



Technical Data Sheet

Filalab PLA

Product Information

Product Name	Filalab PLA
Chemical Name	Polylactic acid
Diameter	1.75 ± 0.05 mm
Manufacturer	Filalab, Vilnius, Lithuania

General Description

Filalab PLA Filament is a high-quality, plant-based 3D printing material designed for ease of use and reliable performance. Derived from renewable resources, this filament is environmentally friendly and offers excellent printability with a wide range of FDM/FFF 3D printers. It features low warping, minimal shrinkage, and good adhesion to the build plate, making it ideal for creating detailed, dimensionally accurate parts with a smooth finish.



Product Properties

Property	Test Method	Result
Density	ISO 1183	1.25 g/cm ³
Melting temperature	ISO 3146-C	> 155°C
Melt flow rate (190 °C/2.16 kg)	ISO 1133	2.0 - 4.0 g/10 min
Modulus of elasticity	ISO 527	3,000 MPa
Tensile strength	ISO 527	55 MPa
Tensile strain at tensile strength	ISO 527	5.3%
Tensile stress at break	ISO 527	20.9 MPa
Tensile strain at break	ISO 527	16.3%
Flexural Modulus	ISO 178	3,075 MPa
Flexural strain at break	ISO 180	no break
Flexural stress at 3.5 % strain	ISO 178	73 MPa
Notched impact strength (Charpy), RT	ISO 179-1/1 eA	4.2 kJ/m ²
Impact Strength (Charpy), RT	ISO 179-1/1 eU	64.5 kJ/m ²



Recommended Printing Settings

Nozzle Temperature	210-230 °C (220-230 °C for Bambu Lab printers)
Bed Temperature	50-65 °C
Fan Speed	80-100%
Printing Speed	40-250 mm/s
Bed Type	Textured PEI Sheet, Smooth PEI Sheet, Glass or similar
Optional Adhesives for Build Plate	Bambu Lab Glue Stick, Magigoo
Filament Drying Recommendations	Temperature: 55 °C, Drying Time 6-12 hours, If filament is brittle, try drying it for 6-12 hours

Safety Information:

Filalab PLA Filament is non-toxic and safe for general use. However, proper ventilation is recommended during printing. Always consult the Safety Data Sheet (SDS) for more detailed safety guidelines.



Storage, Handling, and Drying Process:

PLA filament is less hygroscopic than some other materials, but it can still absorb moisture from the air, which may lead to printing defects like bubbling and poor surface finish. Proper storage and occasional drying will help maintain the quality of the filament.

Storage:

- **Environment:** Store PLA in a cool, dry place away from direct sunlight and heat sources.
- **Sealing:** Keep the filament sealed in an airtight container with desiccant packs to prevent moisture absorption.
- **Desiccant Use:** Use silica gel packets or other desiccants inside the storage container to maintain low humidity levels.

Drying Process:

- **Drying Temperature:** 40-45°C (104-113°F)
- **Drying Duration:** 3-4 hours, depending on moisture level
- **Drying Equipment:** Use a filament dryer, convection oven, or food dehydrator to remove absorbed moisture before printing.

After drying, store the filament in an airtight container to prevent it from reabsorbing moisture from the environment.



Features:

- **Eco-Friendly:** Made from renewable resources and biodegradable under industrial composting conditions, making it a more environmentally friendly choice.
- **Low Warping:** PLA has low shrinkage and warping, which makes it easier to print larger parts without the need for a heated bed.
- **High Print Quality:** Capable of producing fine details and smooth surface finishes, making it ideal for aesthetic projects.
- **Low Odor:** Emits a mild, sweet odor during printing, which is less offensive than some other filaments.
- **Easy to Print:** PLA is user-friendly and works well with most 3D printers, even at lower temperatures.

Pros and Cons:

Pros:

- **Easy to print:** Low warping and low-temperature requirements.
- **Eco-friendly:** Made from renewable resources and biodegradable.
- **Accurate:** Minimal shrinkage for precise prints.
- **Compatible:** Works with most 3D printers without a heated bed.

Cons:

- **Brittle:** Less durable for functional parts.
- **Low heat resistance:** Deforms at temperatures above 60°C.
- **Moisture-sensitive:** Requires proper storage to maintain quality.