

CF-PA Technical Data Sheet(TDS)

CF-PA is a carbon fiber reinforced PA6 filament. The carbon fiber reinforcement provides significantly improved stiffness, strength, and heat resistance with outstanding layer adhesion.

PA filament is based on a copolymer of Nylon 6 and Nylon 6/6. The filament has excellent strength, toughness, and heat resistance of up to 160°C.

CF-PA is lighter than PA and maintain the same advantages.

Physical Properties	Methods	Value
Density	ISO 1183, GB/T1033	1.17 g/cm ³ at 21°C
Melt Index	300°C, 2.16Kg	20.5g/10 min
Light Transmission	N/A	N/A
Flame Retardancy V2	UL94	V2

Chemical Resistant Data	
Effect of weak acids	Not Resistant
Effect of strong acids	Not Resistant
Effect of weak alkalis	Slight Resistant
Effect of strong alkalis	Not Resistant
Effect of organic solvent	Not Resistant
Effect of oils and grease	Resistant
Effect of Sunlight	No data available

Mechanical Properties	Methods	Value
Glass transition	DSC, 10°C/min	74.2°C
Melting Temperature	DSC, 10°C/min	218.5°C
Crystallization Temperature	DSC, 10°C/min	184.6°C
Decomposition Temperature	TGA, 20°C/min	>370°C
Vicat softening Temperature	ISO 306 GB/T 1633	N/A
Heat deflection Temperature	ISO 75 1.8 MPa	173°C
Heat deflection Temperature	ISO 75 0.45MPa	215°C
Thermal conductivity	N/A	N/A
Heat shrinkage rate	N/A	N/A

Dry State

Property	Testing Method	Typical Value
Young's modulus (X-Y)	ISO 527, GB/T 1040	7453±656 MPA
Young's modulus (Z)		4354±206 MPA
Tensile Strength (X-Y)	ISO 527, GB/T 1040	105±5.0 MPA
Tensile Strength (Z)		67.7± 4.7 MPA
Elongation at break (X-Y)	ISO 527, GB/T 1040	3.0 ± 0.3 %
Elongation at break (Z)		2.5 ± 0.7 %
Bending modulus (X-Y)	ISO 178, GB/T 9341	8339±369 MPA
Bending modulus (Z)		N/A
Bending Strength (X-Y)	ISO 178, GB/T 9341	169± 4.7 MPA
Bending Strength (Z)		N/A
Charpy impact strength (X-Y)	ISO 178, GB/T 9341	13.34±0.5kj/m ²
Charpy impact strength (Z)		N/A

Moisture Condition

Property	Testing Method	Typical Value
Young's modulus (X-Y)	ISO 527, GB/T 1040	5666 ± 469 MPA
Young's modulus (Z)		4713 ±282 MPA
Tensile Strength (X-Y)	ISO 527, GB/T 1040	81.7±6.0 MPA
Tensile Strength (Z)		64.4± 5.6 MPA
Elongation at break (X-Y)	ISO 527, GB/T 1040	4.6±0.5 %
Elongation at break (Z)		1.8±0.4 %
Bending modulus (X-Y)	ISO 178, GB/T 9341	6387±1120 MPA
Bending modulus (Z)		N/A
Bending Strength (X-Y)	ISO 178, GB/T 9341	152.2±15.7 MPA
Bending Strength (Z)		N/A
Charpy impact strength (X-Y)	ISO 178, GB/T 9341	32.8±1.03kj/m ²
Charpy impact strength (Z)		N/A

Print Recommendation	
Printing Temperature	300° C
Bed Temperature	50-70° C
Print Speed	30-60 mm/s
Chamber Temperature	50 (° C)
Cooling Fan	OFF