

ePA-CF

Technical Data Sheet

Developed based on nylon 6/66 copolymer, adding 20% carbon fiber greatly enhances the strength, rigidity and toughness of nylon, and can replace metal materials in many occasions; Self-lubricating wear resistance makes it suitable for printing gears; High toughness and impact resistance make it suitable for printing durable parts. High temperature resistance, heat deformation temperature up to 155°C; Low shrinkage, it is not easy to warp and crack when printing, and the surface of printed models is matte and delicate.

Material Status	Mass Production		
Characteristics	<ul style="list-style-type: none"> Heat resistance High-intensity High rigidity 	<ul style="list-style-type: none"> High toughness High impact resistance Abrasive resistance 	<ul style="list-style-type: none"> High dimensional stability Matte surface effect Excellent printability
Applications	<ul style="list-style-type: none"> Machinery Automobile 	<ul style="list-style-type: none"> Aerospace Electrical and electronic 	
Form	<ul style="list-style-type: none"> Filament 		
Processing method	<ul style="list-style-type: none"> 3D Print, FDM Print 		

	Testing method	Typical value	
Physical Properties			
Density	GB/T 1033	1.24	g/cm ³
Melt Flow Index	GB/T 3682	11.46	(275°C/5kg)
Mechanical Properties			
Tensile Strength	GB/T 1040	140	MPa
Elongation at Break	GB/T 1040	10.61	%
Flexural Strength	GB/T 9341	140	MPa
Flexural Modulus	GB/T 9341	4363	MPa
IZOD Impact Strength	GB/T 1843	18.67	kJ/m ²
Thermal Properties			
Heat distortion Temperature	GB/T 1634	155	(°C,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

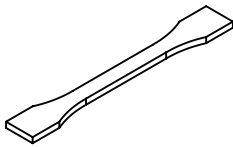
Drying Recommendations

N/A

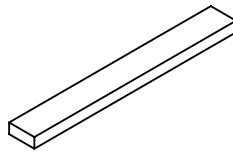
Notes

1. Dry the filaments (70°C/> 12h) before printing to achieve the best printing effect. It is recommended to use them together with eBOX when printing.
2. ePA-CF filament has strong rigidity and is not easy to bend. In the feeding pipeline, excessive bending of filament should be avoided as much as possible.
3. ePA-CF is very easy to grind nozzles and extruder gears. It is recommended to use hardened steel nozzles or ruby nozzles. If possible, hardened steel extruder gears can be selected. If the printing time is long, the blockage will occur and the throat and nozzle need to be replaced.
4. It is suggested to set skirt edge to better take the model from the forming bottom plate.

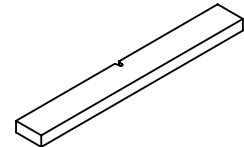
Mechanical Properties



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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