PolyDissolve™ S1

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Printing with PolyDissolve™ S1

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 PolyDissolve S1™;

Property	Value
Nozzle temperature	215˚C - 225˚C
Bed temperature	25˚C - 60˚C
Nozzle speed	30mm/s – 40mm/s
Cooling fan	ON
Z gap	0mm
X-Y gap	0.5mm

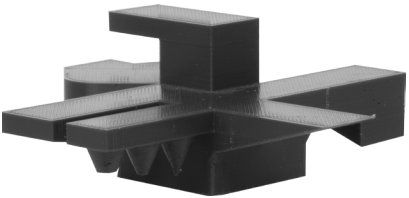
PolyDissolve™ S1 is a Poly (vinyl alcohol) based filament. PVA has excellent solubility in water, making **PolyDissolve™ S1** a very good dissolvable support material for FFF 3d printing.

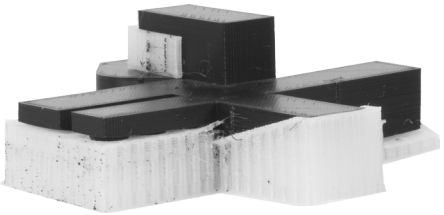
PolyDissolve™ S1 can be used as full support material or only as the interface between the support structure and the model, this later can allow the support to be easily removable by hand but will also speed up the dissolving process.

2) Removing the support

a) **PolyDissolve™ S1** is designed to be partially removable by hand so we recommend to remove the support that can be easily pealed off before submerging the model into water.

b) After partially removing the support the model can be submerged in water to dissolve away the rest of the support. This process can be speed up by agitating the water, using warm water (>50˚C) or regularly changing the water.





Note: The preferred method of disposal for polyvinyl alcohol (PVA) support material is in the trash. The immersion of 3D printed objects into water containing support material will generate wastewater containing PVA. It is suggested that you contact your local Sanitary Sewer (Wastewater) Authority to obtain the proper disposal method prior to discharging to the sewer.

PolyDissolve™ S1

PolyDissolve™ S1 is a water dissolvable support for PLA, TPU, PVB and Nylon based filaments from our portfolio. It is specifically engineered to have a perfect interface with these materials while also displaying good solubility.

Available colors:

Physical properties

Property	Testing method	Typical value
Density	ASTM D792 (ISO 1183, GB/T 1033)	1.37 (g/cm^3 at 21.5 °C)
Melt Index	210 °C, 2.16 kg	7.8 (g/10 min)

Mechanical properties

Material	Combination
PLA based material from Polymaker's portfolio	++
PETG based material from Polymaker's portfolio	+
ABS based material from Polymaker's portfolio	--
PC based material from Polymaker's portfolio	--
PVB based material from Polymaker's portfolio	++
TPU based material from Polymaker's portfolio	++
Nylon based material from Polymaker's portfolio	++

++ : support the model very well
+: generally support the model depending on its geometry
-: generally don't support the model depending on its geometry
- -: do not support the model

Drying settings

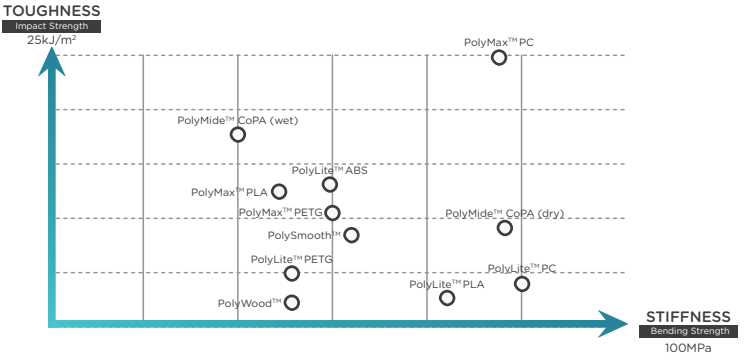
80˚C for 12h

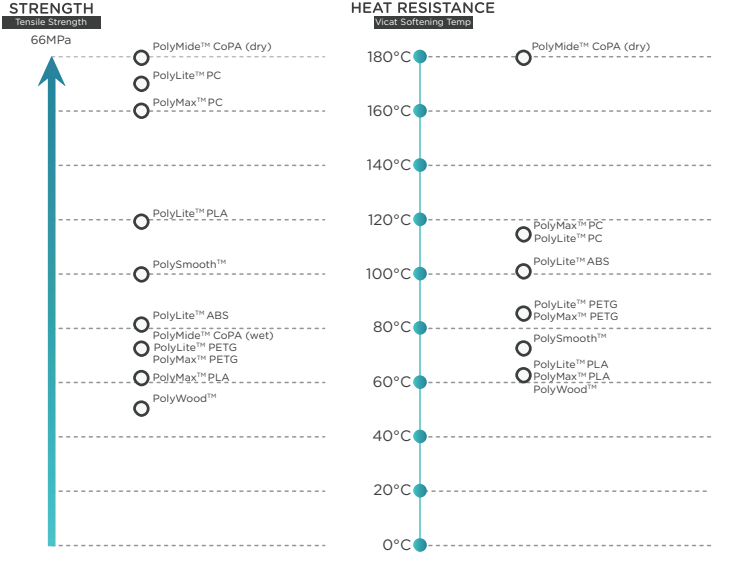
Diameter accuracy (2.85/1.75 mm):

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
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
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™ ABS
PolyLite™ PETG
PolyMax™ PETG
PolySmooth™
PolyLite™ PLA
PolyMax™ PLA
PolyWood™

Product Families

Industrial range:

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™

TPU95

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

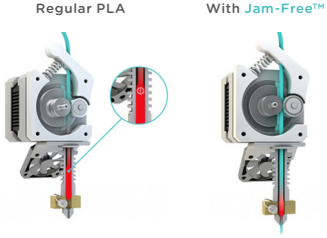
Polysher™, PolyBox™

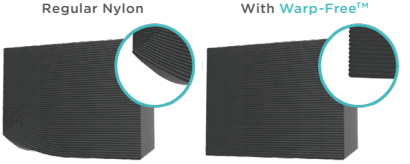
Polymaker offers 3D printing accessories to optimize the user experience with their filaments.

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™

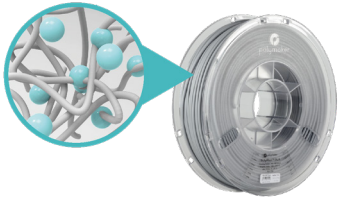
Warp-Free™ technology enables the production of Nylon-based filaments that can be 3D printed with excellent dimensional stability and near-zero warpage. This is achieved by the fine control of micro-structure and crystallization behavior of Nylon, which enables the material to fully release the internal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

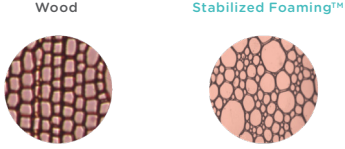


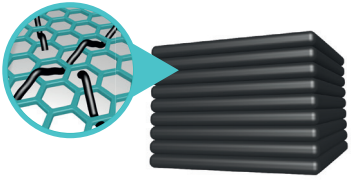
NANO-REINFORCEMENT

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

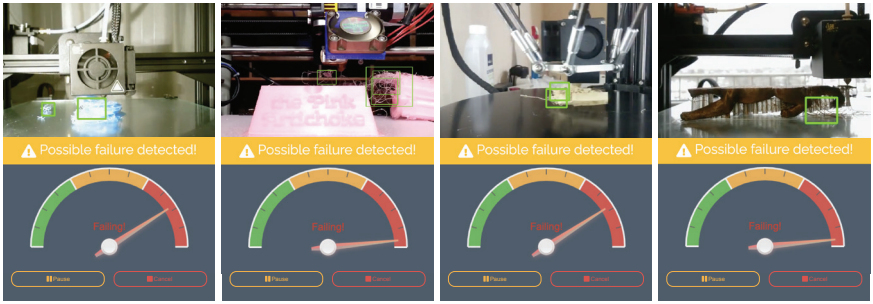
THE SPAGHETTI DETECTIVE

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

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 please contact:

inquiry@polymaker.com

For 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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