TECHNICAL DATA SHEET

V6.0



PolySmooth™

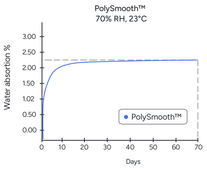
PolySmooth™ is a unique, easy-to-print filament designed for hands-free post processing. The surface can be smoothed with alcohol to achieve layer free models using the Polysher™.

WWW.POLYMAKER.COM

PHYSICAL PROPERTIES

PROPERTY	TESTING METHOD	TYPICAL VALUE
Density	ISO1183, GB/T1033	1.10 g/cm³ at 23°C
Melt index	210°C, 2.16kg	6.7 g/10min
Light transmission	N/A	N/A
Flame retardancy	N/A	N/A

MOISTURE ABSORPTION CURVE

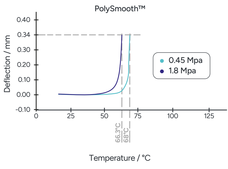


*Equilibrium water absorption (%)= 2.36%

THERMAL PROPERTIES

PROPERTY	TESTING METHOD	TYPICAL VALUE
Glass transition temp.	DSC, 10°C/min	70 °C
Melting temp.	DSC, 10°C/min	N/A
Crystallization temp.	DSC, 10°C/min	N/A
Decomposition temp.	TGA, 20°C/min	260 °C
Vicat softening temp.	ISO 306, GB/T 1633	70 °C
Heat deflection temp.	ISO 75 1.8MPa	66 °C
Heat deflection temp.	ISO 75 0.45MPa	68 °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	2199 ± 43 MPa 2010 ± 69 MPa
Tensile strength (X-Y) Tensile strength (Z)	ISO 527, GB/T 1040	51.8 ± 0.7 MPa 38.9 ± 0.8 MPa
Elongation at break (X-Y) Elongation at break (Z)	ISO 527, GB/T 1040	14.5 ± 2.9 % 2.8 ± 0.3 %
Bending modulus (X-Y) Bending modulus (Z)	ISO 178, GB/T 9341	2198 ± 57 MPa N/A
Bending strength (X-Y) Bending strength (Z)	ISO 178, GB/T 9341	75.9 ± 0.8 MPa N/A
Charpy impact strength (X-Y) notched Charpy impact strength (Z) notched	ISO 179, GB/T 1043	3.1 ± 0.8 kJ/m² N/A

CHEMICAL RESISTANCE DATA

PROPERTY	TYPICAL VALUE
Effect of weak acids	Not Available
Effect of strong acids	Not Available
Effect of weak alkalis	Not Available
Effect of strong alkalis	Not Available
Effect of oils and grease	Not Available

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	190 – 220 (°C)
Build plate temperature	25 - 70 (°C)
Build surface treatment	PC and Texture PEI (Glue when needed)
Cooling fan	ON
Closure chamber	No Needed
Recommended support material	PolyDissolve™ S1

Printing speed	50 - 200 (mm/s)
Drying temp. and time	50°C for 12h
Retraction distance	1 - 3 (mm)
Retraction speed	20 - 40 (mm/s)
Annealing setting	-

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



PolyBox™ or PolyDryer™ Box

Recommended storage for excellent printing quality

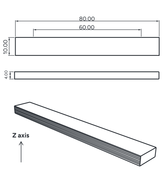
HOW TO MAKE SPECIMENS

Printing temperature	220 °C
Bed temperature	60 °C
Top & bottom layer	3
Environmental temperature	Ambient

Infill	100%
Shell	2
Cooling fan	ON

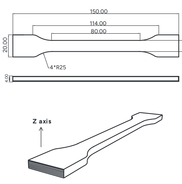
FLEXURAL TESTING SPECIMEN

ISO 178, GB/T 9341



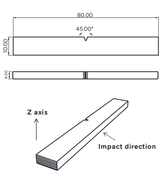
TENSILE TESTING SPECIMEN

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.