

Product Specifications:

Material: ALGIX 3D Advanced PLA™ Filament

Color Names	Revolutionary Red
	Optimum Orange
	Clever Yellow
	Inspiring Green
	Mirage Blue
	Visionary Blue
	Ingenious Gray
	Superb Silver
	Supreme Black
	Transcendent White
Normal Natural	
Filament Diameter	1.75 or 2.85 mm



Packaging

Filament Quantity	100 Gram Coil and 375 Gram Spool
Spool Diameter	17.8 cm (7 in)
Spool Width	2.8 cm (1 1/8 in)
Spool Hub Hole	5.2 cm (2 in)

General Information

ALGIX 3D Advanced PLA™ filament is the perfect material for your FFF 3D printing needs, because it is easy to use and outperforms conventional PLA and ABS in many areas. Advanced PLA™ filament is made from an improved PLA polymer specifically designed for 3D printing. It is made from a nontoxic resin made of lactic acid derived from plant sugars and has a slightly sweet smell when processed. Compared to conventional PLA and ABS, Advanced PLA™ has improved heat deflection, stiffness, strength, adhesion properties and 3D print quality. When using ALGIX 3D Advanced PLA™, you can expect: low odor, higher print detail/resolution, excellent first layer adhesion, improved adhesion between layers, reduced warping, curling and failed prints.

Professional Production

ALGIX 3D operates within a joint-venture with ALGIX, a distinguished leader in compounding and additives for the bioplastics industry. Our polymer science expertise and strategic partnerships are driving material innovations and quality. All ALGIX 3D filaments are produced in the Solaplast bioplastic production facility located in Meridian, Mississippi. We source all of the finest raw materials, including resins, pigments and additives in the making of our ALGIX 3D Advanced PLA™ filament, so that we can ensure the most consistent and highest quality product for every order. You can expect our polymer scientists to continually develop innovative new materials focused on performance, sustainability and quality.

Quality Control

Our filament extrusion system uses dual axis micrometer measurement systems to check the diameter and roundness during production. This helps us guarantee that each spool of ALGIX 3D filament is produced with a precision tolerance. We can guarantee $\pm 3\%$ on our ALGIX 3D Advanced PLA™ filament, which means you can rest assured that your printer is extruding the exact amount of material without causing jams, clogs and headaches. The ALGIX 3D printing test lab features several popular 3D printers, and we're continuously testing our filament on these 3D printers to monitor quality using advanced statistical practices.

3D Printing Tips

- Always print in an area with good airflow and minimal temperature fluctuations.
- Be sure your build plate is level, clean and oil-free before printing. Advanced PLA™ filament adheres well to glass or plastic and does not require a heated build plate like ABS filament.
- If your machine does have a heated build plate, we do advise using it for larger prints set at a temperature of 50°C, and if your machine has a fan, we recommend using it for most prints.
- It is recommended to use high water content hairspray (as opposed to high ethyl alcohol content) lightly sprayed on the surface and allowed to dry before starting prints to ensure the first layer of the print sticks to the plate.
- This filament will run best at an extrusion temperature of 195-215°C (2.85mm filament usually prints at the higher end of this range).
- If prints appear stringy lower temp in 5°C increments until your prints appear satisfactory.
- For more stability and a higher quality print, consider experimenting with infills, print speeds, and layer heights.
- For prints with curvatures, it is recommended to turn on rafts and supports in your settings.

Competitive Filament Comparison

Physical Properties	APLA™	ABS	Characteristic Effects
Clarity	Opaque	Opaque	Light Transmission of Part
Melting Point (°C)	165	105	Polymer melting temperature
Diameter Tolerances (mm)	± .05	± .05	Variation in filament size
Ovality (mm)	± .04	± .04	Difference between two diameters measured across the filament's profile
Density (g/cm ²)	1.24	1.04	Density of filament material
Melt Flow Index (195°C)	11	2	Viscosity of filament in molten state
Tensile Strength at Yield (MPa)	55	33	The force required to deform
Tensile Elongation (%)	2.85	2.98	The amount of stretching before breaking
Tensile Modulus (MPa)	2904	1920	The rigidity or resistance to stretching
Toughness (J)	0.19	0.12	The amount of energy required to break
Heat Deformation Temp (°C)	144	98	Temperature at which a part will begin to deform after being post annealed
Volatile Compounds Detected	5	35	Number of identified compounds released during 3D printing
Volatiles with Toxicity Concerns	0	11	Number of identified compounds with a toxic health hazard rating according to GHS