

Thermoplastic styrene block copolymer elastomer (TPS)

General

TPS is an elastic material that is characterized by a pleasant feel and good mechanical properties. It has a high resetting force and is particularly flexible, making it ideal for applications where rubber-like elasticity is required. TPS shows good resistance to weather conditions and many chemicals and is also skin-friendly, which is often used in medical technology and consumer goods.

In FDM 3D printing, TPE-S convinces with its good adhesion to other plastics, especially on other styrene-based plastics, which also makes it interesting for dual extrusion printing.

As with other flexible materials, the smaller the filling and the thinner the wall thickness, the more elastic the printed component remains. TPS offers a balanced combination of flexibility, adhesion and printability for a variety of applications.

Advantageous

- high elasticity - high resettability
- well suited for dual extrusion
- non-slip surface
- pleasant feel

Disadvantageous

- Only printable with Direct Drive extruder
- low print speed

Processing data

Printing temperature

210-240 °C

Heated bed temperature

60-80 °C

Technical data

Shrinkage	1 %
MFR	- g/10min
Yield stress	- MPa
Yield elongation	- %
Elongation at break (ISO 37)	650 %
Tensile modulus (ISO 37)	11 MPa
Heat deflection temperature 0.45 MPa	110 °C
Vicat softening temperature A	- °C
Thermal conductivity 23°C	- W/(K*m)
Flammability (UL 94)	V0
Density (ISO 1183 1A)	1.22 g/cm ³