TECHNICAL DATA SHEET

V6.0

polymaker
3D PRINTING FILAMENT



Polymaker™ PLA Pro

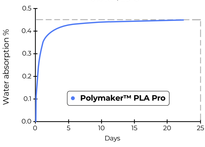
Polymaker™ PLA Pro combines exceptional toughness with fast print speeds to maximize productivity. Engineered for high impact resistance and PLA-easy printability, it produces durable, high-quality parts fast, ideal for prototypes and end-use applications where speed and strength matter most.

WWW.POLYMAKER.COM

PHYSICAL PROPERTIES

PROPERTY	TESTING METHOD	TYPICAL VALUE
Density	ISO1183, GB/T 1033	1.237 g/cm^3
Melt index	210°C, 2.16 kg	13.4 g/10min

MOISTURE ABSORPTION CURVE

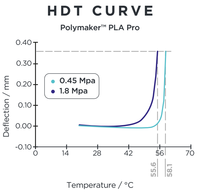


Equilibrium water absorption (%)= 0.449%

THERMAL PROPERTIES

PROPERTY	TESTING METHOD	TYPICAL VALUE
Glass transition temp.	DSC, 10°C/min	58.3°C
Melting temp.	DSC, 10°C/min	158.9°C
Crystalization temp.	DSC, 10°C/min	113.3°C
Decomposition temp.	TGA, 20°C/min	357.2°C
Vicat softening temp.	ISO 306, GB/T 1633	63.5°C
Heat deflection temp.	ISO 75 1.8MPa	55.6°C
Heat deflection temp.	ISO 75 0.45MPa	58.1°C

HDT CURVE



*Curve results are the average of 3 samples

MECHANICAL PROPERTIES

PROPERTY	TESTING METHOD	TYPICAL VALUE
Young's modulus (X-Y) Young's modulus (Z)	ISO 527, GB/T 1040	2531.08 ± 25.16 MPa 2265.58 ± 48.68 MPa
Tensile strength (X-Y) Tensile strength (Z)	ISO 527, GB/T 1040	39.93 ± 0.44 MPa 25.39 ± 0.45 MPa
Elongation at break (X-Y) Elongation at break (Z)	ISO 527, GB/T 1040	16.57 ± 6.18 % 3.05 ± 0.19 %
Bending modulus (X-Y) Bending modulus (Z)	ISO 178, GB/T 9341	2438.41 ± 78.20 MPa 2368.62 ± 61.58 MPa
Bending strength (X-Y) Bending strength (Z)	ISO 178, GB/T 9341	62.12 ± 0.78 MPa 49.96 ± 1.06 MPa
Notched charpy impact strength (X-Y)	ISO 179, GB/T 1043	20.76 ± 2.18 kJ/m^2
Un-notched charpy impact strength (X-Y) Un-notched charpy impact strength (Z)	ISO 179, GB/T 1043	51.7 ± 4.58 kJ/m^2 21.7 ± 2.22 kJ/m^2

CHEMICAL RESISTANCE DATA

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

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	210-230°C
Build plate temperature	30-60°C
Build surface treatment	PC and Textured PEI
Cooling fan	ON
Closure chamber	Not needed

Printing Speed	Up to 300mm/s
Drying temp. and time	55°C/6H
Retraction distance	1-3 (mm)
Retraction Speed	20-40 (mm/s)

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



PolySupport™ PolyDissolve™ S1

Recommended support material



PolyBox™ or PolyDryer™ Box

Recommended storage for excellent printing quality

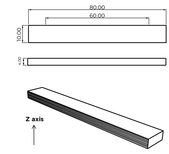
HOW TO MAKE SPECIMENS

Printing temperature	230°C
Bed temperature	60°C
Top & bottom layer	3
Environmental Temperature	24°C

Infill	100%
Shell	2
Cooling fan	100%

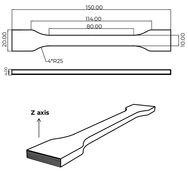
FLEXURAL TESTING SPECIMEN

ISO 178, GB/T 9341



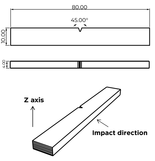
TENSILE TESTING SPECIMEN

ISO 527, GB/T 1040



IMPACT TESTING SPECIMEN

ISO 179, GB/T 1043



*Based on specimen printed on Bambu Lab P1S

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.