

PC-ABS

Physical Properties

Property	Testing method	Typical value
Density	ASTM D792 (ISO 1183, GB/T 1033)	1.1 (g/cm ³ at 21.5°C)
Melt index	260 °C, 5 kg	11-17 (g/10 min)
Vicat Softening temperature	ASTM D1525 (ISO 306 GB/T 1633)	135 (°C)
Glass transition temperature	DSC, 10 °C/min	109 (°C)

Tested with 3D printed specimen of 100% infill

Mechanical Properties

Property	Testing method	Typical value
Young's modulus (X-Y)	ASTM D638 (ISO 527, GB/T 1040)	1832 ± 65 (MPa)
Tensile strength (X-Y)	ASTM D638 (ISO 527, GB/T 1040)	39.9 ± 1.0 (MPa)
Elongation at break (X-Y)	ASTM D638 (ISO 527, GB/T 1040)	4.2 ± 0.3 (%)
Bending modulus (X-Y)	ASTMD790 (ISO 178, GB/T 9341)	2081 ± 106 (MPa)
Bending strength (X-Y)	ASTMD790 (ISO 178, GB/T 9341)	66.3 ± 1.3 (MPa)
Charpy impact strength (X-Y)	ASTM D256 (ISO 179, GB/T 1043)	25.8 ± 1.4 (kJ/m ²)
Young's modulus (Z)	ASTM D638 (ISO 527, GB/T 1040)	2297 ± 113 (MPa)
Tensile strength (Z)	ASTM D638 (ISO 527, GB/T 1040)	40 ± 2.2 (MPa)
Elongation at break (Z)	ASTM D638 (ISO 527, GB/T 1040)	3.3 ± 0.9 (%)
Charpy impact strength (Z)	ASTM D256 (ISO 179, GB/T 1043)	3.5 ± 0.2(kJ/m ²)
Charpy notched impact strength (X-Y)	ISO 179-1/1eA:2010, -30 °C	13 ± 2 (kJ/m ²)
Charpy notched impact strength (Z)	ISO 179-1/1eA:2010, -30 °C	1.5 ± 0.2 (kJ/m ²)

All testing specimens were printed under the following conditions:

nozzle temperature = 260 °C, printing speed = 60 mm/s, build plate temperature = 110 °C, infill = 100%, Chamber temperature = 80 °C

Specimens of low temperature charpy impact strength were printed under the following conditions:

nozzle temperature = 260 °C, printing speed = 60 mm/s, build plate temperature = 90 °C, infill = 100%, Chamber temperature = 90 °C

All specimens were conditioned at room temperature for 24h prior to testing