

# TPE

## Thermoplastic elastomers

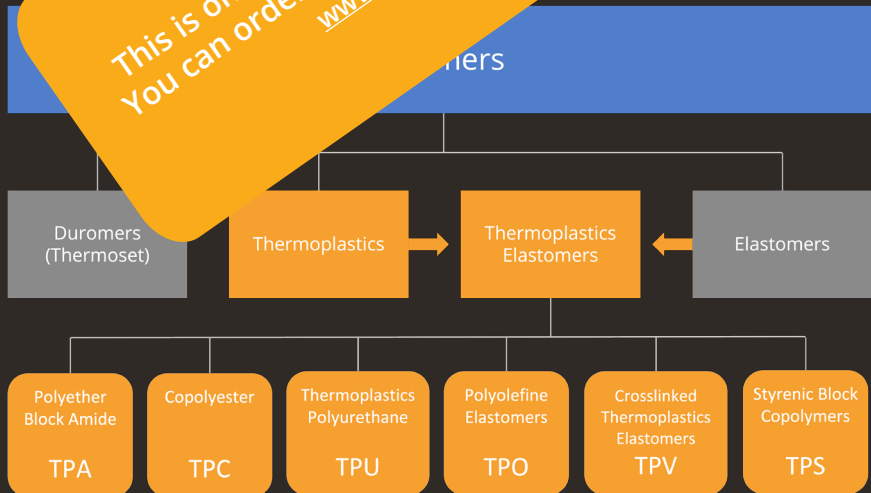
TPEs combine the dynamic processing capabilities of thermoplastic polymers with the softness and flexibility of elastomers. They present outstanding processing characteristics: easy to process, recyclable & bondable. Thermoplastic elastomers are used in a wide range of industries.

There is a wide range of TPE families:

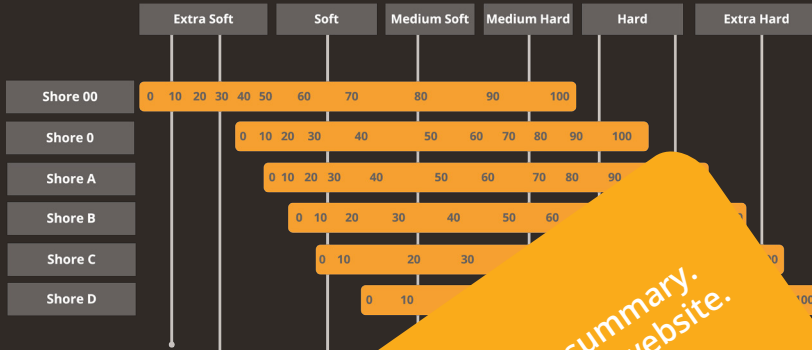
- block copolymers

- mechanical blends

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In addition to their chemical structure variety, TPEs are also distinguished by their hardness. Indeed, the Shore hardnesses of the TPEs can vary from Shore00 (*gel*) to Shore D (*rigid*).



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TPE can be used in a wide range of physical applications. It is a complementary material to compounds such as Thermoplastic styrene block copolymer and SBC (styrene block copolymer - "BC").

- There are several types of SBC:
- SBS:** Styrene-butadiene-styrene BC
- SIS:** Styrene-isoprene-styrene BC
- SEBS:** Styrene-ethylene-butylene-styrene BC
- SEEPS:** Styrene-ethylene-ethylene-butylene-styrene BC
- SEPS:** Styrene-ethylene-propylene-styrene BC
- SEPS-V:** Styrene-ethylene-propylene-styrene BC, cross-linkable

**TPV:** Thermoplastic elastomer of

## Applications

thermoplastic and vulcanized elastomers (e.g. EPDM/ PP)

**TPO:** Thermoplastic elastomer polyolefin (a reactor-made TPE and a TPE compound)

**Reactor-made TPE:** properties are provided by a single polymer type. It is created in the polymerization process obtained by copolymerization of at least two monomers, which are block polymerized.

**TPU:** Thermoplastic polyurethane elastomer

**TPC:** Thermoplastic copolyester elastomer

**TPA:** Thermoplastic polyether block amides elastomer

**TPO:** Thermoplastic elastomer polyolefin (a reactor-made TPE and a TPE compound)