IPCON FILA™ PPA

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	365 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	1.14 g/cm³
Saturated Water Absorption Rate	25 °C，55% RH，room air	1.32%
Melt Index	290 °C，2.16 kg	15.6 g/ 10 min
Melting Temperature	DSC，10 °C/min	246 °C
Vicar Softening Temperature	ISO 306，GB/T 1633	106 °C；133 °C (annealed)
Heat Deflection Temperature	ISO 75，0.45 MPa	103 °C；131 °C (annealed)

Mechanical Properties*	Testing Methods	Data*
Tensile Strength XY	ISO 527，GB/T 1040	76 MPa
Tensile Strength Z	ISO 527, GB/T 1040	40 MPa
Young's Modulus XY	ISO 527，GB/T 1040	2863 MPa
Young's Modulus Z	ISO 527，GB/T 1040	2677 MPa
Breaking Elongation Rate XY	ISO 527，GB/T 1040	3.4%
Breaking Elongation Rate Z	ISO 527，GB/T 1040	1.6%
Flexural Strength XY	ISO 178，GB/T 9341	123 MPa
Flexural Strength Z	ISO 178，GB/T 9341	62 MPa
Flexural Modulus XY	ISO 178，GB/T 9341	2672 MPa
Flexural Modulus Z	ISO 178，GB/T 9341	2576 MPa
Impact Strength XY	ISO 179，GB/T 1043	32.8 kJ/m²
Impact Strength Z	ISO 179，GB/T 1043	5.4 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 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. Long-term heat resistance of 120 °C (after annealing); smooth surface and high precision; good strength and toughness; excellent moisture and creep-resistant; ultra-low warping; compatible with AMS or CFS; 4 basic colors: black, white, gray, and red.

2. Can be used to print bicycle accessories, temperature-resistant and humidity-resistant insulating parts for automobiles, electronics and mechanical equipment, as well as high wear-resistant parts such as gears, slide rails, and shaft sleeves.

• Recommended Printing Settings

Drying Settings Before Printing	100 - 140 °C，6 - 8 h
Printing Temperature and Humidity	≤ 100 °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	Any common material
Compatible Nozzle Size	Any common size
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	180 mm/s

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