed by injection molding or extrusion and provide numerous processing and product design advantages to manufacturers. KRAIBURG TPE features innovative capabilities as well as true global customer orientation, customized product solutions and reliable service. The company is certified to ISO 50001 at its headquarters in Germany and holds ISO 9001 and ISO 14001 certifications at all global sites. In 2018, KRAIBURG TPE, with over 640 worldwide employees, generated sales of 189 million euros.

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