



TECHNICAL DATA SHEET

TPU Flex Semisoft

DESCRIPTION

TPU FLEX is a durable elastomere based on Polycaprolacton-Polyester. It was specially developed for industrial applications and is ideally suited for the production of elastic and damping components. The material is optimized for the FFF/FDM process in regards to thermal stability and better flow properties. The raw material is compliant according to the REACH- and RoHS-Standards.

FEATURES

- Good mechanical properties
- Excellent chemical resistance
- Free of silicone, softeners and oil
- Free of halogen
- UV-Resistant

PROPERTIES ¹

| TEST | METHOD | UNIT | VALUE |
|------------------------------|------------------|-------------------|------------|
| Tensile modulus (E-Modulus) | ISO 527-2/5A/500 | MPa | 42 |
| Ultimate elongation | ISO 527-2/5A/500 | % | 550 |
| Stress at break | ISO 527-2/5A/500 | MPa | 9 (50%) |
| | ISO 527-2/5A/500 | MPa | 11 (100%) |
| | ISO 527-2/5A/500 | MPa | 22 (300%) |
| VICAT A (VST) | ISO 306 | °C | 98* |
| Melting temperature | ISO 3146-C | °C | 180-230 |
| Density | ISO 2781 | g/cm ³ | 1.18 |
| Abrasion resistance | ISO 4649-A | mm ³ | 25 |
| Shore hardness | ISO 868 | Shore | 85A - 88A |
| Tear strength unnicked | ISO 34-1B | kN/m | 135 |
| Glass transition temperature | | °C | -34 |
| Compressive strength | DIN 53452 | MPa | 42 |
| Permeability AIR | DIN 53380 | 25°/60°C | 550/- |
| Permeability N2 | DIN 53380 | 25°/60°C | 380/2200 |
| Permeability O2 | DIN 53380 | 25°/60°C | 950/5100 |
| Permeability CO2 | DIN 53380 | 25°/60°C | 7300/19900 |
| Permeability N2O | DIN 53380 | 25°/60°C | 13800/- |
| Poisson-ratio | acc. to Hencky | | 0.46 |

*Temperature resistance tested at a minimum wall thickness of 4 mm.

CERTIFICATIONS & ADDITIONAL INFORMATION ²



STORAGE AND SHELF LIFE

Store in a dry room at room temperature (18-27°C / 65-80°F). Keep out of direct heat and sunlight. When stored correctly, this material has a shelf life of 2 years.

1. Additional info in our regulatory, additional information and chemical resistance data sheets.
2. Certifications depend on colors in final product. More info in the additional information sheet.

| | | |
|--|------------------------|----|
| | TEMPERATURE RESISTANCE | 7 |
| | EASE OF PRINTING | 5 |
| | VISUAL QUALITY | 7 |
| | LAYER ADHESION | 10 |
| | IMPACT RESISTANCE | 10 |
| | MAXIMUM STRESS | 8 |
| | ELONGATION AT BREAK | 10 |

PRINT SETTINGS

| | |
|----------|--------------|
| Nozzle | 220-250°C |
| Heatbed | 50-60°C |
| Adhesive | not required |
| Speed | 10-20mm/s |
| Cooling | 0-30% |

Recommended settings for printers with a 0.4mm Nozzle. Max. 50% layerheight. Optimal print settings may vary between different printers and also depend on environmental factors.

NEED HELP?

If you have any question about the product and/or you are experiencing an issue, please contact us via support@extruder.com