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PLA Basic

Basic info

KINGROON PLA Basic — Easy, Fast, and Reliable 3D Printing

PLA is one of the most widely used 3D printing materials, valued for its ease of printing and cost-effectiveness. It offers sufficient stiffness and strength to meet most standard printing needs. Additionally, PLA can biodegrade under certain artificial composting conditions, making it a more environmentally friendly option.

KINGROON PLA Basic is specially designed for high-speed printing. Compared to standard PLA, it can easily achieve printing speeds of 250–300 mm/s while maintaining excellent toughness and strong Z-layer adhesion, ensuring reliable and durable prints every time.

Specifications

Subjects	Data
Diameter	1.75mm
Net Filaments Weight	1kg
Spool Material	ABS (Temperature resistance 70 °C)
Spool Size	Diameter: 200 mm; Height: 67 mm

Recommended Printing Settings

Subjects	Data
Drying Settings before Printing	Blast Drying Oven: 50 °C，8 h
Printing and Storage Humidity	< 20% RH (Sealed with desiccant)
Nozzle Size	0.2, 0.4, 0.6, 0.8 mm
Nozzle Temperature	190 - 230 °C
Bed Type	Cool Plate, High Temperature Plate or Textured PEI Plate
Bed Surface Preparation	Glue
Bed Temperature	35 - 45 °C
Cooling Fan	Turn on
Printing Speed	< 300 mm/s
Retraction Length	0.6 - 1.0 mm
Retraction Speed	20 - 40 mm/s
Chamber Temperature	25 - 45 °C
Max Overhang Angle	55°
Max Bridging Length	30 mm
Support Material	Support for PLA

Properties

KINGROON PLA Basic Material Performance Testing

KINGROON has thoroughly evaluated the performance of PLA Basic across multiple aspects, including its physical, mechanical, and chemical properties.

Physical Properties		
Subjects	**Testing Methods**	**Data**
Density	ISO 1183	1.24 g/cm³
Melt Index	210 °C, 2.16 kg	23.2 ± 3.5 g/10 min
Melting Temperature	DSC, 10 °C/min	160 °C
Glass Transition Temperature	DSC, 10 °C/min	60 °C
Crystallization Temperature	DSC, 10 °C/min	N / A
Vicar Softening Temperature	ISO 306, GB/T 1633	57 °C
Heat Deflection Temperature	ISO 75 1.8 Mpa	54 °C
Heat Deflection Temperature	ISO 75 0.45 Mpa	57 °C
Saturated Water Absorption Rate	25 °C, 55% RH	0.004

Mechanical Properties		
Subjects	**Testing Methods**	**Data**
Young's Modulus(X-Y)	ISO 527, GB/T 1040	2580 ± 220 Mpa
Young's Modulus (Z)	ISO 527, GB/T 1040	2060 ± 170 MPa
Tensile Strength (X-Y)	ISO 527, GB/T 1040	35 ± 4 MPa
Tensile Strength (Z)	ISO 527, GB/T 1040	31 ± 3 MPa
Breaking Elongation Rate (X-Y)	ISO 527, GB/T 1040	12.2 ± 1.8 %
Breaking Elongation Rate (Z)	ISO 527, GB/T 1040	7.5 ± 1.3 %
Bending Modulus (X-Y)	ISO 178, GB/T 9341	2750 ± 160 MPa
Bending Modulus (Z)	ISO 178, GB/T 9341	2370 ± 150 Mpa
Bending Strength (X-Y)	ISO 178, GB/T 9341	76 ± 5 Mpa
Bending Strength (Z)	ISO 178, GB/T 9341	59 ± 6 Mpa
Impact Strength (X-Y)	ISO 179, GB/T 1043	26.6 ± 2.8 kJ/m²; 7.9 ± 1.2 kJ/m² (notched)
Impact Strength (Z)	ISO 179, GB/T 1043	13.8 ± 0.9 kJ/m²

Other Physical and Chemical Properties

Subjects	Data
Odor	Odorless
Composition	PLA
Skin Hazards	No hazard
Chemical Stability	Stable under normalstorage and handling conditions
Solubility	Insoluble in water

Resistance to Acid	Not resistant
Resistance to Alkali	Not resistant
Resistance to Organic Solvent	Not resistant to some organic solvents
Resistance to Oil and Grease	Resistant to most kinds of oil and grease
Flammability	Flammable
Combustion Products	Water, carbon oxides
Odor of Combustion Products	Odorless

Specimen Test

Specimen Printing Conditions	
Subjects	**Data**
Nozzle Temperature	220 °C
Bed Temperature	35 °C
Printing Speed	200 mm/s
Infill Density	100%

The performance values are tested by standard samples at KINGROON, and the values are for design reference and comparison only. Actual 3D printing model performance is related to many other factors, including printers, printing conditions, printing models, printing parameters, etc. In the process of using KINGROON 3D printing filaments, users are responsible for the legality, safety, and performance indicators of printing. KINGROON is not responsible for the use of materials and scenarios and is not responsible for any damage that occurs in the process of using our filaments.