IPCON FILA™ PPA GF

Glass Fiber Reinforced Polyphthalamide Filament

This is the filament's Technical Data Sheet (TDS). If you want the Material Safety Data Sheet (MSDS), please contact the customer service to download.

• Product Information

Item	Data
Filament Diameter	1.75 ± 0.05 mm
Net Filament Weight	1 kg ± 0.5%
Filament Length	320 m ± 2%
Spool Material	Cardboard (max heat resistance: 150 °C)
Spool Size	Outer Cardboard's diameter: 200 mm; Inner roller's diameter: 90 mm

• Filament's Properties

Physical Properties	Testing Methods	Data
Density	ISO 1183-3	1.28 g/cm³
Saturated Water Absorption Rate	25 °C，55% RH，room air	1.29%
Melt Index	290 °C，2.16 kg	13.2 g/ 10 min
Melting Temperature	DSC，10 °C/min	256 °C
Vicar Softening Temperature	ISO 306，GB/T 1633	231 °C
Heat Deflection Temperature	ISO 75，0.45 MPa	227 °C

Mechanical Properties*	Testing Methods	Data*
Tensile Strength XY	ISO 527，GB/T 1040	106 MPa
Tensile Strength Z	ISO 527, GB/T 1040	52 MPa
Young's Modulus XY	ISO 527，GB/T 1040	6558 MPa
Young's Modulus Z	ISO 527，GB/T 1040	3472 MPa
Breaking Elongation Rate XY	ISO 527，GB/T 1040	2.1%
Breaking Elongation Rate Z	ISO 527，GB/T 1040	1.0%
Flexural Strength XY	ISO 178，GB/T 9341	159 MPa
Flexural Strength Z	ISO 178，GB/T 9341	75 MPa
Flexural Modulus XY	ISO 178，GB/T 9341	5920 MPa
Flexural Modulus Z	ISO 178，GB/T 9341	3246 MPa
Impact Strength XY	ISO 179，GB/T 1043	30.2 kJ/m²
Impact Strength Z	ISO 179，GB/T 1043	4.8 kJ/m²

*The mechanical properties were tested on specimens printed by IPCON using a Bambu X1C printer (nozzle temperature: 290 °C, bed temperature: 100 °C, printing speed: 150 mm/s, infill density: 100%, infill pattern: concentric) and black PPA GF Filament. The data is for user reference and comparison only. When using it, users are responsible for the safety, legal compliance and product performance.

• Main Features and Application Scenarios

1. Extreme temperature and humidity resistance (short-term peak of temperature resistance reaches 220 °C); balanced stiffness and toughness; creep-resistant, ultra-low shrinkage and warping; insulated; 4 basic colors: black, white, gray and red.

2. Can be used to print bicycle accessories, as well as heat and humidity-resistant, and insulating parts for automobiles, electronics and mechanical equipment.

• Recommended Printing Settings

Drying Settings Before Printing	100 - 140 °C，6 - 8 h
Printing Temperature and Humidity	≤ 120 °C, ≤ 20% RH (Sealed with desiccant)
Storage Temperature and Humidity	≤ 35 °C，≤ 20% RH (Sealed with desiccant)
Compatible Support Material	Itself or support filament for PA
Compatible Printer Type	Enclosed-frame (recommended), open-frame,
AMS or CFS	Not Compatible
Compatible Nozzle Material	Hardened steel, diamond, tungsten carbide, etc
Compatible Nozzle Size	0.6 mm (recommended) / 0.4 mm / 0.8 mm
Compatible Plate Type	Smooth / Textured PEI Plate or other plate
Plate Surface Preparation	Apply liquid glue or PVP solid glue stick if the first layer bonding is not firm enough
Nozzle Temperature	280 - 310 °C
Bed Temperature	100 - 120 °C
Fan Speed	0 - 40%
Max Print Speed	250 mm/s

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