ePAHT-CF

Technical Data Sheet

A material based on PA6 developed by eSUN and LUVOCOM, added 15% high-rigidity carbon fiber, high-strength, high-rigidity, mechanical and thermal properties are higher than other eSUN nylon series products; it can be substituted in many occasions ; the continuous use temperature of the parts can reach 150℃, and the short-term use temperature can reach 180℃; the surface resistance is less than $10^2\Omega$, which can be used as conductive and antistatic materials; low shrinkage, not easy to warp and crack during printing, the surface of the printed item Matte and delicate.

Material Status	Mass Production
Characteristics	• High strength • High impact resistance • Abrasion resistance • Excellent printability • High toughness • Chemical resistancet • Matte surface effect • High rigidity • Heat resistance • Antistatic
Applications	• Machinery • Electrical and electronic • Drone • Textile • Chemical industry • Robot • Automobile • Aerospace
Form	• Filament
Processing method	• 3D Print, FDM Print

	Testing method	Typical value
Physical Properties		
Density	GB/T 1033	1.4 g/cm³
Melt Flow Index	GB/T 3682	19.68 (270℃/2.16kg)
Mechanical Properties		
Tensile Strength	GB/T 1040	173.37 MPa
Elongation at Break	GB/T 1040	8.93 %
Flexural Strength	GB/T 9341	171.64 MPa
Flexural Modulus	GB/T 9341	5612.41 MPa
IZOD Impact Strength	GB/T 1843	12.74 kJ/㎡
Thermal Properties		
Heat distortion Temperature	GB/T 1634	190 (℃,0.45MPa)
Continuous Service Temperature	UL 746B	150 ℃
Maximum (short term) Use Temperature		180 ℃
Electrical Properties		
Insulation Resistance	DIN IEC 60167	$\leqslant 10^2$ Ω
Surface Resistance	DIN IEC 60093	$< 10^2$ Ω

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Recommended printing parameters

Extruder Temperature	260 - 300°C
Build Platform Temperature	45-60°C
Fan Speed	0%
Printing Speed	40 - 100mm/s

Based on 0.4 mm nozzle and Simplify 3D v.4.1.2. Printing conditions may vary with different nozzle diameters

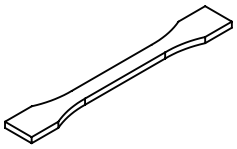
Drying Recommendations

N/A

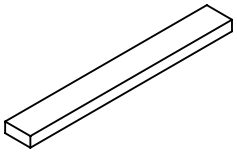
Notes

1. ePAHT-CF needs to be dried (70°C/＞12H) before printing to achieve the best printing effect. It is recommended to use it with the eBOX cartridge when printing.
2. The ePAHT-CF line has strong rigidity and is not easy to bend. In the feeding pipe, excessive bending of the wire should be avoided as much as possible
3. ePAHT-CF is very easy to grind nozzles and extruder gears. It is recommended to use hardened steel nozzles or ruby nozzles. If conditions permit, you can choose hardened steel extruder gears. If the printing time is long, you need to replace the throat and nozzles.
4. It is recommended to set the skirt to make it better for taking the model from the forming plate.

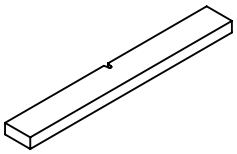
Mechanical Properties



Tensile testing specimen GB/T 1040



Flexural testing specimen GB/T 9341



Impact testing specimen GB/T 1043

The physical properties, mechanical properties, thermal properties, and electrical properties of the filament are obtained based on the injection molding spline test.

Print test condition：

Extruder Temperature	240-300°C
Build Platform Temperature	80°C
Outline/Perimeter Shells	4
Top/Bottom Layers	4
Infill Percentage	20%
Fan speed	0%
Printing speed	40mm/s

Based on 0.4 mm nozzle and Simplify 3D v.4.1.2.

Notice

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