



TECHNICAL DATA SHEET

PLA TOUGH

1. DESCRIPTION

PLA Tough is a bio-based material and an enhanced version of standard PLA, engineered for functional applications that demand higher mechanical performance. It combines the ease of printing that PLA is known for with significantly improved impact resistance, ductility and overall toughness, making it ideal for functional prototypes, mechanical components, snap-fits, brackets and end-use parts subject to dynamic or shock loads. The raw material is approved according to REACH, RoHS and FDA standards.

2. FEATURES

- Enhanced impact resistance
- Improved mechanical performance
- Increased flexibility and break resistance
- Easy to process
- Less brittle than standard PLA
- Made from renewable raw materials
- Biodegradable (EN 13432)

3. PROPERTIES

TEST	METHOD	UNIT	VALUE	PRINT SETTINGS	
Tensile modulus (Young's modulus)	ISO 527-2	MPa	3200	Nozzle	210-250 °C
Tensile strength at yield	ISO 527-2	MPa	56,9	Heatbed	35-60 °C
Tensile stress at break	ISO 527-1/-2	MPa	unbreakable	Adhesive	Not required
Elongation at break	ISO 527-2	%	14	Speed	20-200 mm/s
Flexural modulus	ISO 178	MPa	3340	Cooling	60-100 %
Flexural strength	ISO 178	MPa	89,8	Enclosed Space	No
Vicat softening temp.	ISO 306 A50	°C	65	Hardened Nozzle	No
Vicat softening temp. (*sintered)	ISO 306 A50	°C	> 150	Max. Volumetric Speed	21 mm³/s standard nozzle
Melting point (Tm)	ISO 3146-C	°C	180	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.	
Melt flow rate (MFR)	ISO 1133-1	g/10min	21 ±3		
Mould shrinkage	ISO 294-4	%	0.3		
Density	ISO 1183	g/cm³	1.2		

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

4. CERTIFICATIONS & ADDITIONAL INFORMATION



Certifications depend on colors in final product. More info in the additional information sheet.

5. 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.
Additional info in our regulatory, additional information and chemical resistance data sheets.