ePA-GF

Technical Data Sheet

The printing consumables developed based on nylon 6/66 copolymers are added with 25% glass fiber, which greatly enhances the strength and rigidity of nylon, and can be used as a substitute for metal in many occasions; self-lubricating and wear-resistant properties make it suitable for printing gears; strong toughness and impact resistance, can be used to print durable parts; high temperature resistance, heat distortion temperature up to 120 ℃; low shrinkage, not easy to warp and crack during printing, the surface of the printed items is matte and delicate.

Material Status	Mass Production
Characteristics	• Heat resistance • High strength • High rigidity • High impact resistance • Abrasive resistance • High dimensional stability • Matte surface effect • Excellent printability
Applications	• Machinery • Automobile • Chemical industry • Electrical and electronic
Form	• Filament
Processing method	• 3D Print, FDM Print

	Testing method	Typical value
Physical Properties		
Density	GB/T 1033	1.35 g/cm³
Melt Flow Index	GB/T 3682	1.45 (220℃/2.16kg
Mechanical Properties		
Tensile Strength	GB/T 1040	76.93 MPa
Elongation at Break	GB/T 1040	21.07 %
Flexural Strength	GB/T 9341	77.75 MPa
Flexural Modulus	GB/T 9341	1714.63 MPa
IZOD Impact Strength	GB/T 1843	14.68 kJ/㎡
Thermal Properties		
Heat distortion Temperature	GB/T 1634	120 (℃,0.45MPa)
Continuous Service Temperature	IEC 60216	N/A
Maximum (short term) Use Temperature		N/A
Electrical Properties		
Insulation Resistance	DIN IEC 60167	N/A
Surface Resistance	DIN IEC 60093	N/A

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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

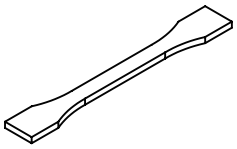
Drying Recommendations

N/A

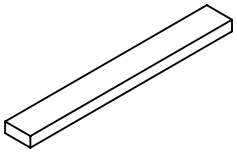
Notes

1. ePA-GF needs to be dried (70℃/＞12H) before printing to achieve the best printing effect. It is recommended to use it with the eBOX cartridge when printing.
2. The ePA-GF 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. ePA-GF 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, the throat and nozzles need to be replaced.
4. It is recommended to set the skirt to make it better for taking the model from the forming plate.

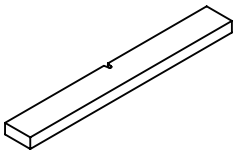
Mechanical Properties



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.

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