PolyCore PETG-1000

Technical Data Sheet (Ver. 1.0, last updated: Fab., 2020)

PolyCore PETG-1000 is cost-effective PETG pellets, it features good printability, large overhang angles and environmental friendliness, designed for Medium Area Additive Manufacturing (MAAM) and Big Area Additive manufacturing (BAAM) technology.

Physical Properties

Property	Testing Method	Typical Value
Density (g/cm^3 at 21.5 °C)	ASTM D792 (ISO 1183, GB/T 1033)	1.3
Melt index (g/10 min)	220 °C, 2.16 kg 240 °C, 2.16 kg	4 11
Glass transition temperature (°C)	DSC, 10 °C/min	81
Vicat Softening temperature[1] (°C)	ASTM D1525 (ISO 306 GB/T 1633)	84
Heat Deflection Temperature (°C)	ASTM D648 1.8MPa 0.45MPa	62 70

Mechanical Properties[1]

Property	Testing Method	Typical Value
Tensile strength (MPa)	ASTM D638 (ISO527, GB/T 1040)	50 ± 1.1
Elongation at break (%)	ASTM D638 (ISO527, GB/T 1040)	4.5 ± 0.9
Bending modulus (MPa)	ASTM D790 (ISO 178, GB/T 9341)	2150 ± 64
Bending strength (MPa)	ASTM D790 (ISO 178, GB/T 9341)	71 ± 2.4
Charpy Impact strength (kJ/m^2)	ASTM D256 (ISO 179, GB/T 1043)	5.1 ± 0.3

1. Tested with injection molding specimens

Mechanical Properties[1]

Property	Testing Method	Typical Value
Bending modulus (MPa) (X - Y)	Modified ASTM D790 (ISO 178, GB/T 9341)	1576 ± 140
Bending strength (MPa) (X - Y)	Modified ASTM D790 (ISO 178, GB/T 9341)	77.3 ± 8.7
Bending modulus (MPa) (Z)	Modified ASTM D790 (ISO 178, GB/T 9341)	1480 ± 84
Bending strength (MPa) (Z)	Modified ASTM D790 (ISO 178, GB/T 9341)	75.3 ± 3.9
Charpy Impact strength (kJ/m^2) (Z)	Modified ASTM D256 (ISO 179, GB/T 1043)	8.2 ± 1.0

1. Tested with the specimens printed under the following conditions:

Nozzle temperature = 220°C, printing speed = 10 ~ 15kg/h, Nozzle Diameter: 8.0mm, 100% solid specimens

Recommended Printing Conditions[1]

Parameter	Recommended Setting
Drying temperature (°C)	70
Drying Time (h)	8
Maximum moisture content (%)	0.54
Barrel – zone 1 temperature (°C)	170 - 190
Barrel – zone 2 temperature (°C)	220 - 240
Barrel – zone 3 temperature (°C)	220 - 240
Nozzle temperature (°C)	210 - 230
Bed temperature (°C)	Room temperature - 70

Other Comments

- It is recommended to stop feeding and continue extruding until the extruder is fully empty, if the printing stops in a short term, such as 10-30 min
- It is recommended to stop feeding and continue extruding until the extruder is fully empty, then use polyethylene (PE) to clean the extruder, if the printing stop in a long term, such as several hours. It is helpful to avoid the carbonization of material and keep extruder working in a good condition

Disclaimer

The typical values presented in this data sheet are intended for reference and comparison purposes only. They should not be used for design specifications or quality control purposes. Actual values may vary significantly with printing conditions. End-use performance of printed parts depends not only on materials, but also on part design, environmental conditions, printing conditions, etc. Product specifications are subject to change without notice.

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