

Technical data sheet PLA



Description

PLA (Polylactic Acid) is a biodegradable, sustainable and food safe polymer made from organic sources.

It is the most common used filament in FFF 3D printers for its ease of use and a wide range of applications, especially those not mechanically or thermally demanding. Definitely a good starting point to learn about the 3D Printing manufacturing process.

Properties

- Detailed and glossy surface quality
- Good tensile strength
- Rigid, fragile behaviour
- Good UV resistance
- Withstand operating temperatures up to 50 °C.
- Odor-free, ideal for educational and office environments
- Compatible with PVA supports
- Low humidity resistance

Recommendations

Plastics absorb moisture from the air. For long periods of time without printing, it is recommended to keep the PLA spools in a box or airtight container with desiccant to keep them dry.

PLA emits low levels of gasses and particles when printed. We recommend printing it in a well-ventilated area to ensure a healthy environment.

Filament specifications

Diameter	Ø 2.85 mm
Max roundness deviation	0.03 mm
Net filament weight	750 g
Material Density (ISO 1183)	1.24 g/cm ³

Mechanical properties

	Typical value	Test method
Tensile strength	MD 110 MPa	ASTM D882
	TD 114 MPa	ASTM D882
Tensile modulus	MD 3309 MPa	ASTM D882
	TD 3861 MPa	ASTM D882
Elongation at break	MD 160%	ASTM D882
	TD 100%	ASTM D882
Elmendorf tear	MD 15 g/ml	ASTM D1922
	TD 13 g/ml	ASTM D1922

Thermal properties

	Typical value	Test method
Heat deflection temperature B	65 °C	ASTM D1505
Vicat softening temperature	85 °C	ASTM D1525

Printing settings

Extruder temperature	190 °C - 220 °C
Bed temperature	65 °C
Speed	10-70 mm/s
Retraction speed	40 mm/s
Retraction distance	4 mm
Cooling fan	Yes
Minimum layer height	0.05 mm

More information about PLA: <https://www.bcn3dtechnologies.com/en/3d-printer/filaments/#pla>

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