PolyCore PETG-1013

Technical Data Sheet (Ver. 1.1, last updated: Mar, 2021)

PolyCore PETG-1013 is a glass fiber reinforced (30% mass percent) PETG pellets featured with excellent printability, warping resistance and weather resistance, designed for 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)	1.39
Glass transition temperature (°C)	DSC, 10 °C/min	81
Heat Deflection Temperature (°C)	ISO 75 1.8MPa 0.45MPa	77 82

Mechanical Properties[1]

Property	Testing Method	Typical Value
Bending modulus (MPa) (X - Y)	Modified ASTM D790 (ISO 178, GB/T 9341)	6094 ± 1344
Bending strength (MPa) (X - Y)	Modified ASTM D790 (ISO 178, GB/T 9341)	128.1 ± 7.8
Charpy Impact strength (kJ/m^2) (X - Y)	Modified ASTM D256 (ISO 179, GB/T 1043)	21.3 ± 0.92
Bending modulus (MPa) (Z)	Modified ASTM D790 (ISO 178, GB/T 9341)	2701 ± 366
Bending strength (MPa) (Z)	Modified ASTM D790 (ISO 178, GB/T 9341)	46.8 ± 3.3
Charpy Impact strength (kJ/m^2) (Z)	Modified ASTM D256 (ISO 179, GB/T 1043)	5.2 ± 1.3

1. Tested with the specimens printed under the following conditions: Nozzle temperature = 240 °C, printing speed = 12kg/h, Nozzle diameter: 7.0 mm, Shell width = 10mm, Layer height = 3mm, Layer time = 60s, Room temperature = 10°C ,100% solid specimens,

Recommended Printing Conditions

Parameter	Recommended Setting
Drying temperature (°C)	60-65
Drying Time (h)	8-12
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.

Each user is responsible for determining the safety, lawfulness, technical suitability, and disposal/recycling practices of Polymaker materials for the intended application. Polymaker makes no warranty of any kind, unless announced separately, to the fitness for any particular use or application. Playmaker shall not be made liable for any damage, injury or loss induced from the use of Polymaker materials in any particular application.