



# TECHNICAL DATA SHEET

## TPU Flex Medium

### 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 <sup>1</sup>

TEST	METHOD	UNIT	VALUE
Tensile modulus (E-Modulus)	ISO 527-2/5A/500	MPa	40
Ultimate elongation	ISO 527-2/5A/500	%	475
Stress at break	ISO 527-2/5A/500	MPa	- (50%)
	ISO 527-2/5A/500	MPa	17 (100%)
	ISO 527-2/5A/500	MPa	30 (300%)
VICAT A (VST)	ISO 306	°C	110*
Melting temperature	ISO 3146-C	°C	190-220
Density	ISO 2781	g/cm <sup>3</sup>	1.19
Abrasion resistance	ISO 4649-A	mm <sup>3</sup>	25
Shore hardness	ISO 868	Shore	98A
Tear strength unnicked	ISO 34-1B	kN/m	170
Glass transition temperature		°C	-30
Permeability AIR	DIN 53380	25°/60°C	450/-
Permeability N2	DIN 53380	25°/60°C	330/1800
Permeability O2	DIN 53380	25°/60°C	840/4500
Permeability CO2	DIN 53380	25°/60°C	6500/19000
Permeability N2O	DIN 53380	25°/60°C	12400/-

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

### CERTIFICATIONS & ADDITIONAL INFORMATION <sup>2</sup>



### 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.

Metric	Score
TEMPERATURE RESISTANCE	8
EASE OF PRINTING	6
VISUAL QUALITY	7
LAYER ADHESION	10
IMPACT RESISTANCE	10
MAXIMUM STRESS	9
ELONGATION AT BREAK	9

### PRINT SETTINGS

Nozzle	230-250°C
Heatbed	50-60°C
Adhesive	not required
Speed	20-30mm/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](mailto:support@extruder.com)