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PETG Basic

Basic info

KINGROON PETG Translucent — Reliable, Durable, and Outdoor-Ready

KINGROON PETG Translucent stands out with its exceptional printing performance, offering advantages over standard PETG filaments.

This specially tuned filament reduces common printing issues such as nozzle sticking, leakage, and clumping, providing a smoother and more hassle-free experience.

In addition to excellent printability, PETG Translucent features water resistance, UV resistance, and stability under temperature changes, making it a perfect choice for outdoor applications and durable functional parts.

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: 65 °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	230 - 270 °C
Bed Type	Engineering Plate, High Temperature Plate or Textured PEI Plate
Bed Surface Preparation	Glue
Bed Temperature	65 - 75 °C
Cooling Fan	0 - 60%
Printing Speed	< 220 mm/s
Retraction Length	0.8 - 1.4 mm
Retraction Speed	30 - 60 mm/s
Chamber Temperature	35 - 50 °C
Max Overhang Angle	70 °
Max Bridging Length	30 mm
Support Material	Support for PLA

Properties

KINGROON PETG Translucent Material Performance Testing

KINGROON has thoroughly tested the performance of PETG Translucent across multiple aspects, including its physical, mechanical, and chemical properties.



Physical Properties		
Subjects	Testing Methods	Data
Density	ISO 1183	1.25 g/cm ³
Melt Index	230 °C, 2.16 kg	11.7 ± 1.5 g/10 min
Melting Temperature	DSC, 10 °C/min	228 °C
Glass Transition Temperature	DSC, 10 °C/min	70 °C
Crystallization Temperature	DSC, 10 °C/min	N/A
Vicar Softening Temperature	ISO 306, GB/T 1633	79 °C
Heat Deflection Temperature	ISO 75 1.8 Mpa	68 °C
Heat Deflection Temperature	ISO 75 0.45 Mpa	74 °C
Saturated Water Absorption Rate	25 °C, 55% RH	0.003

Mechanical Properties		
Subjects	Testing Methods	Data
Young's Modulus(X-Y)	ISO 527, GB/T 1040	1420 ± 160 MPa
Young's Modulus (Z)	ISO 527, GB/T 1040	1230 ± 140 MPa
Tensile Strength (X-Y)	ISO 527, GB/T 1040	33 ± 4 MPa
Tensile Strength (Z)	ISO 527, GB/T 1040	29 ± 3 MPa
Breaking Elongation Rate (X-Y)	ISO 527, GB/T 1040	8.2 ± 1.3 %
Breaking Elongation Rate (Z)	ISO 527, GB/T 1040	5.2 ± 0.9 %
Bending Modulus (X-Y)	ISO 178, GB/T 9341	1610 ± 130 MPa
Bending Modulus (Z)	ISO 178, GB/T 9341	1520 ± 110 MPa
Bending Strength (X-Y)	ISO 178, GB/T 9341	68 ± 3 MPa
Bending Strength (Z)	ISO 178, GB/T 9341	55 ± 4 MPa
Impact Strength (X-Y)	ISO 179, GB/T 1043	37.4 ± 3.3 kJ/m ² ; 8.6 ± 2.1 kJ/m ² (notched)
Impact Strength (Z)	ISO 179, GB/T 1043	7.2 ± 1.8 kJ/m ²

Other Physical and Chemical Properties

Subjects	Data
Odor	Odorless
Composition	PETG
Skin Hazards	No hazard
Chemical Stability	Stable under normal storage 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	255 °C
Bed Temperature	70 °C
Printing Speed	150 mm/s
Infill Density	100%

All the specimens were printed at the following settings: Nozzle Temperature = 255 °C, Printing Speed = 150 mm/s, Bed Temperature = 70 °C, Infill Density = 100%. All the specimens were annealed and dried at 65 °C for 8 h before testing. It's not recommended to anneal prints of PETG Translucent, because only very limited promotion of properties can obtain while prints with not very simple shape and structure may deform obviously. If you do want to anneal them, the suggested temperature is 60 to 70 °C, and the time is 6 to 12 hours. When drying the filament and annealing the prints, it's required to use an oven that has big enough inside volume and can provides even temperature distribution, such as a blast drying oven (forced-air drying oven), and the filament and prints need to be away from the heater, and a micro-wave oven or kitchen oven is not compatible, otherwise the filament and prints can get damaged.