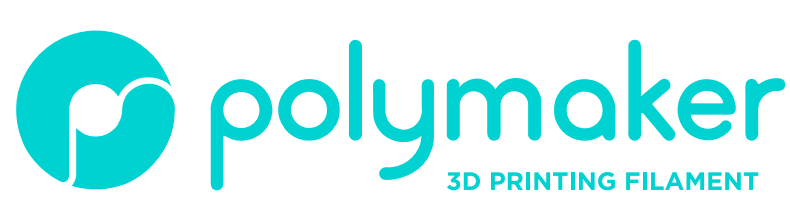


TECHNICAL DATA SHEET



V5.5



PolyMax™ PC

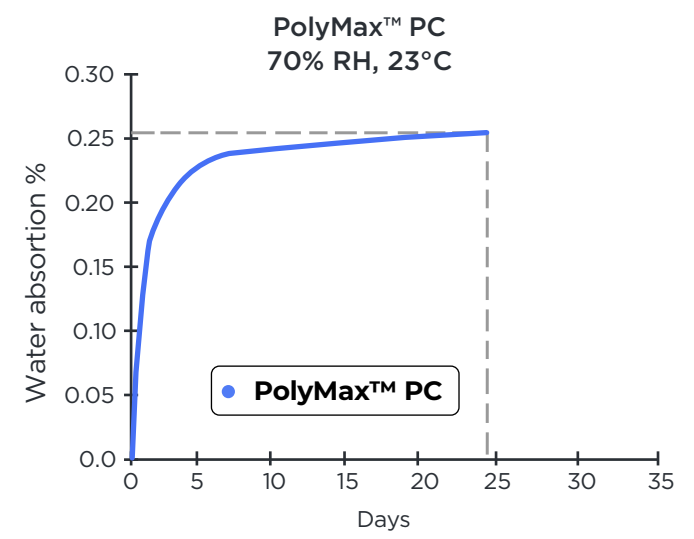
PolyMax™ PC is an engineered PC filament combining excellent strength, toughness, heat resistance and printing quality. It is the ideal choice for a wide range of engineering applications.

WWW.POLYMAKER.COM

PHYSICAL PROPERTIES

PROPERTY	TESTING METHOD	TYPICAL VALUE
Density	ISO1183, GB/T 1033	1.19 g/cm ³ at 23°C
Melt index	260°C, 1.2kg	6-8 g/10min
Light transmission	N/A	N/A
Light transmission	N/A	N/A

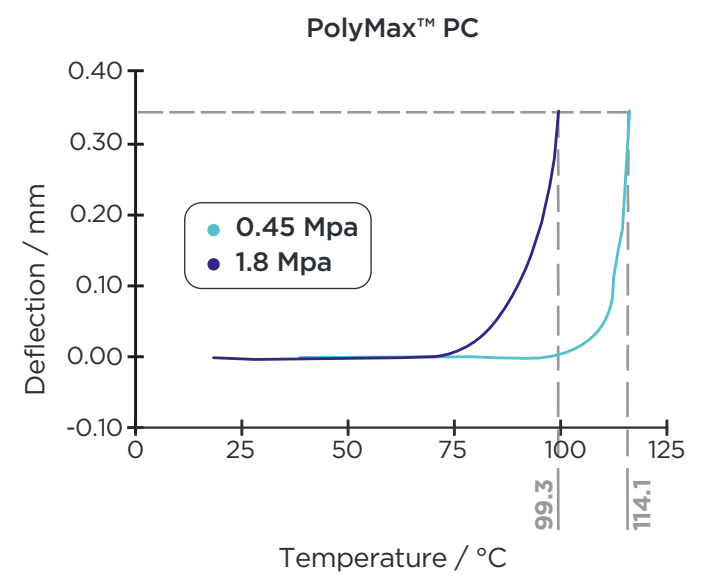
MOISTURE ABSORPTION CURVE



THERMAL PROPERTIES

PROPERTY	TESTING METHOD	TYPICAL VALUE
Glass transition temp.	DSC, 10°C/min	113°C
Melting temp.	DSC, 10°C/min	N/A
Crystallization temp.	DSC, 10°C/min	N/A
Decomposition temp.	TGA, 20°C/min	>360°C
Vicat softening temp.	ISO 306, GB/T 1633	117°C
Heat deflection temp.	ISO 75 1.8MPa	99°C
Heat deflection temp.	ISO 75 0.45MPa	114°C

HDT CURVE



MECHANICAL PROPERTIES

PROPERTY	TESTING METHOD	TYPICAL VALUE
Young's modulus (X-Y)	ISO 527, GB/T 1040	2435 ± 63 MPa
Young's modulus (Z)		2149 ± 119 MPa
Tensile strength (X-Y)	ISO 527, GB/T 1040	53.44 ± 0.60 MPa
Tensile strength (Z)		41.43 ± 1.50 MPa
Elongation at break (X-Y)	ISO 527, GB/T 1040	4.53 ± 0.45 %
Elongation at break (Z)		2.79 ± 0.21 %
Bending modulus (X-Y)	ISO 527, GB/T 1040	2050 ± 79 MPa
Bending modulus (Z)		N/A
Bending strength (X-Y)	ISO 527, GB/T 1040	81.29 ± 1.53 MPa
Bending strength (Z)		N/A
Notched charpy impact strength (X-Y)	ISO 179, GB/T 1043	21.28 ± 1.69 kJ/m ²
Low temp. impact strength (X-Y)	ISO 179-1 / 1eA:2010, -30°C	N/A

CHEMICAL RESISTANCE DATA

PROPERTY	TYPICAL VALUE
Effect of weak acids	Good
Effect of strong acids	Poor
Effect of weak alkalis	Fair
Effect of strong alkalis	Poor
Effect of oils and grease	Good

Good:
Material may get minor attack after long periods of storage with chemical at ambient temperature

Fair:
Material can be used for short time contact with chemicals at ambient temperature

Poor:
Material becomes unstable on contact with chemical at ambient temperature

RECOMMENDED PRINTING CONDITIONS

Nozzle temperature	250-270°C
Build plate temperature	90-105°C
Build surface treatment	PC and Textured PEI
Cooling fan	OFF
Closure chamber	Not needed (70°C-100°C)

Printing speed	50-200mm/s
Drying temp. and time	75°C/6H
Retraction distance	1-3 (mm)
Retraction speed	20-40 (mm/s)
Annealing setting	90°C/2H

*Based on 0.4mm nozzle. Printing conditions may vary with different nozzle diameters.

NOTE:
- When printing with PolyMax™ PC 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



PolySupport™
PolyDissolve™ S1
Recommended support material



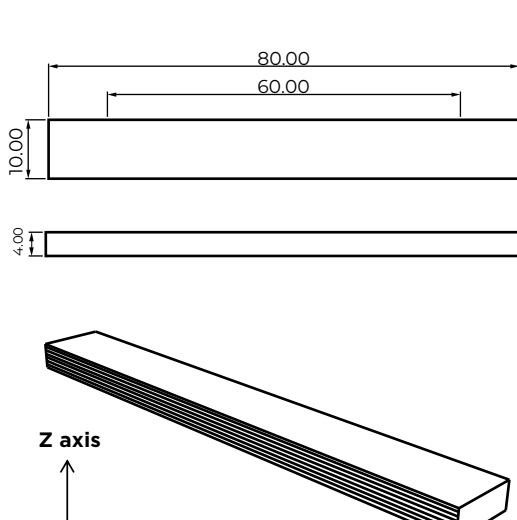
PolyBox™ or PolyDryer™ Box
Recommended storage for excellent printing quality

HOW TO MAKE SPECIMENS

Printing temperature	260°C	Infill	100%
Bed temperature	100°C	Shell	2
Top & bottom layer	3	Cooling fan	OFF
Environmental Temperature	90°C		

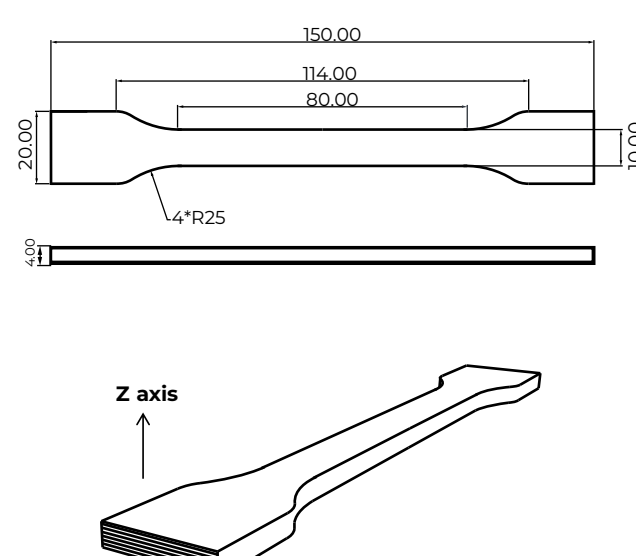
FLEXURAL TESTING SPECIMEN

ISO 178, GB/T 9341



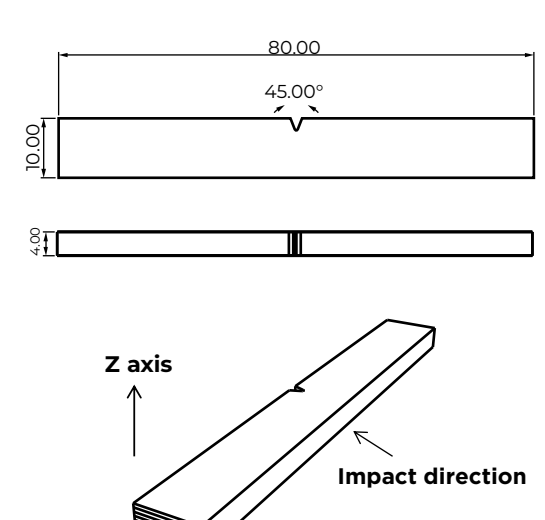
TENSILE TESTING SPECIMEN

ISO 527, GB/T 1040



IMPACT TESTING SPECIMEN

ISO 179, GB/T 1043



*Based on testing with PolyMax™ PC (SKU: PC02003)

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.