PolyLite™ PC

For other languages, please visit
www.polymaker.com

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My first print

1) Prepare the gcode

Download the MyFirstPrint.stl on **www.polymaker.com**
Load the stl file in your favorite slicer.

Enter the correct settings for PolyLite™ PC;

Property	Value
Nozzle temperature	250˚C - 270˚C
Bed temperature	90˚C - 105˚C
Nozzle speed	30mm/s – 50mm/s
Cooling fan	OFF
Layer height	0.1
Infill	20%
Number of outlines (shell)	3
Top/Bottom layers	4
Surface adhesion	Brim or Raft

Note: It is recommended to print the first layer thick and a little further from the build plate (0.15mm-0.2mm).

2) Prepare the printer

- Clean the build plate and prepare it with the right surface:
We recommend to print **PolyLite™ PC** on BuildTak®.
- Level the build plate.
- It is recommended to clean the nozzle when you change the material to prevent partial clog.

Note: It is recommended to use an enclosure to print **PolyLite™ PC** to prevent warping issue.
It is recommended to place the printer in a well ventilated area.

3) Prepare the filament

- Carefully open the resealable bag, remove the spool and close the bag back to preserve the desiccant bag.
- It is recommended to store **PolyLite™ PC** in the **PolyBox™** to prevent moisture absorption which will lower the quality and the mechanical properties of the print.
- Load the filament in your printer and wait until you have a consistent extrusion.
- At the end of the print, make sure to correctly store the filament back in the resealable bag if you are not using the **PolyBox™**.

4) Start the print

When the print begins, make sure the first layer is correctly laid down and sticking well to the bed before leaving the printer to finish the print.

5) Post process

PolyLite™ PC can be annealed right after the printing process at 100˚C for 2 hours to release residual internal stress and therefore preserve its mechanical properties.
PolyLite™ PC can be sanded to obtain a smoother surface.

PolyLite™ PC

PolyLite™ PC is produced using a polycarbonate resin specifically engineered for 3D printing. It delivers good stiffness and heat resistance with light diffusing properties.

Available colors:

Physical properties

Property	Testing method	Typical value
Density	ASTM D792 (ISO 1183, GB/T 1033)	1.19 – 1.20 (g/cm³ at 21.5 °C)
Glass transition temperature	DSC, 10 °C/min	113 (°C)
Vicat softening temperature	ASTM D1525 (ISO 306, GB/T 1633)	119 (°C)
Melt Index	260 °C, 1.2 kg	8-11 (g/10 min)
Decomposition temperature	TGA, 20 °C/min	129- 132 (°C)

Mechanical properties

Property	Testing method	Typical value
Young's modulus (X-Y)	ASTM D638 (ISO 527, GB/T 1040)	2307 ± 60 (MPa)
Tensile strength (X-Y)	ASTM D638 (ISO 527, GB/T 1040)	62.7 ± 1.3 (MPa)
Elongation at break (X-Y)	ASTM D638 (ISO 527, GB/T 1040)	3.2 ± 0.4 (%)
Bending modulus	ASTM D790 (ISO 178, GB/T 9341)	2477 ± 159 (MPa)
Bending strength	ASTM D790 (ISO 178, GB/T 9341)	100.4 ± 2.7 (MPa)
Charpy impact strength	ASTM D256 (ISO 527, GB/T 1040)	3.4 ± 0.1 (kJ/m²)

Drying settings

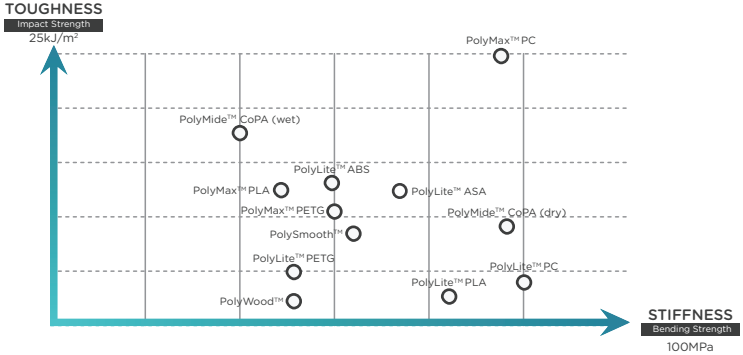
80˚C for 8h

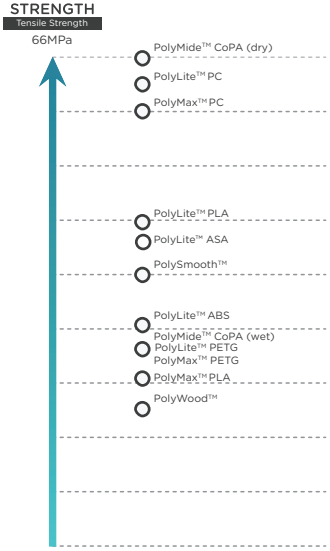
Diameter accuracy (2.85/1.75 mm):

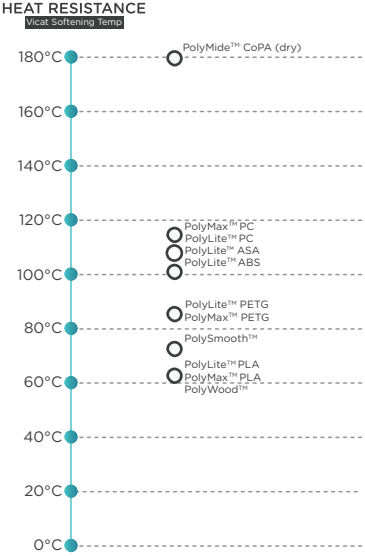
70%	is within	+/- 0.01
97%	is within	+/- 0.02
99%	is within	+/- 0.03
99.9%	is within	+/- 0.04

Weight accuracy:

600g	+/-	20g
750g	+/-	20g
1000g	+/-	30g
3000g	+/-	60g


TOUGHNESS
Impact Strength
25kJ/m²
PolyMax™ PC
PolyMide™ CoPA (wet)
PolyLite™ ABS
PolyMax™ PLA
PolyLite™ ASA
PolyMax™ PETG
PolyMide™ CoPA (dry)
PolySmooth™
PolyLite™ PETG
PolyLite™ PC
PolyLite™ PLA
PolyWood™
STIFFNESS
Bending Strength
100MPa


STRENGTH
Tensile Strength
66MPa
PolyMide™ CoPA (dry)
PolyLite™ PC
PolyMax™ PC
PolyLite™ PLA
PolyLite™ ASA
PolySmooth™
PolyLite™ ABS
PolyMide™ CoPA (wet)
PolyLite™ PETG
PolyMax™ PETG
PolyMax™ PLA
PolyWood™


HEAT RESISTANCE
Vicat Softening Temp
180°C
160°C
140°C
120°C
100°C
80°C
60°C
40°C
20°C
0°C
PolyMide™ CoPA (dry)
PolyMax™ PC
PolyLite™ PC
PolyLite™ ASA
PolyLite™ ABS
PolyLite™ PETG
PolyMax™ PETG
PolySmooth™
PolyLite™ PLA
PolyMax™ PLA
PolyWood™

Product Families

PolyLite™

ABS, PETG, PLA, PC, ASA

PolyLite™ is a family of 3D printing filaments made with the best raw materials to deliver exceptional quality and reliability. PolyLite™ covers the most popular 3D printing materials to meet your everyday needs in design and prototyping.

PolyMax™

PLA, PC, PETG, ✿ PC-FR

PolyMax™ is a family of advanced 3D printing filaments produced with Polymaker's Nano-reinforcement technology, to deliver exceptional mechanical properties and printing quality.

PolyFlex™

TPU90, TPU95, ✿ TPU95-HF

PolyFlex™ is a family of high-quality flexible materials. It provides the perfect solution for applications where high flexibility and durability are required.

PolyMide™

CoPA, ✪ PA6-CF, ✪ PA6-GF

PolyMide™ is a family of Nylon/polyamide based filaments. Produced with Polymaker's Warp-Free™ technology, PolyMide™ filaments deliver engineering properties intrinsic to Nylon and ease of printing.

PolyDissolve™

S1, S2

PolyDissolve™ is a family of dissolvable support filaments. This family offers support solution for our portfolio of filaments. It enables a greater design freedom.

Specialty

PolyWood™, PolySupport™, PolySmooth™, PolyCast™

✪ Polymaker™ PC-ABS, ✪ Polymaker™ PC-PBT

The Specialty family provides unique filaments from Polymaker to unlock new 3D printing applications.

Hardware

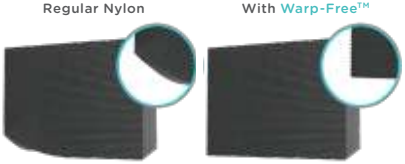
Polysher™, PolyBox™

Polymaker offers 3D printing accessories to optimize the user experience with their filaments.

Technologies

JAM-FREE™

Jam-Free™ technology improves the heat stability of Polymaker's PLA filaments with softening temperatures over 140 °C. As a result, Polymaker's PLA filaments show minimal softening in the "cold end" and can melt rapidly once entering the heating zone, leading to excellent printing quality with zero risk of nozzle jams.



WARP-FREE™

Warp-Free™ technology enables the production of Nylon-based filaments that can be 3D printed with excellent dimensional stability and near-zero warpage. This is achieved by the fine control of micro-structure and crystallization behavior of Nylon, which enables the material to fully release the internal stress before solidification.

ASH-FREE™

Ash-Free™ technology allows Polymaker's filament which has been designed for investment casting to burn off cleanly without any residue, enabling defect-free metal parts. 3D printing has been used to produce investment casting patterns as it cuts down both the cost and lead time for small-volume production runs.

LAYER-FREE™

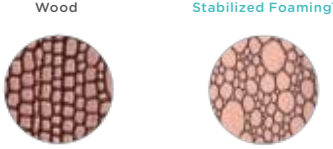
Layer-Free™ technology involves exposing a 3D printed part to an aerosol of micro-sized alcohol droplets, generated by a rapidly vibrating, perforated membrane called the nebulizer. The aerosol will then be adsorbed by the surface of the 3D printed part and render it smooth and layer-free.

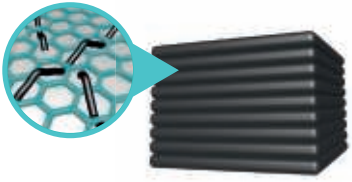
NANO-REINFORCEMENT

Nano-reinforcement technology is applied to produce filaments with excellent mechanical properties and printing quality. It dramatically improves the toughness of the material by increasing its impact resistance.

STABILIZED FOAMING™

Stabilized Foaming™ technology is used to produce foamed filaments, whose foam structure can survive the printing process and be inherited by the printed parts. This enables light weight 3D printed parts with unprecedented surface finish.





FIBER ADHESION™

Fiber Adhesion™ technology improves the layer adhesion of fiber reinforced materials, by optimizing the surface chemistry of the fibers to achieve better dispersion and bonding to the matrix. This results in better strength along the Z-axis and reduced mechanical anisotropy.

Hardware

Polymaker offers 3D printing accessories to optimize the user experience with their filaments.

PolyBox™

PolyBox™ is a dry storage box designed to provide the optimum environment for 3D printing filaments. The PolyBox™ is compatible with all 3D printers and can house two 1kg spools or one 3kg spool.

Polysher™

The Polysher™ is a desktop post processing unit designed to remove layer lines from PolySmooth™ and PolyCast™ prints. The Polysher™ uses Polymaker's Layer-Free™ technology to create a fine mist of alcohol which evenly smooths the model.

Monitor your prints from anywhere with

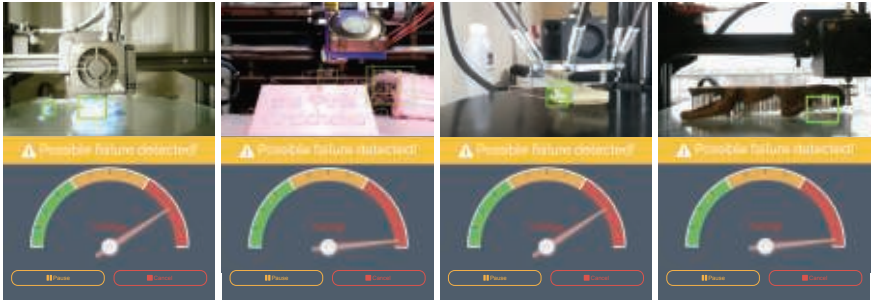
THE SPAGHETTI DETECTIVE

The Spaghetti Detective's automatic failure detection can give added peace of mind, help prevent messy failures, and keep your printer up and running longer.

Advantages

- MANAGE PRINTING REMOTELY
- CATCH PRINT HAZARDS EARLY
- MANAGE EQUIPMENT DAMAGE RISK
- SAVE TIME & MONEY

Overview



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thespaghettidetective.com/polymaker.html

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About Polymaker

Our Values

Customer Oriented

Responsible

Entrepreneurial

Embracing Innovation

Mission

Polymaker is committed to lowering the barriers to innovation and manufacturing, by continuously developing advanced 3D printing material technologies for industries and consumers.

Contact us

For any inquiries or technical support,
please contact: **support@polymaker.com**

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