

## PolyCore PC-7413

Technical Data Sheet (Ver. 1.0, last updated: Nov, 2024)

PolyCore™ PC-7413 is specially engineered for medium-temperature composite molds & tools applications, supporting autoclave curing at temperature up to 120°C. It has undergone comprehensive validation, demonstrating exceptional performance at every stage of the process. This product features: excellent heat resistance, exceptional printability and costeffectiveness.

### Basic Properties

Property	Testing Method	Typical Value
Density (g/cm <sup>3</sup> at 21.5 °C)	ASTM D792 (ISO 1183, GB/T 1033)	1.36
Melt index (g/10 min)	300 °C, 1.2 kg	18.6
Glass transition temperature (°C)	DSC, 10 °C/min	141
Heat Deflection Temperature - °C, 1.82MPa - °C, 0.45MPa	ASTM D1525 (ISO 306, GB/T 1633)	136
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### Mechanical Properties<sup>1</sup>

Property	Testing Method	Typical Value
Young's modulus (MPa) (X-Y)	ASTM D638 (ISO 527, GB/T 1040)	4752 ± 175
Tensile strength (MPa) (X-Y)	ASTM D638 (ISO527, GB/T 1040)	74.6 ± 1.9
Elongation at break (%) (X-Y)	ASTM D638 (ISO527, GB/T 1040)	2.39 ± 0.14
Bending modulus (MPa) (X-Y)	ASTM D790 (ISO 178, GB/T 9341)	4939 ± 148
Bending strength (MPa) (X-Y)	ASTM D790 (ISO 178, GB/T 9341)	108.2 ± 2.7
Young's modulus (MPa) (Z)	ASTM D638 (ISO 527, GB/T 1040)	3077 ± 79
Tensile strength (MPa) (Z)	ASTM D638 (ISO527, GB/T 1040)	36.4 ± 1.0
Elongation at break (%) (Z)	ASTM D638 (ISO527, GB/T 1040)	1.2 ± 0.1
Bending modulus (MPa) (Z)	ASTM D790 (ISO 178, GB/T 9341)	3301 ± 33
Bending strength (MPa) (Z)	ASTM D790 (ISO 178, GB/T 9341)	51.6 ± 2.1

1. Tested with the specimens printed under following conditions:  
Nozzle temperature = 280°C, Nozzle diameter: 8mm, Shell width = 22mm, Layer height = 3mm, Layer time = 105s,  
Extrusion output = 7kg/h, Room temperature = 28°C, 100% solid specimens.

## Recommended Printing Conditions

Parameter	Recommended Setting
Drying temperature (°C)	100
Drying Time (h)	4
Maximum moisture content (%)	0.1
Barrel – zone 1 temperature (°C)	240
Barrel – zone 2 temperature (°C)	290
Barrel – zone 3 temperature (°C)	290
Nozzle temperature (°C)	280
Bed temperature (°C)	100 - 120
Other Comments	
<ul style="list-style-type: none"><li>● 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.</li><li>● 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</li></ul>	

## 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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