

## Technical Data Sheet

# Polymaker PC-PBT

[www.polymaker.com](http://www.polymaker.com)

V5.0



## Polymaker PC-PBT

Polymaker™ PC-PBT is a PC/PBT polymer blend which offers good heat resistance and toughness at low temperature (-20°C/-30°C). Polymaker™ PC-PBT also features good chemical resistance.

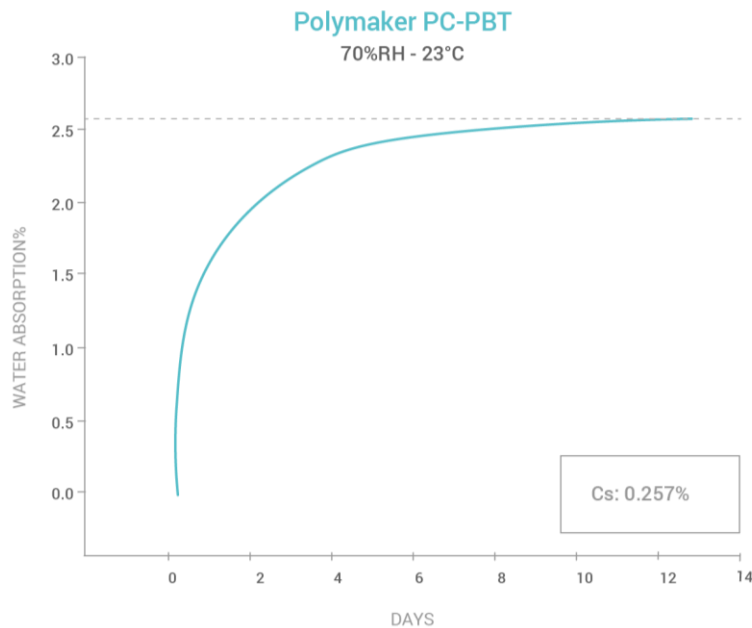
### PHYSICAL PROPERTIES

Property	Testing Method	Typical Value
Density	ISO1183, GB/T1033	1.2 g/cm <sup>3</sup> at 21°C
Melt Index	260°C, 5 kg	16-22 g/10min
Light Transmission	N/A	N/A
Flame retardancy V2	UL94	V2

### CHEMICAL RESISTANT DATA

Property	Testing Method
Effect of weak acids	Resistance
Effect of strong acids	Resistance
Effect of weak alkalis	Slight Resistant
Effect of strong alkalis	Not Resistant
Effect of organic solvent	Not Resistant
Effect of oils and grease	No data available
Effect of Sunlight	No data available

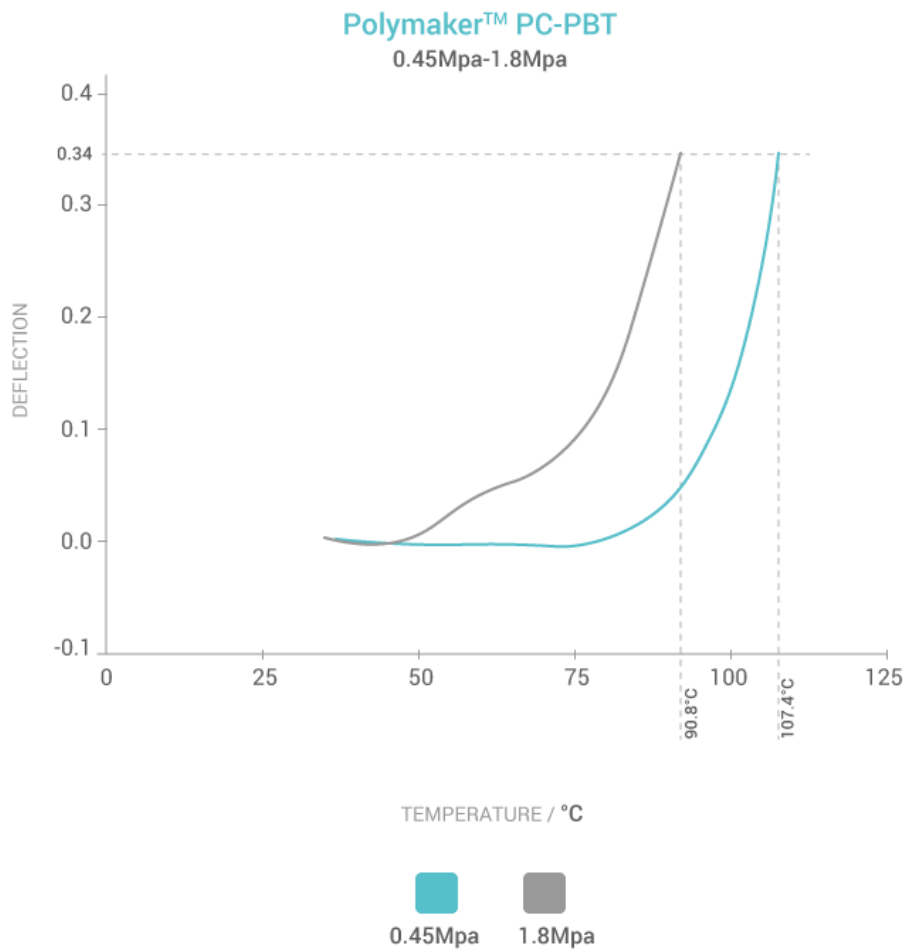
### MOISTURE ABSORPTION CURVE



## THERMAL PROPERTIES

Property	Testing Method	Typical Value
Glass transition	DSC, 10°C/min	140 °C
Melting temperature	DSC, 10°C/min	223 °C
Crystallization temperature	DSC, 10°C/min	186 °C
Decomposition temperature	TGA, 20°C/min	N/A
Vicat softening temperature	ISO 306 GB/T 1633	139 °C
Heat deflection temperature	ISO 75 1.8MPa	90.8 °C
Heat deflection temperature	ISO 75 0.45MPa	107.4 °C
Thermal conductivity	N/A	N/A
Heat shrinkage rate	N/A	N/A

## HDT CURVE



## MECHANICAL PROPERTIES

Property	Testing Method	Typical Value
Young's modulus (X-Y)	ISO 527, GB/T 1040	1986 ± 85 MPa
Young's modulus (Z)		2101 ± 193 MPa
Tensile strength (X-Y)	ISO 527, GB/T 1040	41.8 ± 0.9 MPa
Tensile strength (Z)		31.1 ± 0.8 MPa
Elongation at break (X-Y)	ISO 527, GB/T 1040	4.6 ± 0.7 %
Elongation at break (Z)		1.8 ± 0.3 %
Bending modulus (X-Y)	ISO 178, GB/T 9341	1933 ± 83 MPa
Bending modulus (Z)		N/A
Bending strength (X-Y)	ISO 178, GB/T 9341	66.4 ± 0.3 MPa
Bending strength (Z)		N/A
Charpy impact strength (X-Y)	ISO 179, GB/T 9343	21.4 ± 0.3 kJ/m <sup>2</sup>
Charpy impact strength (Z)		N/A
Low temperature impact strength (X-Y)	ISO 179-1/1eA:2010, -30°C	15 ± 3 kJ/m <sup>2</sup>
Low temperature impact strength (Z)	ISO 179-1/1eA:2010, -30°C	7.3 ± 2 kJ/m <sup>2</sup>

## HOW TO MAKE SPECIMENS

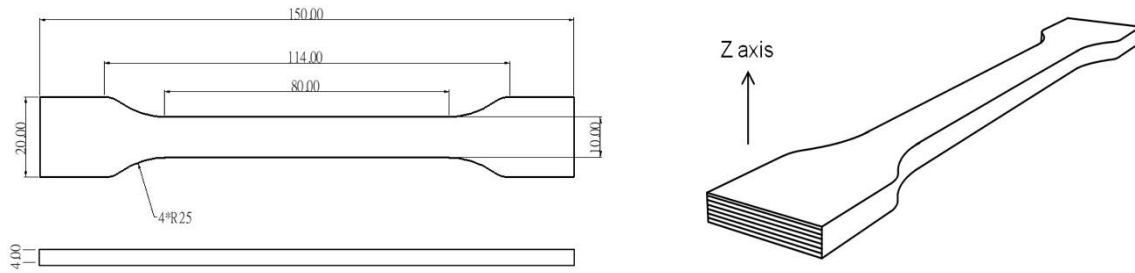
Printing temperature	260 °C
Bed temperature	110 °C
Shell	2
Top & bottom layer	4
Infill	100%
Environmental temperature	100 – 110 (recommended) (°C)
Cooling fan	OFF

### Note:

- When printing with Polymaker™ PC-PBT it is recommended to use an enclosure. For large part it is recommended to use a heated chamber.
- It is recommended to anneal the printed part right after the printing process to release the residual internal stress. Annealing settings: 90°C for 2h

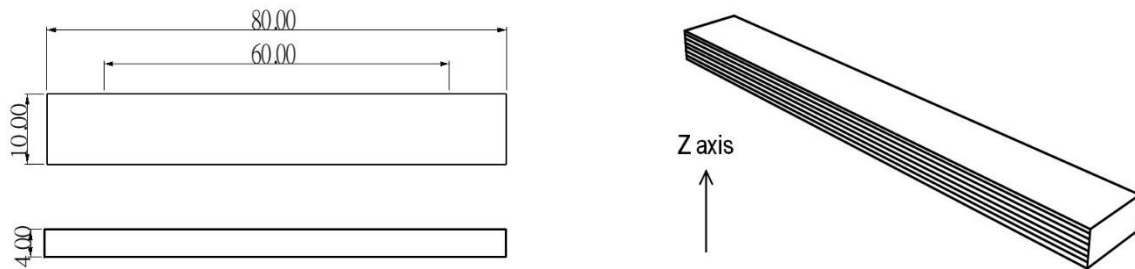
## TENSILE TESTING SPECIMEN

ASTM D638 (ISO 527, GB/T 1040)



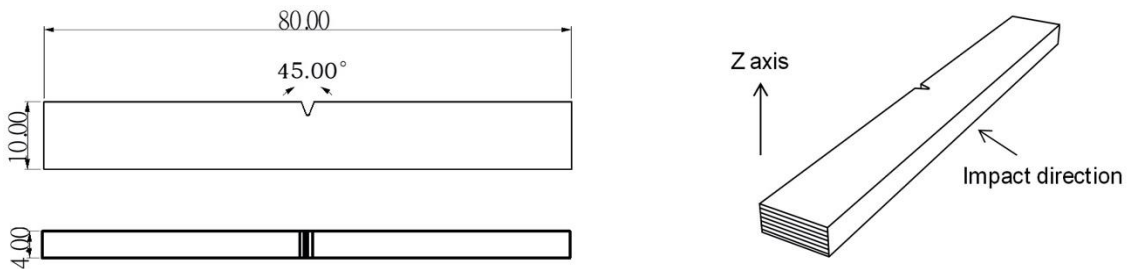
## FLEXURAL TESTING SPECIMEN

ASTM D638 (ISO 527, GB/T 1040)



## IMPACT TESTING SPECIMEN

ASTM D638 (ISO 179, GB/T 1043)



### 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 use or application. Polymaker shall not be made liable for any damage, injury or loss induced from the use of Polymaker materials in any application.