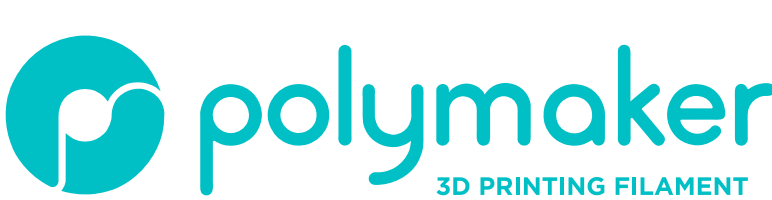


TECHNICAL DATA SHEET

V1.4



POLYMAKER™ HT-PLA Pro

Polymaker™ HT-PLA Pro is a tough PLA engineered for functional parts that need to survive real-world use. It prints as easily as standard PLA and keeps its shape in warm environments. Fast printing up to 300 mm/s, low warp and a consistent surface finish. For makers, engineers and print farms who need real durability without the printing complexity.

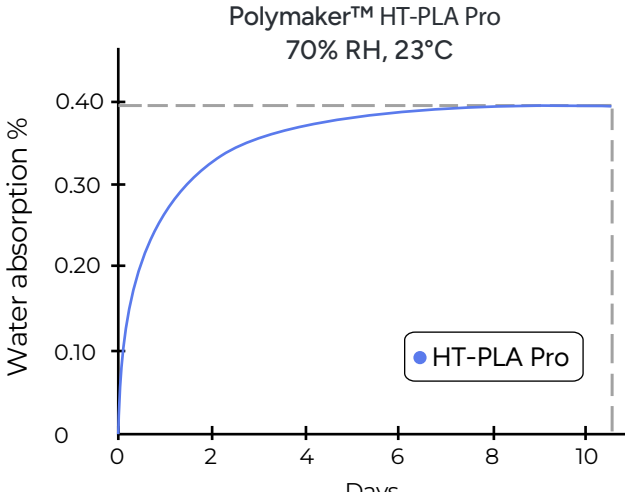
WWW.POLYMAKER.COM



PHYSICAL PROPERTIES

PROPERTY	TESTING METHOD	TYPICAL VALUE
Density	ISO 1183-1: 2015	1.24 g/cm ³ at 23°C
Melt index	ISO 1133-1: 2022 210°C, 2.16kg	24.43 g/10min

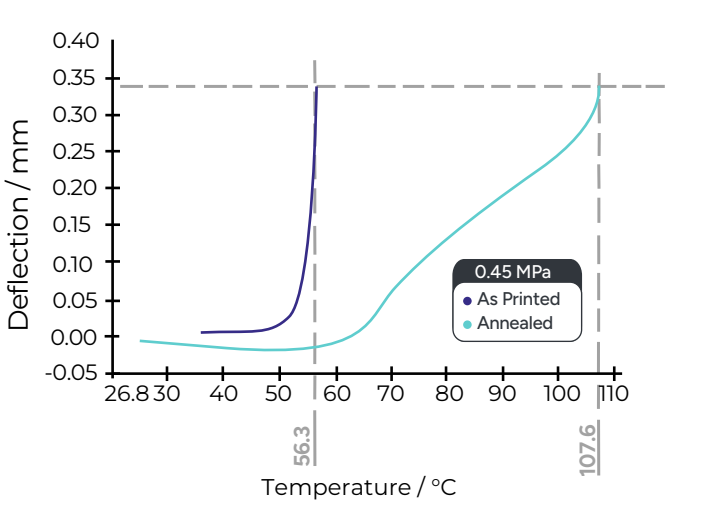
MOISTURE ABSORPTION CURVE



THERMAL PROPERTIES

PROPERTY	TESTING METHOD	TYPICAL VALUE
Glass transition temp.	ISO 11357-1: 2023 ISO 11357-2: 2020	59.15°C
Melting temp.	ISO 11357-1: 2023 ISO 11357-3: 2025	173.35°C
Crystallization temp.	ISO 11357-1: 2023 ISO 11357-3: 2025	129.98°C
Decomposition temp.	ISO 11358-1: 2022	320.14°C
Vicat softening temp.	ISO 306: 2022	148.3°C (as printed)
Heat deflection temp.	ISO 75-1: 2020 ISO 75-2: 2013 1.8MPa	53.8°C (as printed)
Heat deflection temp.	ISO 75-1: 2020 ISO 75-2: 2013 0.45MPa	56.3°C (as printed)
Vicat softening temp.	ISO 306: 2022	150.5°C (annealed)
Heat deflection temp.	ISO 75-1: 2020 ISO 75-2: 2013 1.8MPa	68.6°C (annealed)
Heat deflection temp.	ISO 75-1: 2020 ISO 75-2: 2013 0.45MPa	107.6°C (annealed)

HDT CURVE



MECHANICAL PROPERTIES (as printed)

PROPERTY	TESTING METHOD	TYPICAL VALUE
Young's modulus (X-Y)	ISO 527-1: 2019	2.27±0.05 GPa
Young's modulus (Z)	ISO 527-2: 2025	1.85±0.04 GPa
Tensile strength (X-Y)	ISO 527-1: 2019	37.6±1.1 MPa
Tensile strength (Z)	ISO 527-2: 2025	26.8±1.2 MPa
Elongation at break (X-Y)	ISO 527-1: 2019	13±3 %
Elongation at break (Z)	ISO 527-2: 2025	2.6±0.7 %
Bending modulus (X-Y)	ISO 178: 2019	2.21±0.14 GPa
Bending modulus (Z)	ISO 178: 2019	1.91±0.04 GPa
Bending strength (X-Y)	ISO 178: 2019	60.1±2.1 MPa
Bending strength (Z)	ISO 178: 2019	37.1±1.5 MPa
Notched charpy impact strength (X-Y)		9.94±1.43 kJ/m ²
Unnotched charpy impact strength (X-Y)	ISO 179-1: 2023	45.7±7.3 kJ/m ²
Unnotched charpy impact strength (Z)		10.3±2.1 kJ/m ²

MECHANICAL PROPERTIES (after annealing)

PROPERTY	TESTING METHOD	TYPICAL VALUE
Young's modulus (X-Y)	ISO 527-1: 2019	2.53±0.03 GPa
Young's modulus (Z)	ISO 527-2: 2025	1.94±0.16 GPa
Tensile strength (X-Y)	ISO 527-1: 2019	38.2±0.4 MPa
Tensile strength (Z)	ISO 527-2: 2025	25.0±1.5 MPa
Elongation at break (X-Y)	ISO 527-1: 2019	4.3±0.7 %
Elongation at break (Z)	ISO 527-2: 2025	1.9±0.4 %
Bending modulus (X-Y)	ISO 178: 2019	2.42±0.05 GPa
Bending modulus (Z)	ISO 178: 2019	2.02±0.03 GPa
Bending strength (X-Y)	ISO 178: 2019	65.0±0.7 MPa
Bending strength (Z)	ISO 178: 2019	34.8±0.3 MPa
Notched Impact Strength (X-Y)		10.1±1.3 kJ/m ²
Unnotched Impact Strength (X-Y)	ISO 179-1: 2023	38.7±8.0 kJ/m ²
Unnotched Impact Stength (Z)		7.15±1.15 kJ/m ²

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	230°C
Build plate temperature	25-65°C
Build surface treatment	PC and Texture PEI
Cooling fan	ON
Chamber temperature	Not Needed

Printing speed	Up to 300mm/s
Drying temp. and time	60°C/6H
Retraction distance (Direct Drive)	1-3 (mm)
Retraction Speed (Direct Drive)	20-40 (mm/s)

*Based on 0.4mm nozzle. Printing conditions may vary with different nozzle diameters.
NOTE: For higher temp. resistance, you can anneal this material for 30 mins. @ 100°C.



PolyBox™ or PolyDryer™ Box

NOTE

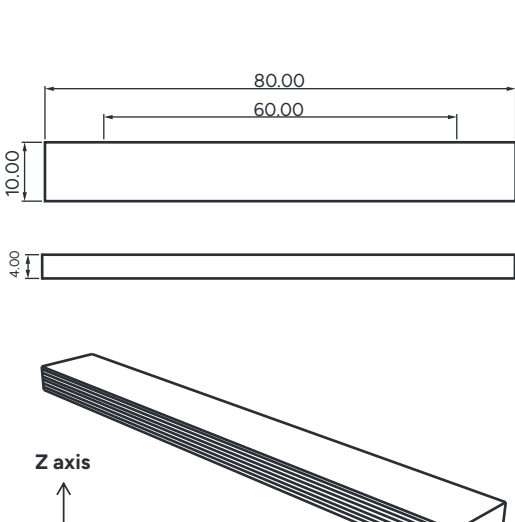
It is highly recommended to use the PolyBox™ or PolyDryer™ Box when printing or storing Polymaker™ HT-PLA Pro.

HOW TO MAKE SPECIMENS

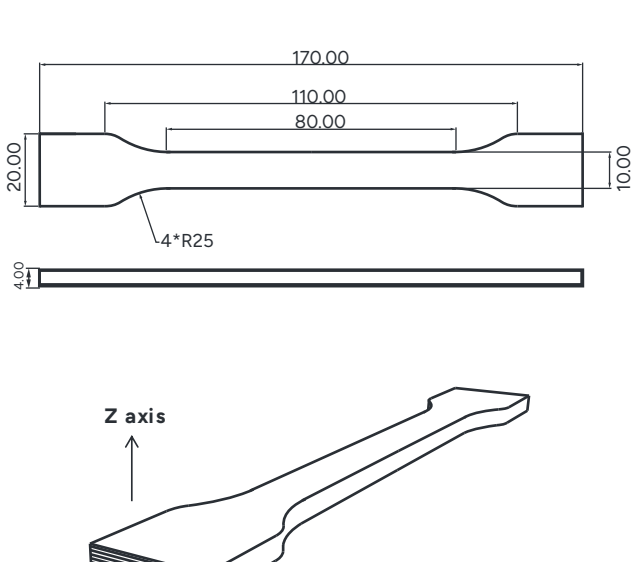
Printing temperature	230°C
Bed temperature	65°C
Top & bottom layer	3
Environmental Temperature	Ambient

Infill	100%
Shell	2
Cooling fan	ON

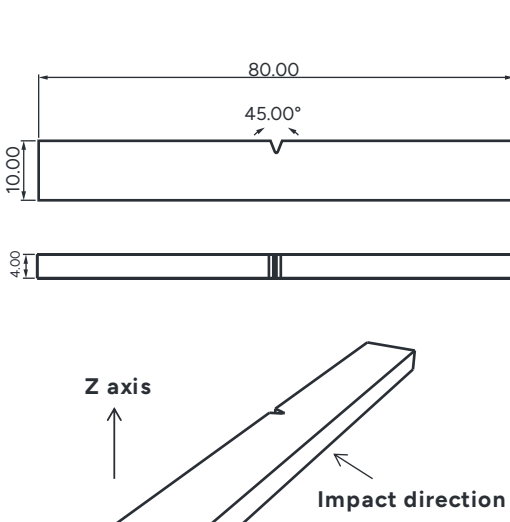
FLEXURAL TESTING SPECIMEN
ISO 178, GB/T 9341



TENSILE TESTING SPECIMEN
ISO 527, GB/T 1040



IMPACT TESTING SPECIMEN
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.