

EP099306BK001-TDS

COCOON PET-Cactus(HTCF)

COCOON PET-Cactus(HTCF) is a carbon fiber reinforced, heat-resistant material, offering an "enhanced, heat-resistant" solution for 3D printed PET. It boasts a heat deflection temperature of up to 200°C without the need for annealing or waiting. This material also exhibits high heat resistance, high strength, high stiffness, and high creep resistance, along with good fluidity and stable extrusion performance. The printed products have a matte and sand-like smooth surface, with high heat resistance and mechanical strength. They are waterproof, have excellent chemical resistance, and combine outstanding mechanical properties with good dimensional stability, making them widely applicable in functional components, load-bearing structures, and auxiliary tooling fixtures for 3D printing scenarios involving long-term loads.

Part 1 Injection-Molded Specimen Performance

Testing Items	Testing Conditions	Testing Methods	Units	Typical Values
Physical Properties				
Density	23°C	GB/T 1033	g/cm ³	1.37
Melt Volume Rate	250°C, 2.16kg	GB/T 3682	g/10min	18
Mechanical Properties				
Tensile Strength	5mm/min	GB/T 1040.2	MPa	90
Elongation @ Break	5mm/min	GB/T 1040.2	%	4
Flexural Strength	2mm/min	GB/T 9341	MPa	130
Flexural Modulus	2mm/min	GB/T 9341	MPa	6600
Izod Impact Strength	1J	GB/T 1843	kJ/m ²	5

Note: The typical physical properties are not intended for use as sales specifications.

Part 2 Printed Specimen Performance

Testing Items	Testing Conditions	Testing Methods	Units	Typical Values
Mechanical Properties				
Tensile Strength(X-Y)	50mm/min	GB/T 1040.2	MPa	98
Tensile Modulus(X-Y)	50mm/min	GB/T 1040.2	MPa	6000
Tensile Strength(Z)	50mm/min	GB/T 1040.2	MPa	32
Tensile Modulus(Z)	50mm/min	GB/T 1040.2	MPa	1800
Flexural Strength	2mm/min	GB/T 9341	MPa	138
Flexural Modulus	2mm/min	GB/T 9341	MPa	6200
Impact Strength, Notched	2.75J	GB/T 1843	kJ/m ²	10
Thermal Property				
HDT	0.45MPa	GB/T 1634	°C	200

Note: All specimens are printed under the following conditions: nozzle temperature = 300°C, printing speed = 105 mm/s, build plate temperature=110°C infill = 100%, nozzle diameter = 0.4mm.



Printing Path Direction of Specimen (Z)



Printing Path Direction of Specimen (X-Y)

Part 3 Printing Guidelines

Parameters	Settings
Nozzle Temperature	280-320°C
Build Plate Temp.	100-120°C
Build Plate Material	Glass、PEI、Steel Spring Build Plate
Bottom Layer Printing Temp.	/
Enclosed-chamber Printing	Yes
Print Speed	60-150mm/s
Drying recommendations	80 °C in a hot air dryer for 4hours

Disclaimer:

The values provided in this data sheet are for reference and comparison purposes only. They should not be used for design specifications or quality control. Actual values may vary depending on printing conditions. The ultimate performance of printed parts depends not only on the material but also on the part design, environmental conditions, and printing conditions. The product specifications are subject to change without notice.

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