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C. DOHMEN, P. ZIMMERMANN
FKuR introduces new bio-based styrenic thermoplastic elastomers and polypropylene compounds

The product characteristics of the newly developed bio-based TPE and PP compounds correspond largely or entirely to those of their petrochemical counterparts, hence, they can substitute them in existing markets and open up new perspectives. With Terraprene, FKuR has brought new TPE-S grades based on a high content of bio-sourced raw materials to market maturity. In addition, the recently released Terralene PP compounds made by FKuR are partially bio-based and currently include an injection molding and an extrusion grade.

K. MASCHKE, C. KILGUS
High-temperature TPC for automotive charge-air ducts

New high-heat thermoplastic copolyester elastomers (TPC) from DSM allow engine designers and manufacturers to achieve significant weight and cost savings while providing high resistance to continuous use temperatures up to 180 °C. In particular, the new TPE technology developed by DSM is targeted at air ducts on the hot side of charge-air turbo systems, where it can help to minimize the complexity of designs and eliminate the use of different materials.

R. MARIN, J. GIL, D. SALVATELLA, L. VALCARCEL
Pioneering aliphatic TPU solutions

The latest breakthroughs in the new aliphatic thermoplastic polyurethane (TPU) solutions from Lubrizol Engineered Polymers are a consolidation of years of work to provide the right tools to enhance designs of coloured or transparent applications that will be exposed to UV light, and where non-yellowing and weatherability are essential. These innovative polymers can help fulfill requirements not only for performance and durability, but also for aesthetics and design properties.

M. GRÜNDEKEN
Elastomers for medical applications

In the medical industry, demand for safe and halogen-free polymers, such as styrenic block copolymers (SBC) is constantly rising. Their safe and non-toxic properties make SBCs an ideal component in the design of medical products where superior performance and safety is required. Thermoplastic elastomers combine flexibility with high performance while being compliant to many food and contact regulations due to their inherent low toxicity.
A. SCHINDLER, E. MOUKHINA, T. PFLOCK

**Automatic identification and classification of thermoplastic elastomers by means of DSC and TGA** ................................................................. 188

DSC (Differential Scanning Calorimetry) and TGA (Thermogravimetric Analysis) belong to the most widely-used methods in the field of polymer characterization. Both techniques are used for the identification, failure analysis and quality control of polymer materials. These applications are now considerably simplified by innovative software solutions: AutoEvaluation is able to automatically and user-independently evaluate measurement curves while Identify can recognize and classify measurements by performing a database comparison. Both functionalities provide helpful results with one click.

I. CUCCHI, M. A. ORTENZI

**TPC-ET with enhanced crystallization rate** .......................................................................................................................... 192

Thermoplastic copolyester elastomers (TPC-ET) offer excellent mechanical properties and due to their partial polyester backbone chemical resistance superior to most other thermoplastic elastomers. A weakness of these high performance elastomers is their relatively slow hardening speed. Sipol developed modified copolymers with improved crystallisation kinetics. The following article summarizes the route to these new grades by using DSC (Differential Scanning Calorimetry).

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M. M. ABDOLLAHI, A. R. SHAHIEZADEGAN-ESFAHANI

**Enhancing the mechanical characteristics of thermoplastic vulcanizates** ............................................. 196

Novel processing methods are tested to improve the tensile properties of ethylene propylene diene monomer/polypropylene composites.

K. OHNAMI, T. TAKAYAMA, K. TAKI, H. ITO, D. FUNAOKA, K. SHIGA

**Precise injection molding of thermoplastic elastomers** ........................................................................... 200

New thermoplastic elastomers (TPE) with different polymer content and additives were injection-molded onto line-and-space micro pattern and sand-blasted aluminum plates. The thermal shrinkage and micro surface replication of molded elastomers were revealed after injection molding. These properties of elastomers were dependent on the composition of polymer and additive. Moreover, the sand-blasted aluminum substrate was joined with the molten elastomer as the elastomers were developed to precise seal parts for electronic devices. The joining strength of the aluminum/elastomer interface was sufficiently strong as the elastomers themselves were fractured while the interface was held when the joined part was stretched.

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