

Technical articles

R. ELLER

TPE opportunities in future smart auto interiors 14

As in other industries, TPEs have penetrated auto interiors via drop-in replacement in existing applications (instrument panel skins, body/glazing seals, door trim, etc). Looking forward, non-TPE developments in the form of devices for sending and receiving electronic signals accompanied by a shift to electric vehicles (EVs) and (eventually) autonomous vehicles (AVs) will drive TPE usage and profitability in auto interiors well beyond drop-in replacement.

M. HÜBNER

Tailored colour masterbatches for high-quality TPE tints Applications and benefits of Caparol NEFA MB masterbatches for thermoplastic elastomers – part 2 24

Dispersive and distributive mixing processes are major elements in the manufacture of thermoplastic masterbatches and compounds. Continuously working twin-screw extruders and kneader systems are mainly used for compounding. A crucial restriction of these mixing devices is the limited dwell time of the components to be mixed. Caparol Industrial Solutions GmbH is a company that has specialised in the manufacture of primarily liquid and paste-form pigment and additive concentrates. Discontinuously working mixing and dispersion machines, such as roller mills, bead mills or dissolvers are used in particular in the production of these concentrates. This is where the compounds and masterbatches of the NEFA MB product group come into play. [...]

J. E. PUSKAS

A piezoelectric thermoplastic elastomer containing a bent core liquid crystal. 28

Piezoelectric effects in polymers are generally small but can be increased when they are compounded with ferroelectric materials. Due to their flexibility and the possibility to prepare films, polymer composites represent an advantage over ceramics and other widely used piezoelectric materials. We have created a soft, highly piezoelectric material by compression molding by which a bent-core liquid crystal was confined in a biocompatible thermoplastic elastomer, Sibstar. The bent-core liquid crystal in a polar smectic X-phase is characterized for having superior piezoelectricity but no mechanical stability of its own, thus requiring a carrier material. [...]

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