TPE - E

e.g. Arnitel®, Keyflex®, Kopel® (brand names of the TPE-E materials we use)

TPE-E is a newly developed material of the thermoplastic elastomers family, based on polyesters. These co-polyester types combining the mechanical resistance, the processing and usage properties of technical plastics with the performance features of thermosetting elastomers were originally developed for use in, amongst others, high resistance damping elements in aerospace and automotive industries.

The material is composed of rigid and plasticized segments. Their ratio as well as the composition of the plasticized segment can be varied to achieve a larger range of properties, for instance:

- excellent alternating bending resistance (higher flexibility compared to moulded rubber components)
- high impact resistance also at high temperatures and at temperatures below zero
- high tear and abrasion resistance
- high resistance to chemicals and weathering
- high mechanical carrying and bearing strength
- positive „soft touch“ properties
- good recycling properties
- pleasant tactile surface properties
- minimum material fatigue (better than vulcanised rubber)
- high stress resistance
- high water vapour permeability
- higher longevity than all previous elastomers

This group of materials is mainly used for safety relevant components, such as airbag applications, high stress resistant bellows and sleeves as well as repeated flexural joint covers, flexible spiral pressure hoses, e.g. for compressed air brake systems and other applications in the automotive industry.
Further applications even include medical areas, such as sterilisable catheters, suture threads for surgical purposes, etc.

Due to these positive properties and the health safety, they can also be used as damping elements in beds and for bed slats; furthermore, they are an ideal high performance material for caps and suspension elements. This has resulted in substantially extended longevity compared to all other flexible materials previously used for slats.

All our components made of these materials feature:

- maximum flexibility
- extremely low fatigue behaviour resulting in high longevity
- best possible elastic memory
- almost identical properties of use, even at differing temperatures
- high resistance
- pleasant tactile surface properties
- full recyclability after a long useful life

Various degrees of hardness can be used for the most different component applications. (46, 55, 63, 68 and 74 Shore D are available).
The types used by us meet ROHS requirements (requirements of the automotive and electrical industry) or are in part FDA approved (commodities coming into contact with foods), and can be used without objection with regard to health issues.

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