



Technical Data Sheet

PolyLite™ PLA

www.polymaker.com v5.0



PolyLite[™] PLA is a high-quality PLA designed for reliability and ease of printing.

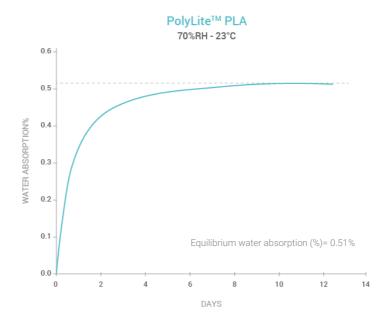
PHYSICAL PROPERTIES

Property	Testing Method	Typical Value
Density	ISO1183, GB/T1033	1.17 g/cm ³ at 23°C
Melt index	210°C, 2.16kg	7-11 g/10min
Light transmission	N/A	N/A
Flame retardancy	N/A	N/A

CHEMICAL RESISTANCE DATA

Property	Testing Method
Effect of weak acids	Not resistant
Effect of strong acids	Not resistant
Effect of weak alkalis	Not resistant
Effect of strong alkalis	Not resistant
Effect of organic solvent	No data available
Effect of oils and grease	No data available

MOISTURE ABSORPTION CURVE

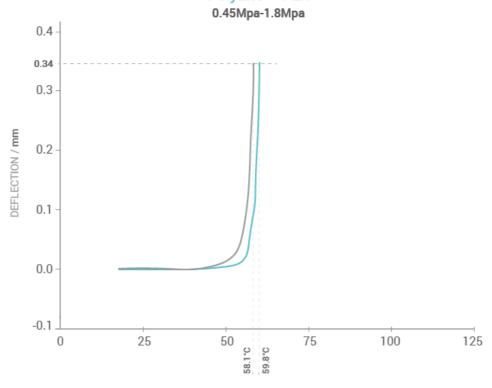


THERMAL PROPERTIES

Property	Testing Method	Typical Value
Glass transition temperature	DSC, 10°C/min	61 °C
Melting temperature	DSC, 10°C/min	150 °C
Crystallization temperature	DSC, 10°C/min	113.5 °C
Decomposition temperature	TGA, 20°C/min	N/A
Vicat softening temperature	ISO 306, GB/T 1633	62.9 °C
Heat deflection temperature	ISO 75 1.8MPa	58.1 °C
Heat deflection temperature	ISO 75 0.45MPa	59.8 °C
Thermal conductivity	N/A	N/A
Heat shrinkage rate	N/A	N/A

HDT CURVE





TEMPERATURE / °C



MECHANICAL PROPERTIES

Property	Testing Method	Typical Value
Young's modulus (X-Y)	100 F07 OD/T 1040	2636 ± 330 MPa
Young's modulus (Z)	ISO 527, GB/T 1040	N/A
Tensile strength (X-Y)	ISO 527, GB/T 1040	46.6 ± 0.9 MPa
Tensile strength (Z)		43.5 ± 3.1 MPa
Elongation at break (X-Y)	ISO 527, GB/T 1040	1.90 ± 0.21 %
Elongation at break (Z)		N/A
Bending modulus (X-Y)	ISO 178, GB/T 9341	3283 ± 132 MPa
Bending modulus (Z)	130 176, GB/1 9341	N/A
Bending strength (X-Y)	ISO 178, GB/T 9341	85.1 ± 2.9 MPa
Bending strength (Z)	130 176, GB/1 9341	N/A
Charpy impact strength (X-Y)	ISO 179, GB/T 1043	2.68 ± 0.16 kJ/m ²
Charpy impact strength (Z)	130 179, GB/1 1043	N/A

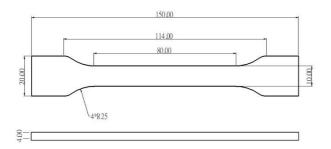
RECOMMENDED PRINTING CONDITIONS

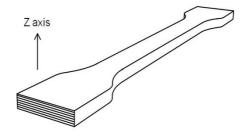
* Based on 0.4 mm nozzle and Simplify 3D v.4.0. Printing conditions may vary with different nozzle diameters

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Parameter	
Nozzle temperature	190 − 230 (°C)
Build surface material	BuildTak®, Glass, Blue Tape
Build surface treatment	Glue, Magigoo
Build plate temperature	25 - 60 (°C)
Cooling fan	ON
Printing speed	40-60 (mm/s)
Raft separation distance	0.2 (mm)
Retraction distance	1 (mm)
Retraction speed	20 (mm/s)
Environmental temperature	Room temperature
Threshold overhang angle	60 (°)
Recommended support material	PolySupport™ and PolyDissolve™ S1

TENSILE TESTING SPECIMEN

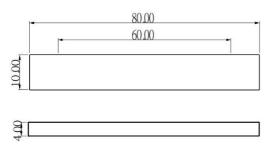
ISO 527, GB/T 1040

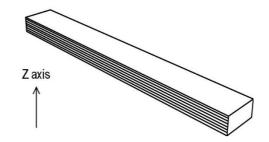




FLEXURAL TESTING SPECIMEN

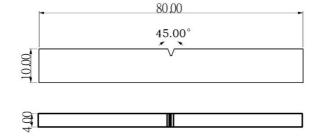
ISO 178, GB/T 9341

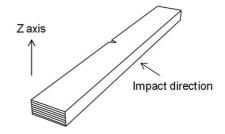




IMPACT TESTING SPECIMEN

ISO 179, GB/T 1043





HOW TO MAKE SPECIMENS

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

Printing temperature	205 °C
Bed temperature	40 °C
Shell	2
Top & bottom layer	4
Infill	100%
Environmental temperature	25 °C
Cooling fan	ON

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.