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TPEs and TPUs for all purposes from robust pallets to luxury automotive interiors

Styroflex as modifier for light weight pallets A new generation of transport pallets is being launched onto the market by Austrian Hirsch Group, Glanegg. The pallets are easy to clean and very sturdy, but first and foremost, they weigh less than the well-known EuroPallets made of wood. Hirsch uses BASF's styrene butadiene copolymer Styroflex 2G66 as a toughness modifier for the HIPS film that protects the lightweight core of the pallets.

The new transport pallets from Hirsch are hygienic, safe and easy to clean and weigh up to 75 % less than conventional wooden EuroPallets

Compared to conventional wooden pallets, weighing 20–40 kg, or metal-reinforced polyethylene pallets, the products from Hirsch offer the advantage of a significantly lower weight: they weigh 50 up to 75 % less. Engineers at Hirsch have developed a rigid and strong core made of EPS for this standard transport structure. To withstand damage this structure has to be protected by a very robust skin. This is why Hirsch turned to a two-layer film made of impact-resistant polystyrene whose layers have Styroflex added to them. The 1–2 mm thick film wraps the pallet tightly. While Styroflex serves in other applications in the form of films, in this case it is used as a toughness modifier for impact resistant polystyrene. According to BASF, Styroflex 2G66 also makes the material less prone to stress cracking. Furthermore, it also enhances the compatibility among the materials and creates a non-slip surface.

Cables and lines made with Elastollan 785 A 10 HPM meet the requirements of temperature class D of German standard LV 112 and are able to pass the so-called winding test even after 3,000 h of hot air ageing at 150 °C

New Elastollan TPUs for automotive cable ...

Electric and hybrid vehicles place high demands on cable harnesses and lines. Due to the high voltages of as much as 1,000 volts and correspondingly high currents, cables in these cars have to be able to withstand temperatures that are much higher than those encountered by their predecessors. For these purposes BASF has introduced **Elastollan 785 A 10 HPM** for cable sheathing. Aside from its temperature resistance the new TPU also stands out for its low compression set.

The new Elastollan type easily meets the requirements of temperature class D as well as the more strict specifications of LV 112 in

terms of hydrolysis resistance. BASF points out here, that alternative plastics that display a comparable performance in this respect are either more expensive or else they are more laborious, and thus more costly, to process.

Customer tests with the new product are currently being conducted at leading automotive cable manufacturers and, in many cases, it is about to be specified and approved for high-temperature cable applications. Aside from the "soft" Elastollan, with a hardness of Shore 85 A, BASF Polyurethanes also offers the considerably harder **Elastollan 745 D 15 HPM** (hardness of Shore 53 D). In contrast to the softer product, which is recommended for thicker walls of the kind found in sheathed cables or battery lines, Elastollan 754 D 15 HPM is suitable for very thin core insulation.

Elastollan TPU which recently achieved better flow properties and a broader spectrum of available hardnesses, can create tactile sensations from velvet to leather-like

... and automotive interior applications

Other interesting applications of Elastollan include automotive interior applications in combination with **Elastoskin** IMC spray skin. Both surface materials are charcterised by giving a luxurious look and exquisite feel. The IMC spray skin, an aromatic PU system, is relatively soft since it is also back-foamed. This is why it is employed whenever good haptic properties in response to pressure are valued in areas such as instrument panels, armrests or inside door panelling. HPM-TPU, in contrast, yields a soft-touch (tactile sensation); parts with Elastollan surfaces are not back-foamed. Upon its introduction onto the market three years ago, the hard-phase-modified aliphatic HPM-TPU Elastollan attracted a lot of interest because of its multifaceted haptic possibilities, ranging from velvet to leather-like according to customer requirements. Moreover, the lightfast TPU does away with the otherwise necessary laborious off-line coating process. Application examples are door handles, centre console covers and cup holders. A recent example for the application of this material is the cover of the centre console of the **VW Golf VI.**

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