

# EP052506NC004-TDS

## COCOON PA-Birch(GF)

It is a 3D printing specialty filament primarily made from renewable natural plants, featuring high strength, high fluidity, low moisture absorption, low shrinkage, and low warping. Compared to traditional petroleum-based polyamides, its raw materials are renewable and offer better sustainability. Components printed with this material have excellent dimensional stability. This filament is suitable for printing structural parts with specific strength or environmental requirements, such as wind turbine blades, low-voltage electrical structural components, electric tools, gears, etc.

### Part 1 Injection-Molded Specimen Performance

Testing Items	Testing Conditions	Testing Methods	Units	Typical Values
Physical Properties				
Density	23°C	ISO 1183	g/cm <sup>3</sup>	1.23
Melt Flow Rate	235°C,2.16kg	ISO 1133	g/10min	7
Mechanical Properties				
Tensile Strength	5mm/min	ISO 527-1	MPa	125
Elongation @ Break	5mm/min	ISO 527-1	%	8
Flexural Strength	2mm/min	ISO 178	MPa	200
Flexural Modulus	2mm/min	ISO 178	MPa	5600
Impact Strength, Notched	1J	ISO 179-1	kJ/m <sup>2</sup>	15

*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	ISO 527-1	MPa	99
Tensile Strength(Z)	50mm/min	ISO 527-1	MPa	42
Flexural Strength	2mm/min	ISO 178	MPa	155
Flexural Modulus	2mm/min	ISO 178	MPa	4400
Impact Strength, Notched	2.75J	ISO 179-1	kJ/m <sup>2</sup>	16
Thermal Property				
Heat Deflection Temperature	1.8MPa	ISO 75-1	°C	180

*Note: All specimens are printed under the following conditions: nozzle temperature = 290°C, printing speed = 60 mm/s, build plate temperature=90°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	280-300°C
Build Plate Temp.	80-100°C
Build Plate Material	Glass、PEI、 Steel Spring Build Plate
Bottom Layer Printing Temp.	280-300°C
Enclosed-chamber Printing	yes
Print Speed	40-70mm/s
Drying recommendations	100-120 °C in a hot air dryer for 6-8hours



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.

Each user is responsible for determining the safety, legality, technical suitability, and disposal/recycling of the intended use. Unless otherwise stated, POLYFUL makes no warranties of any kind, express or implied, regarding the suitability of its materials for any use or application. POLYFUL shall not be liable for any damages, injuries, or losses caused by the use of POLYFUL materials in any application.