TECHNICAL DATA SHEET

V1.1

POLYMAKER ™ ABS-Pro

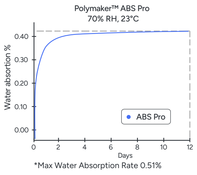
Polymaker™ ABS Pro is an engineering-grade ABS filament developed for users who require more performance than standard ABS can provide. With enhanced heat resistance, strength, and impact resistance, ABS Pro is the ideal upgrade for demanding functional printing applications.

WWW.POLYMAKER.COM

PHYSICAL PROPERTIES

PROPERTY	TESTING METHOD	TYPICAL VALUE
Density	ISO1183, GB/T1033	1.04 g/cm^3 at 23°C
Melt index	210°C, 2.16 kg	11.1 g/10min
Light transmission	GB/T 2410	N/A

MOISTURE ABSORPTION CURVE

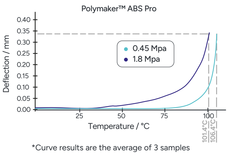


*Max Water Absorption Rate 0.51%

THERMAL PROPERTIES

PROPERTY	TESTING METHOD	TYPICAL VALUE
Glass transition temp.	DSC, 10°C/min	114.9°C
Decomposition temp.	TGA, 20°C/min	436.4°C
Vicat softening temp.	ISO 306, GB/T 1633	116.1°C
Heat deflection temp.	ISO 75 0.45MPa	106.4°C
Heat deflection temp.	ISO 75 1.8MPa	101.4°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	2.33±0.03 GPa 1.95±0.02 GPa
Tensile strength (X-Y) Tensile strength (Z)	ISO 527, GB/T 1040	34.94±0.62 MPa 21.87±0.32 MPa
Elongation at break (X-Y) Elongation at break (Z)	ISO 527, GB/T 1040	7.34±1.13 % 1.54±0.13 %
Bending modulus (X-Y) Bending modulus (Z)	ISO 178, GB/T 9341	2.33±0.05 GPa 2.17±0.01 GPa
Bending strength (X-Y) Bending strength (Z)	ISO 178, GB/T 9341	60.05±0.46 MPa 41.24±2.14 MPa
Charpy impact strength (X-Y) notched Charpy impact strength (X-Y) Charpy impact strength (Z)	ISO 179, GB/T 1043	14.48±0.96 kJ/m^2 8.87±1.14 kJ/m^2 39.58±12.45 kJ/m^2

CHEMICAL RESISTANCE DATA

PROPERTY	TYPICAL VALUE
Effect of weak acids	Good
Effect of strong acids	Poor
Effect of weak alkalis	Good
Effect of strong alkalis	Fair
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	270-290°C
Build plate temperature	100-110°C
Build surface treatment	PEI
Cooling fan	0-30%
Closure chamber	Yes

Printing speed	Up to 250mm/s
Drying temp. and time	70°C/6H
Retraction distance	1 (mm)
Retraction Speed	20 (mm/s)

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

PolyBox™ or PolyDryer™ Box

Recommended storage for excellent printing quality

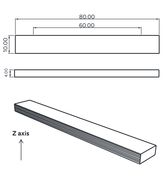
HOW TO MAKE SPECIMENS

Printing temperature	240°C
Bed temperature	80°C
Top & bottom layer	3
Environmental Temperature	Ambient

Infill	100%
Shell	2
Cooling fan	OFF

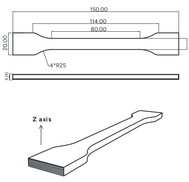
FLEXURAL TESTING SPECIMEN

ISO 178, GB/T 9341



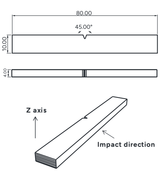
TENSILE TESTING SPECIMEN

ISO 527, GB/T 1040



IMPACT TESTING SPECIMEN

ISO 179, GB/T 1043



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