TECHNICAL DATA SHEET

V6.0

polymaker
3D PRINTING FILAMENT

Polylite ™ PLA-CF

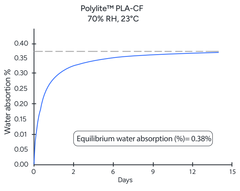
PolyLite™ PLA-CF is a high-quality PLA reinforced with carbon fiber designed for functional applications and smooth and matte surface finish.

WWW.POLYMAKER.COM

PHYSICAL PROPERTIES

PROPERTY	TESTING METHOD	TYPICAL VALUE
Density	ISO1183, GB/T1033	1.29 g/cm ^{3} at 23°C
Melt index	210°C, 2.16 kg	9.2 g/10min
Light transmission	GB/T 2410	N/A

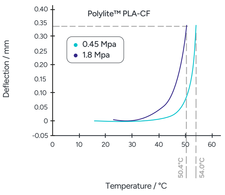
MOISTURE ABSORPTION CURVE



THERMAL PROPERTIES

PROPERTY	TESTING METHOD	TYPICAL VALUE
Glass transition temp.	DSC, 10°C/min	62°C
Decomposition temp.	TGA, 20°C/min	N/A
Vicat softening temp.	ISO 306, GB/T 1633	N/A
Heat deflection temp.	ISO 75 0.45MPa	54°C
Heat deflection temp.	ISO 75 1.8MPa	50°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	3280.7±79.6 MPa 2213.1±42.9 MPa
Tensile strength (X-Y) Tensile strength (Z)	ISO 527, GB/T 1040	31.2±0.7 MPa 15.1±0.7 MPa
Elongation at break (X-Y) Elongation at break (Z)	ISO 527, GB/T 1040	13.2±1.7 % 0.9±0.1 %
Bending modulus (X-Y) Bending modulus (Z)	ISO 178, GB/T 9341	3380.5±52.1 MPa N/A
Bending strength (X-Y) Bending strength (Z)	ISO 178, GB/T 9341	51.7±0.6 MPa N/A
Charpy impact strength (X-Y) notched Charpy impact strength (X-Y) Charpy impact strength (Z)	ISO 179, GB/T 1043	5.5±0.2 kJ/m^2 N/A

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	190-230°C
Build plate temperature	25-60°C
Build surface treatment	PC and Texture PEI
Cooling fan	ON

Printing speed	50-300mm/s
Drying temp. and time	55°C/6H
Retraction distance (Direct Drive)	1-3 (mm)
Retraction Speed (Direct Drive)	20-40 (mm/s)

*All-metal hot-end needed

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

PolyDissolve™ S1

Recommended support material

PolyBox™ or PolyDryer™ Box

Recommended storage for excellent printing quality

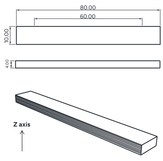
HOW TO MAKE SPECIMENS

Printing temperature	230°C
Bed temperature	50°C
Top & bottom layer	3
Environmental Temperature	Ambient

Infill	100%
Shell	2
Cooling fan	ON

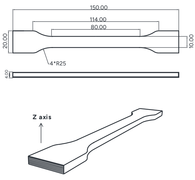
FLEXURAL TESTING SPECIMEN

ISO 178, GB/T 9341



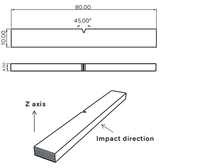
TENSILE TESTING SPECIMEN

ISO 527, GB/T 1040



IMPACT TESTING SPECIMEN

ISO 179, GB/T 1043



DISCLAIMER