

## 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.

## PLA - Technical information including:

Thermal properties		
	Typical value	Test method
Melting temp.	115±35°C	ISO 11357
Vicat softening temp.6	0 °C	ISO 306
Glass transition temp.	57 °C	ISO 11357

Filament specifications	
Diameter	Ø 2.85 mm
Max roundness deviation	≥ 95%
Net filament weight	750 g
Specific gravity (ISO 1183)	1,24 g/cm³

Mechanical properties		
	Typical value	Test method
MFR 210°C/2,16kg	9,56 gr/10 min	ISO 1133
Tensile strength at yield	70 Mpa	ISO 527
Strain at yield	5 %	ISO 527
Strain at break	20 %	ISO 527
Tensile Modulus	3120 MPa	ISO 527
Impact strength-Charpy method 23 °C	3,4 kJ/m²	ISO 179
Moisture absorption	1968 ppm	ISO 62

Printing settings	
Extruder temperature1	90 °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