

PLA Filament

PLA Filament (Polylactic Acid) is a biodegradable plastic coming from renewable organic resources (corn starch or sugarcane). PLA Filament is recyclable but can also be biological decomposed in composting plants. PLA is a polyester that is built from several lactic acid units. It is colourless and transparent. PLA has a density of about 1.25 kg/cm³. Polymers made of lactic acid are flammable.

The 3D4MAKERS filament has unique properties because it does not come into contact with water during the production process and is directly packaged in a vacuum packaging. These properties make the 3D4MAKERS particularly suitable for usage in FDM and FFF 3D printers. The material has an excellent adhesion between layers which results in great improvement of the impact resistance, strength, durability and the printing process.

PHYSICAL	CONDITIONS	TEST METHOD	TYPICAL VALUE
Density		ASTM D1505	1.24 g/cm ³
MECHANICAL			
Tensile Strength	MD	ASTM D882	110,3 MPa
	TD	ASTM D882	144,7 MPa
Tensile Modulus	MD	ASTM D882	3309 MPa
	TD	ASTM D882	3861 MPa
Elongation at Break	MD	ASTM D882	160 %
	TD	ASTM D882	100 %
Elmendorf Tear	MD	ASTM D1922	15 g/mil
	TD	ASTM D1922	13 g/mil
IMPACT			
Spencer Impact			2.5 J
THERMAL			
Melting Point		ASTM 3418	145 - 160 °C
TRANSMISSION RATES			
Oxygen		D1434	675 cc-mil/ m ² -24hr-atm
Carbon Dioxide		Internal	2,850 cc-mil/ m ² -24hr-atm
Water Vapor		ASTM F1249	375 g-mil/ m ² -24hr
OPTICAL			
Haze	1.50 mm	ASTM D1003	2.1 %
Gloss	20 °C	ASTM D1003	90

PRINT RECOMMENDATIONS	
Nozzle Temperature	170- 220 °C
Bed Temperature	20 - 60 °C
Print Speed	30 - 80 mm/s
Bed Adhesion	Glass bed, Blue painters tape, Adhesion spray & more

To get the best results while printing we advise you to keep the 3D printer in a room where there is hardly any draft and/or temperature fluctuations. Keep the 3D printer out of the sun. This cannot be a room where people sleep. When the 3D printer is not being used it is important to keep the 3D4MAKERS PLA Filament in a bag and stored in a cool, dry and dark place until it is used again.

Disclaimer: 3D4Makers makes no warranties what so ever, expressed or implied, including but not limited to, any implied fitness for any particular purpose. From the moment the product is shipped it is beyond our control. The information in this document is believed to be correct at the time of writing. However, handling, processing, settings, the type of 3D printer, slicing and other variables are completely up to the user. The method through which the product is used can be varied. It is up for the customer to determine how it is 3D printed and whether it is fit for purpose or suited to a particular application.