

Technical Data Sheet

PolyLite™ ASA

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V5.3



PolyLite™ ASA is an alternative to ABS with an improved weather resistance. Its UV resistance and excellent mechanical properties make it the perfect choice for real life applications.

PHYSICAL PROPERTIES

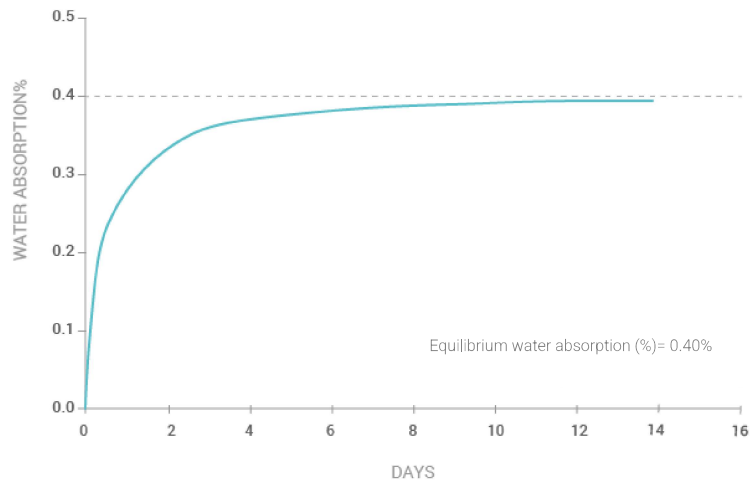
Property	Testing Method	Typical Value
Density	ISO1183, GB/T1033	1.13 g/cm ³ at 23°C
Melt index	220°C, 10 kg	25 g/10min
Light transmission	N/A	N/A
Flame retardancy	N/A	N/A

CHEMICAL RESISTANCE DATA

Property	Testing Method
Effect of weak acids	Resistant
Effect of strong acids	Slightly resistant
Effect of weak alkalis	Resistant
Effect of strong alkalis	Slightly resistant
Effect of organic solvent	Not resistant
Effect of oils and grease	Resistant

MOISTURE ABSORPTION CURVE

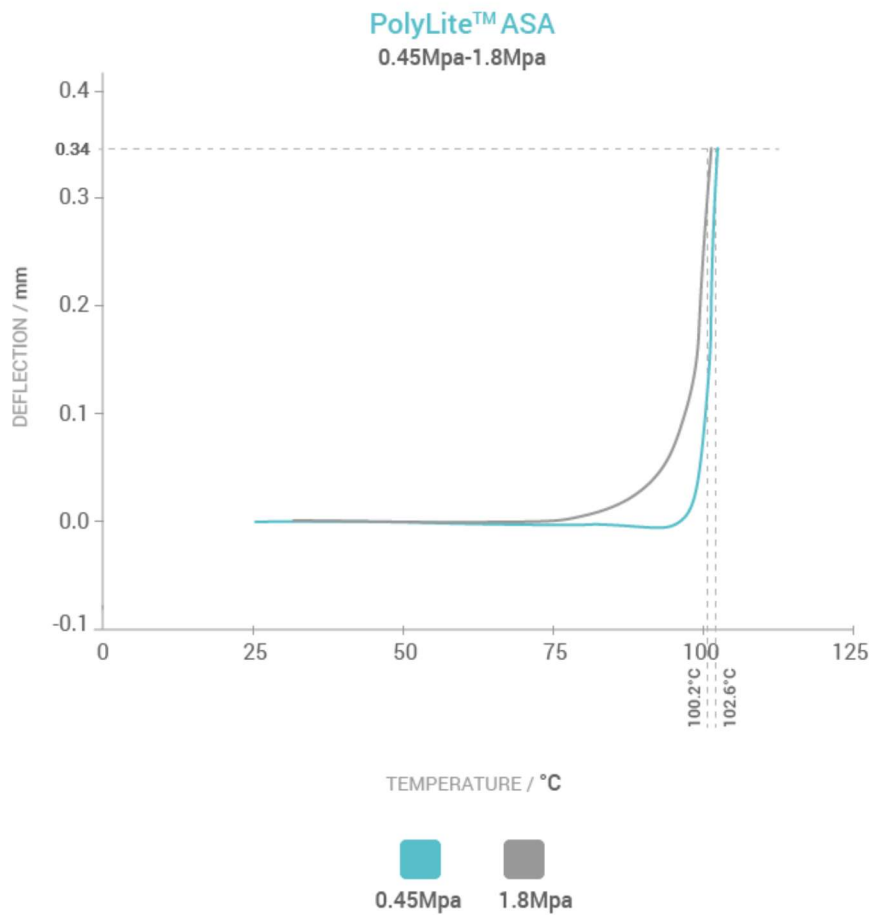
PolyLite™ ASA
70%RH - 23°C



THERMAL PROPERTIES

Property	Testing Method	Typical Value
Glass transition temperature	DSC, 10°C/min	97.8 °C
Melting temperature	DSC, 10°C/min	N/A
Crystallization temperature	DSC, 10°C/min	N/A
Decomposition temperature	TGA, 20°C/min	N/A
Vicat softening temperature	ISO 306, GB/T 1633	105.3 °C
Heat deflection temperature	ISO 75 1.8MPa	100.2 °C
Heat deflection temperature	ISO 75 0.45MPa	102.6 °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	2174.6 ± 41.1 MPa
Young's modulus (Z)		1971.6 ± 78.8 MPa
Tensile strength (X-Y)	ISO 527, GB/T 1040	38.6 ± 0.3 MPa
Tensile strength (Z)		30.0 ± 0.5 MPa
Elongation at break (X-Y)	ISO 527, GB/T 1040	4.4 ± 1.0 %
Elongation at break (Z)		2.4 ± 0.1 %
Bending modulus (X-Y)	ISO 178, GB/T 9341	1939.7 ± 50.4 MPa
Bending modulus (Z)		N/A
Bending strength (X-Y)	ISO 178, GB/T 9341	60.9 ± 0.9 MPa
Bending strength (Z)		N/A
Charpy impact strength (X-Y)	ISO 179, GB/T 1043	10.5 ± 0.6 kJ/m ²

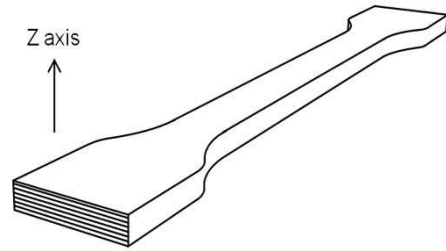
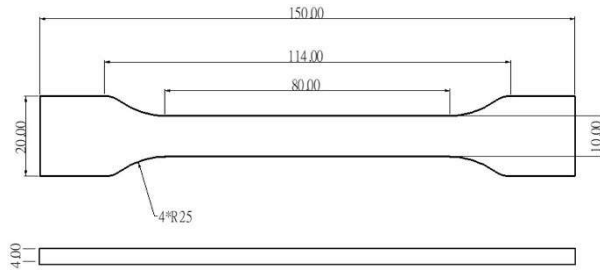
RECOMMENDED PRINTING CONDITIONS

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

Parameter	
Nozzle temperature	240 – 260 (°C)
Build surface material	BuildTak®
Build surface treatment	Magigoo
Build plate temperature	75 - 95 (°C)
Cooling fan	OFF
Printing speed	30-50 (mm/s)
Raft separation distance	0.2 (mm)
Retraction distance	1 (mm)
Retraction speed	20 (mm/s)
Environmental temperature	Room temperature - 90 (°C)
Threshold overhang angle	50 (°)
Recommended support material	PolyDissolve™ S2

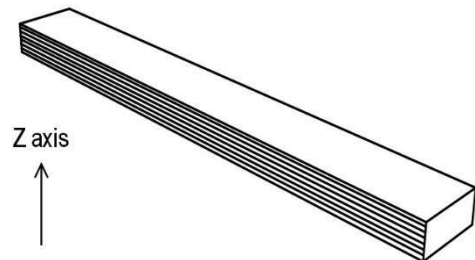
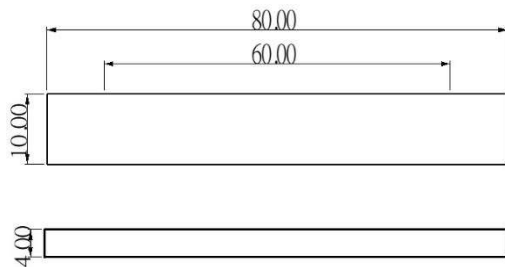
TENSILE TESTING SPECIMEN

ISO 527, GB/T 1040



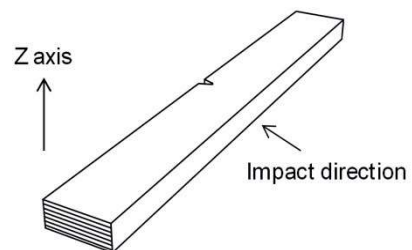
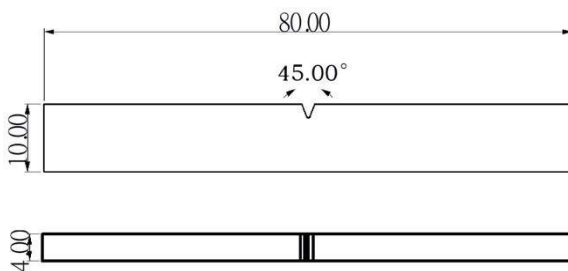
FLEXURAL TESTING SPECIMEN

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	260 °C
Bed temperature	80 °C
Shell	2
Top & bottom layer	4
Infill	100%
Environmental temperature	70 °C
Cooling fan	OFF

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.