



eSUN3D



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**GLOBAL LEADING BRAND
OF 3D PRINTING POLYMERS**

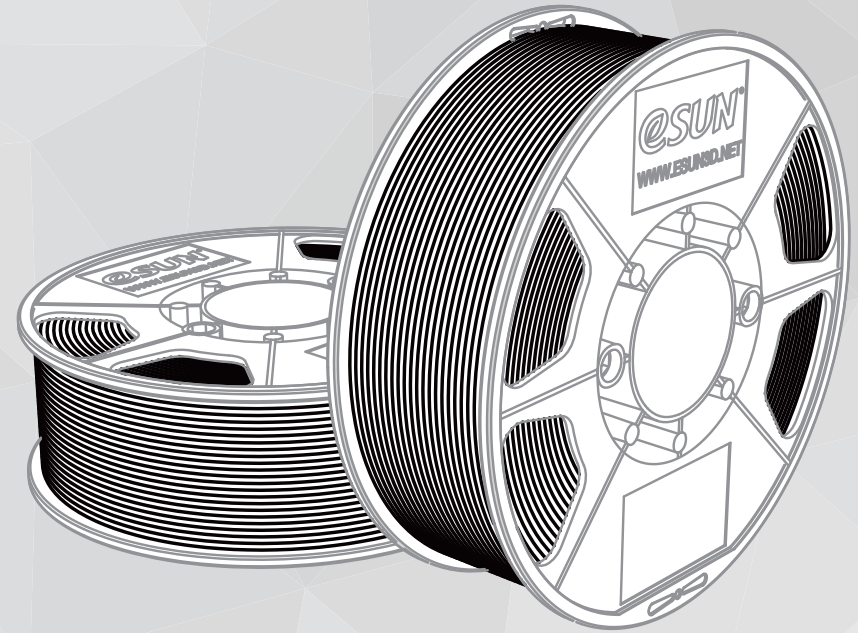
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**3D Printer Filament
User Guide**

GLOBAL LEADING BRAND OF 3D PRINTING POLYMERS

PLA Series (including PLA+ / Color Changing / Wood / eSmooth / eBamboo / PETG)

| | | |
|---|-------------------------------|-------------------------|
| Applicable Printer: General | Printing Temp.190-220°C | Bed Temp. 60 ~ 80°C |
| (BuildTak/Kapton Tape Recommended) . For better modelling effect, please use Blue Masking Tape and do NOT heat the print bed. | | |
| Speed: 40 ~ 60mm/s | Travel Speed: 80 ~ 150mm/s | Filling Rate: 10 ~ 100% |
| Wall Thickness: ≥2 Layers | Cooling Wind Speed: 50 ~ 100% | / |
| Alcohol is applicable to the finishing process of eSmooth. | | |

ABS / ABS+ / eABS MAX / HIPS / eASA

| | | |
|---|---|------------------------|
| Applicable Printer: Printer with Hot Bed & Enclosed Chamber | Printing Temp.220-260°C | |
| Chamber Temp.80°C | Bed Temp.90 ~ 110°C (BuildTak/Kapton Tape/PEI Orifice Plate) | |
| Print Speed: 40 ~ 60mm/s | Travel Speed: 80 ~ 150mm/s | Filling Rate: 10 ~ 50% |
| Wall Thickness: ≥2 Layers | Cooling Wind Speed: 0 ~ 10% | / |
| Acetone is applicable to the finishing process of ABS. | | |

ePA / ePA-CF / ePA-GF / ePC

| | | |
|--|--|-------------------------|
| Applicable Printer: Printer with Hot Bed & Enclosed Chamber | Printing Temp.230-260°C | |
| Chamber Temp.65°C | Bed Temp.80 ~ 90°C (PEI Orifice Plate/Blue Masking Tape) , 50 ~ 80°C (Glue stick) | |
| Print Speed: 40 ~ 60mm/s | Travel Speed: 80 ~ 150mm/s | Filling Rate: 10 ~ 100% |
| Wall thickness: ≥2 Layers | Cooling Wind Speed: 0 ~ 50% | / |
| Baking the ePA filament including ePA-CF & ePA-GF with temperature ranges from 90°C to 100°C for 6 hours if it absorbs moisture. | | |

eFlex / eLastic / eTPU-98A / eTPU-95A

| | | |
|--|----------------------------|-------------------------|
| Applicable Printer: Near-End Seamless Extruder | Printing Temp.210-240°C | |
| Bed Temp.No Heat (Kapton tape/PET tape) | | |
| Print Speed: 20 ~ 40mm/s | Travel Speed: 80 ~ 150mm/s | Filling Rate: 20 ~ 100% |
| Wall Thickness: ≥3 Layers | Cooling Wind speed: 100% | / |

Bronze / eCopper / eAL-fill / eSteel

| | | |
|--|-------------------------------|---|
| Applicable Printer: General | Nozzle Diameter: ≥0.6mm | Printing Temp.190-220°C (Bronze180-210°C) |
| Bed Temp: 60 ~ 80°C (BuildTak / Kapton Tape Recommended) . For better modelling effect, please use Blue Masking Tape and do NOT heat the print bed. | | |
| Print Speed: 40 ~ 60mm/s | Travel Speed: 80 ~ 150mm/s | Filling Rate: 50 ~ 100% |
| Wall thickness: ≥3 Layers | Cooling Wind Speed: 50 ~ 100% | / |
| Tip: eCopper Surface Finish Process: Raw Emery Paper →Fine Sandpaper→Soft Cloth Wheel (Dusting) →Polishing Liquid→Soft Cloth Wheel. eAlfill/ eSteel Finishing Process: Raw Emery Paper → Stainless Steel Soft Brush | | |

PVA / ePVA+

| | | |
|--|--------------------------------------|---------------------------------|
| Applicable Printer: Double Nozzle | Printing Temp.190-210°C | Bed Temp.60 ~ 80°C |
| (Kapton / PET tape) .For better modelling effect, please use Blue Masking Tape and do NOT heat the print bed. | | |
| Print Speed: 40 ~ 60mm/s | Travel Speed: 80 ~ 150mm/s | Support Filling Rate: 50 ~ 100% |
| Support Critical Angle: ≤45° | Gap Between the Support and Model: 0 | |
| Tip: Baking the filament with 60°C for 4 hours if it absorbs moisture.If air bubble occurs, please prolong the baking time or increase the temperature within the range of 80°C. | | |

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ePEEK

| | | |
|---|--|-------------------------|
| Applicable Printer: Printer with hot bed & enclosed chamber | Printing Temp.380-450°C | |
| Chamber Temp.90°C | Bed Temp.80 ~ 110°C (Kapton Tape / PEI orifice plate) | |
| Print Speed: 40 ~ 60mm/s | Travel Speed: 80 ~ 150mm/s | Filling Rate: 50 ~ 100% |
| Wall Thickness: ≥2 Layers | Cooling Wind Speed: 0 ~ 10% | / |
| Annealing Process: Put in oven with temperature ranged from 150°C for 1 hour to 200°C for 1 hour or 150°C for 0.5 hour. | | |

☆ **GUIDELINES**

- Please do NOT start your print before checking your printer runs normally and keep the print bed and nozzle at a proper distance, including the clean of residuals on nozzle.
- Please ensure the filament is tangle-free before use and is secured each time after the end of printing.
- MAKE SURE don't let the open-end loose and spring back to the spool. It could lead to cross under unnoticed and could eventually get stuck. ALWAYS secure the open-end. If it springs back accidentally, you will need to TIGHTLY unwind for 20 feet to fix any tangles formed.
- Printing temperature may varies on different printers, extruding the filament beforehand for testing the best printing temperature that is measured by smooth extrusion, which should be proper otherwise may generate the possibility of strings.
- Near-end Extruder: Retraction distance 1-3mm, Retraction speed 20-30mm/s.
Far-end Extruder: Retraction distance 4-6mm, Retraction speed 40-60mm/s.
- Please clean the feeding gear regularly with a toothbrush.
- Nozzle wear is easier to happen in the glow in the dark filaments.
- Please ensure the constant temperature in printing area in case the occurrence of edge warping and cracking due to the fast cooling rate and excessive shrinkage rate.
- For small print, additional fans are recommended to facilitate the cooling including the flexible filaments for averting undesirable shape result from slow cooling at local area.
- 0.6mm or bigger nozzle is required to print the metal filaments otherwise it is to be blocked. And the nozzle should be cleaned with cleaning filament or PLA after long-time printing in case of nozzle jam.
- The common printer throat is equipped with in-built Teflon tube designed for resisting the blockage, and the printing temperature should be within 260°C.
- Printing parameters correlate with the performance, size of print, complexity and characteristics of filaments,therefore the best print result demands users to find out the printing parameters that work with printer and filaments perfectly.

△ **TROUBLESHOOTING GUIDE**

| Questions | Cause Analysis | Directions |
|---------------------------|---|--|
| Blocked Nozzle | Diameter: over thick/thin | Replace filament |
| | Printer: Gear clearance jammed | Clean gear |
| | Gear: abrasion /insufficient bite force | Clean gear, strengthen bite force |
| | Throat: deformed Temperature: too low / filament burned or carbonized | Change new Temperature rise / Clean the nozzle with thin iron stick |
| Stringing | Temperature: too high | Lower printing temp properly |
| | Remnants surrounded the nozzle Oozing when printer travel | Clean the nozzle before printing Raise travel speed,retraction speed and retraction distance |
| Dark Spot | Remnants surrounded the nozzle | Clean the nozzle before printing |
| | Impure filament | Change pure filament |
| Print Offset | Belt loose | Adjust the belt position to even out the belt tension |
| | Polish rod being dry Malfunction of drive coupler | Check the rods are clean and apply some oil Repair or change a new one |
| Print Edges Are Warping | The space between nozzle and print bed is big | Narrow the space |
| | Weak viscous force of coating on print bed | Change the coating or adhesive tape change your print bed to one that offers better adhesion |
| | Print bed temperature too low | Increase the bed temperature |
| | Bottom layer printed too fast Shrinkage rate is too big / cooling too fast Low Print temperature and fluidity | 10-20mm/s Keep the temperature, Slow down the cooling wind speed / close the cooling fan. Improve the printing temperature of first layer properly |
| Cracking | High shrinkage rate / fast cooling speed | Increase print temperature / Keep the temperature / Reduce print speed / thickness |
| Bevel molded with failure | Cooling too slow / printing speed is too fast | Accelerate the cooling / reduce printing speed / increase wall thickness and filling rate |

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