



PLA (Polylactic Acid) Filament

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Polylactic Acid (PLA) is a biodegradable plastic derived from renewable organic resources (corn starch or sugarcane). PLA is recyclable but can also be biological decomposed in composting plants. Polylactic acid 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. The glass temperature is typically around 50 °C and it has a melting temperature between 170 and 230 °C. The decomposing temperature is roughly 250 °C. Polymers made of lactic acid are flammable.

The **3D4MAKERS** PLA 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** PLA Filament 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.

The PLA Filament produced by **3D4MAKERS** meets the European regulations EC No. 1935/2004, EC No. 2023/2006 and EC No. 10/2011 concerning plastic materials and articles coming into contact with food. The colorants used by **3D4MAKERS** to colour the Filament also meet these European regulations.

Measurements & Tolerance

Size	Diameter tolerance	roundness
1,75 mm Filament	+/- 0,05mm	99%
2,85 mm Filament	+/- 0,07mm	99%

Moisture percentage	< 0,05%	
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Physical attributes

Description	Value	Test method
Density	1,24 g/cm ³	D 1505

Mechanical attributes

Tensile Stress	45 Mpa	D 882
Flexural Modulus	2300 Mpa	D 882
Impact strenght Notched Izod	19 Kj/m ²	D 882
Spencer Impact	2,5 joules	Spencer

Printer settings

Printer settings

Description	Value
Printer nose temperature	170 - 220°C
Heated platform temperature	35 - 60°C

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.

Safety information

REGULATION (EC) No. 1272/2008. According to EC regulations this product is not classified as hazardous.

Classification according to EU-directive 67/548/EEC or 1999/45/EC. According to EC criteria this product is not classified as hazardous.

COMPOSITION AND INFORMATION ON THE COMPONENTS

Mixture

This product is a mixture.

CAS No./EG No./Index	REACH Number	Quantity	Components	Classification Regulation (EC) No. 1272/2008
CAS No. 9051-89-2 EG No. Polymer	-----	98 – 100 %	Lactic acid Lactide	Not classified

Legally Obligated Information

1 Specific safety, health and environmental regulations and legislation for the substance or mixture.

European inventory of existing commercial chemical substances (EINECS)

The components of this mixture are either included in the EINECS list or exempt.

2 Chemical safety assessment: Does not apply

RoHS (Restriction of Hazardous Substances) and **REACH** (Registration, Evaluation, Authorisation and Restriction of Chemicals).

The PLA Filament produced by 3D4MAKERS meets the European RoHS and REACH guidelines.

Environmental information

Plastic waste can damage the environment. 3D misprints must be separated with plastic waste together with the Filament reel. 3D4MAKERS is developing a return system for 3D misprints and the Filament reel.

Together we can protect the environment!

