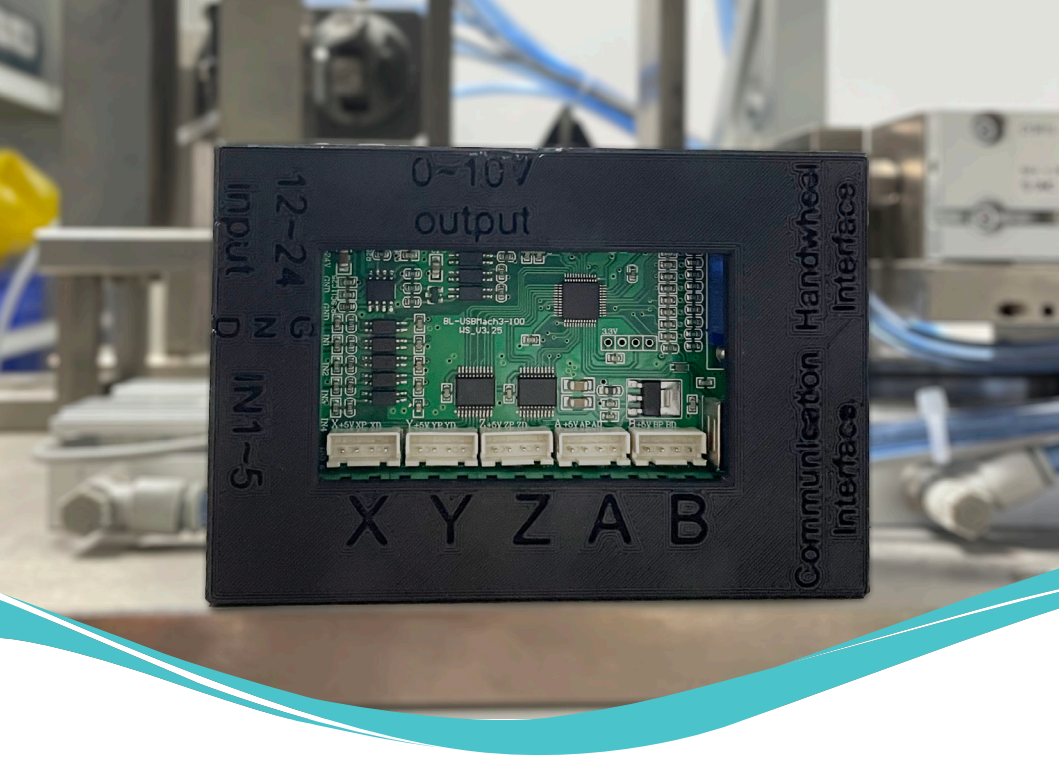


PolyMax™ PETG-ESD

For other languages, please visit
www.polymaker.com

INDEX

My first print

1) Prepare the gcode

Load the stl file in your favorite slicer.

Enter the correct settings for PolyMax™ PETG-ESD;

Property	Value
Nozzle temperature	250˚C - 290˚C
Bed temperature	70˚C - 80˚C
Nozzle speed	30mm/s – 50mm/s
Cooling fan	OFF-20%
Layer height	0.2mm
Number of outlines (shell)	3
Top/Bottom layers	4
Surface adhesion	Brim

2) Prepare the printer

- Clean the build plate and prepare it with the right surface:
We recommend to print **PolyMax™ PETG-ESD** on BuildTak® or glass with glue.
- Level the build plate.
- It is recommended to use a hardened nozzle and clean the nozzle when you change the material to prevent partial clog.

Note: 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 **PolyMax™ PETG-ESD** 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.

PolyMax™ PETG-ESD

PolyMax™ PETG-ESD offers better mechanical properties than any other regular PETG making it a good candidate for a wide range of applications.

Available colors:

Physical properties

Property	Testing method	Typical value
Density	ISO 1183, GB/T 1033	1.24 (g/cm^3 at 23 °C)
Glass transition temperature	DSC, 10 °C/min	77 (°C)
Vicat softening temperature	ISO 306, GB/T 1633	86 (°C)
Melt Index	280 °C, 5 kg	14 (g/10 min)

Mechanical properties

Property	Testing method	Typical value
Young's modulus (X-Y)	ISO 527, GB/T 1040	1983 ± 66 (MPa)
Tensile strength (X-Y)	ISO 527, GB/T 1040	36.1 ± 0.7 (MPa)
Elongation at break (X-Y)	ISO 527, GB/T 1040	7.3 ± 0.5 (%)
Bending strength (X-Y)	ISO 178, GB/T 9341	54.0 ± 3.0 (MPa)
Notched Charpy impact strength (X-Y)	ISO 179, GB/T 1043	5.7 ± 0.6 (kJ/m^2)

Drying settings

70˚C for 8h

Diameter accuracy (2.85/1.75 mm):

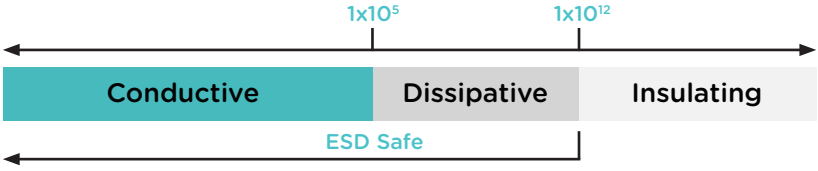
70%	is within	+/- 0.01
97%	is within	+/- 0.02
99%	is within	+/- 0.03
99.9%	is within	+/- 0.04

Weight accuracy:

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

ESD Material/Part (polymer)
Surface Resistivity = 1x105 -1x1012 Ω/sq or Ω
Volume Resistivity = 1x104 -1x1011 Ω·cm

Surface Resistivity(Ω/sq or Ω)



surface resistivity(Ω)		Nozzle Temperature		
		250°C	270°C	290°C
Specimen Type	0°	(1.6±0.3)E+7	(1.6±0.3)E+7	<1E+4
	45°	(1.6±0.3)E+7	(1.6±0.3)E+7	<1E+4
	90°	(1.6±0.3)E+7	(1.6±0.3)E+7	<1E+4

The test method is ANSI ESD S11.11

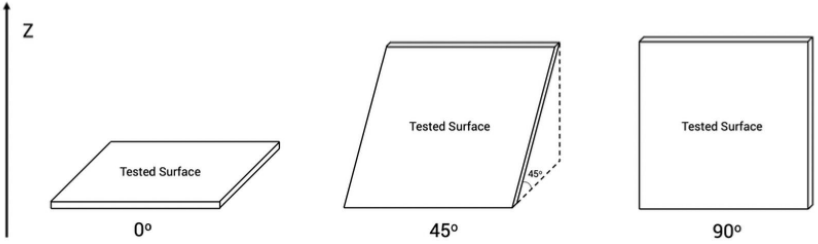
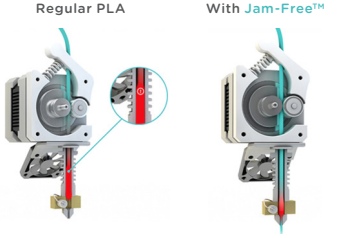


Diagram of test specimen

Technologies

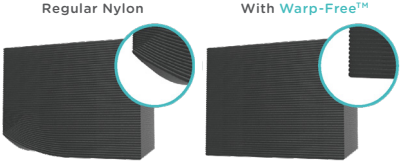
JAM-FREE™

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.

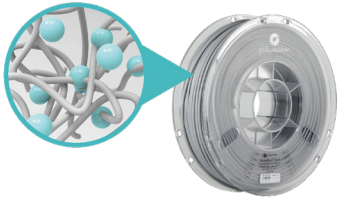


ASH-FREE™

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.

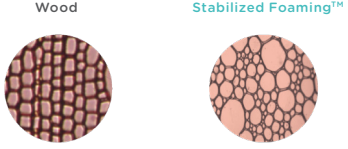


NANO-REINFORCEMENT

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.



About Polymaker

Who We Are?

Polymaker is an international team passionate about 3D printing. We produce the very best 3D printing materials by controlling every stage of production. With a diverse portfolio of materials ranging from high performance plastics to unique aesthetic solutions, Polymaker will continue to add cutting edge materials to its ever-growing portfolio.

Mission & Vision

Our mission is to create the best in class when it comes to 3D printing materials. We believe that materials are the enabling factor which will realise 3D printing as a final production tool. Our high performance materials offer solutions that will develop 3D printing into a mainstream manufacturing method.

Locations

Polymaker is a global company head-quartered in Shanghai. With distribution centers located in North America, Europe & Asia, our materials have penetrated every corner of the globe. Our worldwide presence is closely managed through our relationships with our local distributors and resellers. Polymaker is a regular exhibitor at 3D printing exhibitions on 4 continents.

Research & Development

At the core of Polymaker is our research & development laboratory, this is where all our materials are formulated and fine-tuned from the ground up to create the best in class 3D printing materials. Our precision testing equipment combines the latest advancements in technology to ensure we are ahead of the game.

Quality Control

Polymaker implements a rigorous quality control check on all materials. Utilizing our state of the art technology, we measure both the roundness and diameter of our filaments many thousand times a second, monitoring our processes with strict tolerances. We also have a number of processes and technologies that set apart Polymaker materials.

Contact us

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

The information provided in this document is intended to serve as basic guidelines on how particular product can be used. Users can adjust the printing conditions based on their needs and actual situations. It is normal for the product to be used outside of the recommended ranges of conditions. 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 particular use or application. Polymaker shall not be made liable for any damage, injury or loss induced from the use of Polymaker materials in any particular application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