

Siraya Tech Fibreheart PPA

Black



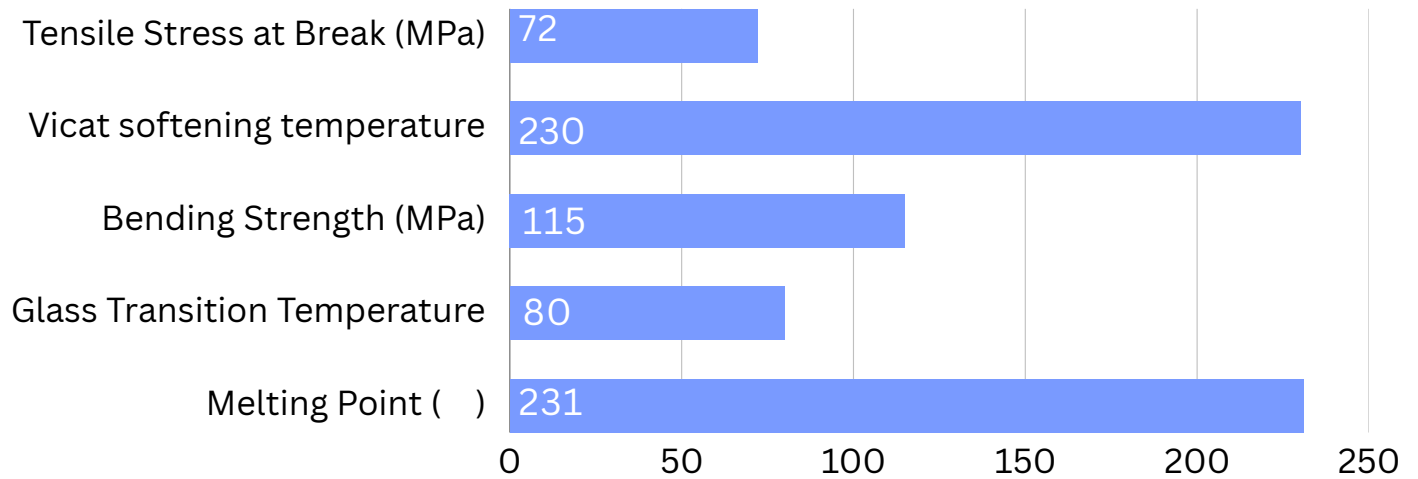
PRODUCT INTRODUCTION

- **Superior Material Properties:** High-temperature PPA with 1.2 g/cm³ density, low water absorption, 70 MPa tensile, and 114 MPa flexural strength, outperforming standard nylons.
- **Super Abrasive Resistance:** Low friction and self-lubricating, ideal for gears, bearings, and components under constant wear.
- **Superior Moisture Resistance:** PPA demonstrates significantly better moisture handling with a saturated moisture absorption rate of approximately one-fifth of PA6 and other Nylons.
- **Chemical and Heat Resistant:** Withstands chemicals and high temperatures, ideal for automotive, aerospace, and industrial applications.
- **Versatile Industrial Applications:** Perfect for prototypes and high-stress parts like gears and bearings in demanding engineering projects.
- **Annealable Filament for Enhanced Strength:** Annealing enhances durability, reduces stress, and improves dimensional stability for precise, high-performance engineering applications.

APPLICATIONS

- Automotive and aerospace components
- Industrial tooling and fixtures
- High-performance gears and bearings
- Chemical-resistant parts
- Functional prototypes requiring strength and precision

Property Data



Mechanical Properties	Measure	Method
Tensile Stress at Break (MPa)	72	ASTM D638
Young's Modulus (MPa)	3600	ASTM D638
Elongation at Break(%)	10.5	ASTM D638
Charpy impact strength (KJ/m ²)	10.1	ISO 179
Bending Strength (MPa)	115	ISO 178
Bending Modulus (MPa)	3350	ISO 178

Property Data

Other Properties	Measure	Method
Vicat softening temperature °C	230	ISO 306
Glass Transition Temperature	80	ASTM D3418
Shore Hardness D	82	ISO 7619
Melting Point (C)	231	ASTM D3418
HDT (Dry)	73.5°C/ 81°C	Method A/B (1.80/ 0.45 MPa)
HDT (Wet)	48.5°C/ 61°C	Method A/B (1.80/ 0.45 MPa)
Water Absorption Rate (%)	2.59	ISO 62
Filament Density g/cm ³	1.21	ISO 1183

Work Flow

Preparing for Printing

- Ensure proper bed adhesion using a PEI sheet or PVP glue coating to prevent warping.
- Use an enclosure to maintain consistent temperature and reduce potential warping, especially for larger prints.
- Implement proper cooling strategies, adjusting fan speed based on part geometry and size.
- For complex geometries, consider using soluble support materials compatible with high-temperature printing.
- Post-processing may include annealing to further enhance mechanical properties and heat resistance.
- Always handle the printed parts with care, as they may have sharp edges or be hot immediately after printing.
- Annealing is not recommended given it can warp the print.

Print Setting for Fibreheart PPA

- Hardware Requirements:
- Nozzle: High quality metal nozzle, harden steel nozzle is not needed;
- Nozzle Diameter: 0.4-1.0mm;
- Bed Surface: PEI with Glue Stick or PVP glue coating.
- For Bambu's printer, you can download the print setting [here](#)

Work Flow

- Recommended Print Parameters:

Nozzle Temperature	280-300°C
Bed Temperature	70-80°C
Cooling Fans	20-60%
Layer Height	0.2mm (recommended)
Raft Separation Distance	0.12-0.16mm
Print Speed	30-120mm/s
Support Material	Compatible with quick-release support materials
Retraction Distance	1-3mm
Retraction Speed	1800-3600mm/min

Moisture Management

- Storage**

- (1) Store in a dry box with relative humidity below 15%
- (2) Dry in oven at 80-100°C for 4-6 hours

- Handling: If moisture contamination occurs (indicated by oozing, bubbles, or rough surface finish):**

- (1) Dry in oven at 80-100°C for 4-6 hours
- (2) Only perform drying when moisture symptoms are present

Contact US

- If you have any questions, please feel free to contact our support at support@siraya.tech.
- You can also post in the [Siraya Tech Facebook user group](#), where many enthusiastic and experienced experts will also help you. We will also reply to the post, which can also help other printers with the same problem.