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PETG-CF

Basic info

KINGROON PETG-CF — Carbon Fiber Reinforced for Strength and Precision

KINGROON PETG-CF is a carbon fiber reinforced PETG filament designed to deliver superior performance and appearance compared to standard PETG.

Its specially formulated blend minimizes warping and nozzle sticking, while ensuring smooth, consistent print quality.

The addition of carbon fiber provides a distinctive textured finish and enhanced strength, making it ideal for high-stress models and applications that demand a premium, durable finish.

Whether you're an engineer creating functional prototypes, an artist producing high-quality models, or an enthusiast experimenting with advanced materials, KINGROON PETG-CF is the perfect choice for reliable, high-performance printing.

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	0.4, 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	Turn on

Properties



KINGROON PETG-CF Material Performance Testing

KINGROON has thoroughly tested the performance of PETG-CF 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	250 °C, 2.16 kg	19.3 ± 2.4 g/10 min
Melting Temperature	DSC, 10 °C/min	225 °C
Glass Transition Temperature	DSC, 10 °C/min	68 °C
Crystallization Temperature	DSC, 10 °C/min	N/A
Vicar Softening Temperature	ISO 306, GB/T 1633	85 °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	2460 ± 230 MPa
Young's Modulus (Z)	ISO 527, GB/T 1040	1340 ± 150 MPa
Tensile Strength (X-Y)	ISO 527, GB/T 1040	35 ± 5 MPa
Tensile Strength (Z)	ISO 527, GB/T 1040	29 ± 4 MPa
Breaking Elongation Rate (X-Y)	ISO 527, GB/T 1040	10.4 ± 0.6 %
Breaking Elongation Rate (Z)	ISO 527, GB/T 1040	4.7 ± 0.4 %
Bending Modulus (X-Y)	ISO 178, GB/T 9341	2910 ± 260 MPa
Bending Modulus (Z)	ISO 178, GB/T 9341	1560 ± 180 MPa
Bending Strength (X-Y)	ISO 178, GB/T 9341	70 ± 5 MPa
Bending Strength (Z)	ISO 178, GB/T 9341	48 ± 4 MPa
Impact Strength (X-Y)	ISO 179, GB/T 1043	41.2 ± 2.6 kJ/m ² ; 15.7 ± 1.6 kJ/m ² (notched)
Impact Strength (Z)	ISO 179, GB/T 1043	10.7 ± 1.6 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. And the suggested

annealing temperature of models printed with Bambu PETG-CF is 55 to 60 °C, and the time is 65 to 70 hours. The annealing effect depends on the annealing temperature, time and the model itself: size, structure, infill and other printing settings; some prints

may deform and warp after annealing. 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,