Shenzhen Elegoo Technology Co.,Ltd.
Technical Data Sheet

Basic Introduction

Product Name: ELEGOO PLA

Applicable Industry: Toys, desktop ornaments, interior decoration etc.

Manufacturer: Shenzhen Elegoo Technology Co.,Ltd.

Manufacturer Address: 101, No. 30, Dahe Industrial Zone, Guancheng Community, Guanhu Street, Longhua District, Shenzhen, Guangdong Province, China

Tel: +86-0755-21005141

Pin Code: 518000

Advantages

ELEGOO PLA is made from corn starch and other natural materials. It is eco-friendly, easy to print and form. It has low shrinkage rate and minimal warping. It is also available in a wide range of colours.

Recommended Printing Settings

Drying Settings Before Printing: 55 °C, 8 h (Air Drying Oven)

Printing Temperature and Humidity: ≤ 20% RH (sealed with desiccant)

Storage Temperature and Humidity: ≤ 20% RH (sealed with desiccant)

Printer Type: Enclosed-frame, open-frame

Nozzle Size: 0.2, 0.4, 0.6, 0.8 mm

Plate Type: Textured PEI plate, smooth PEI plate or other plates

Plate Surface Pretreatment: Applying the glue

Nozzle Temperature: 190 - 230 °C

Bed Temperature: 35 - 65 °C

Printing Speed: < 300 mm/s

Chamber Temperature: 20 - 45 °C

Support Material: Self-generated support or PLA special support

Physical Properties

Subjects	Testing Methods	Data
Density	ρ = m / v	1.26 g/cm³
Saturated Water Absorption Rate	25 °C , 55% RH, Indoor air	0.4%
Melt Index	190 °C, 2.16 kg	8.1 ± 1.5 g/10 min
Glass Transition Temperature	DSC, 10 °C/min	60 °C
Crystallization Temperature	DSC, 10 °C/min	N / A
Melting Temperature	DSC, 10 °C/min	158 °C
Vicar Softening Temperature	ISO 306, GB/T 1633	62 °C
Heat Deflection Temperature 1	ISO 75, 1.80 MPa	54 °C
Heat Deflection Temperature 2	ISO 75, 0.45 MPa	57 °C

Mechanical Properties

Subjects	Testing Methods	Data
Tensile Strength (XY)	ISO 527, GB/T 1040	38 ± 3 MPa
Tensile Strength (Z)	ISO 527, GB/T 1040	23 ± 2 MPa
Young’s Modulus (XY)	ISO 527, GB/T 1040	2014 ± 148 MPa
Young's Modulus (Z)	ISO 527, GB/T 1040	1475 ± 132 MPa
Breaking Elongation Rate (XY)	ISO 527, GB/T 1040	10.5% ± 2.1%
Breaking Elongation Rate (Z)	ISO 527, GB/T 1040	6.7% ± 1.5%

Bending Strength (XY)	ISO 178, GB/T 9341	72 ± 5 MPa
Bending Strength (Z)	ISO 178, GB/T 9341	45 ± 4 MPa
Bending Modulus (XY)	ISO 178, GB/T 9341	2993 ± 182 MPa
Bending Modulus (Z)	ISO 178, GB/T 9341	2633 ± 165 MPa
Impact Strength (XY)	ISO 179, GB/T 1043	66.2 ± 3.9 kJ/m²
Impact Strength (Z)	ISO 179, GB/T 1043	12.5 ± 1.2 kJ/m²

Other Physical and Chemical Properties

Component: Polylactic acid

Skin Irritation: No

Chemical stability: Stable at normal temperature

Resistance to Water: Resistant

Resistance to Oil and Grease: Resistant to most kinds of oil and grease

Resistance to Organic Solvent: Not resistant to some organic solvents

Resistance to Acid: Not resistant

Resistance to Alkali: Not resistant

Flammability: Yes

Odor During Printing: Odorless

Specimen Information

Size: Refer to the following pictures.

Nozzle Temperature: 220 ℃

Bed Temperature: 55 ℃

Printing Speed: 150 mm/s

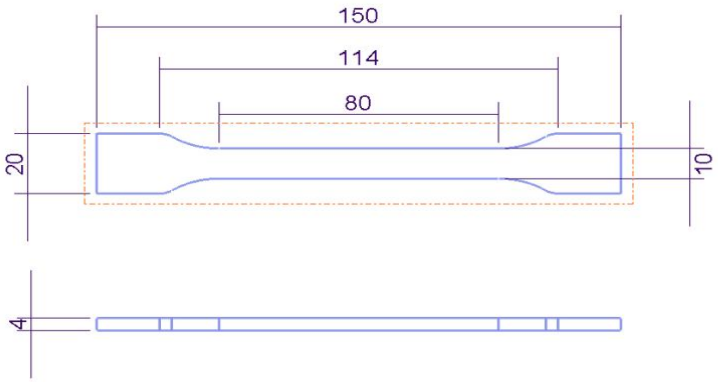
Infill Density: 100%

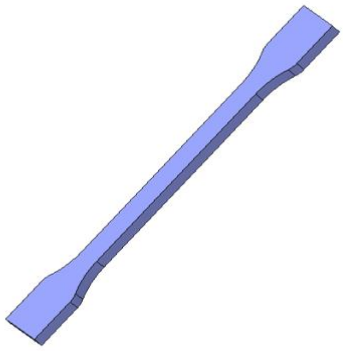
Infill Pattern: Concentric pattern

Statements: The test specimens were printed under the key parameters mentioned above. Before testing, all specimens

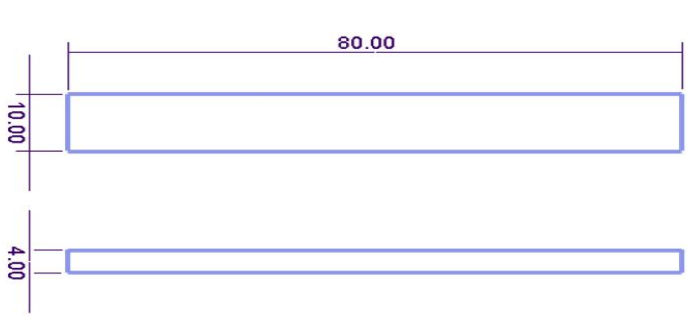
were annealed at 55 °C for 8 hours and then placed in an indoor environment at approximately 25 °C for 24 hours.

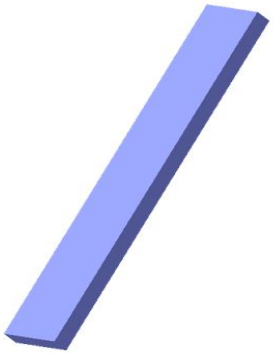
1. Tensile Testing



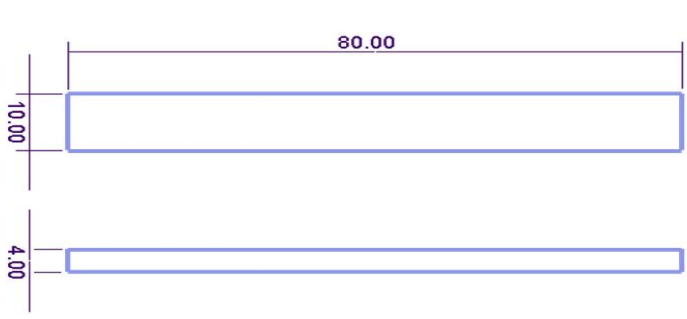


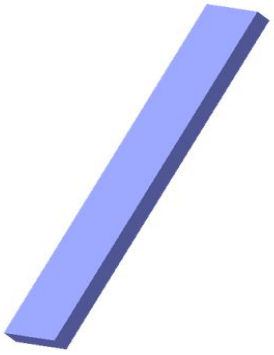
2. Bending Testing





3. Impact Testing





Disclaimer

The above properties data is obtained by ELEGOO through testing with standard samples, standard methods, and specific equipment, and is for reference and comparison only. The actual performance of 3D printed products depends not only on the characteristics used but also on many factors, such as the moisture absorption of the filaments, the printer, environmental conditions, model characteristics, printing parameters, etc.

When using the ELEGOO FDM 3D printing filaments, users are responsible for the legality, safety, and performance of the printing. ELEGOO is not responsible for the usage scenarios, or any damage or injury that occurs during using our filaments.