

3D Fuel Advanced PLA filament (APLA) is the perfect material for your FDM/FFF 3D printing needs, because it is easy to use and outperforms conventional PLA and ABS in many areas. APLA filament is made from an improved PLA polymer specifically designed for 3D printing.

Compared to conventional PLA and ABS, APLA has improved heat deflection, stiffness, strength, adhesion properties, and 3D print quality. When using 3D Fuel APLA, you can expect: low odor, higher print detail/resolution, excellent first layer adhesion, improved adhesion between layers, reduced warping, curling and failed prints.

**Hi-Tech Production**

Within minutes of production, every spool of 3D Fuel filament is vacuum-sealed with a moisture desiccant enclosed. We source all of the finest raw materials, including resins, pigments and additives in the making of our 3D Fuel Advanced PLA filament, so that we can ensure the most consistent and highest quality product for every order.

**Quality Control**

Our filament extrusion system uses dual axis micrometer measurement systems to check the diameter and roundness during production. We can guarantee  $\pm 0.05\text{mm}$  on our 1.75mm 3D Fuel filament, which means you can rest assured that your printer is extruding the exact amount of material without causing jams, clogs and headaches. The 3D Fuel printing test lab features several popular 3D printers where we are continuously testing our filament.



**Product Specifications**

**Colors :** Battleship Gray  
Afterburn Green  
Electric Blue  
Natural  
Napalm Orange  
Nitrous Red  
Fossil Fuel Black  
High Octane White  
Nuclear Blue  
Smoky Silver  
Energetic yellow

**Sizes :**  
1.75mm  
2.85mm

**Info :**

**Quantity** – 1KG  
**Spool Diameter** – 20.3 cm  
**Spool Width** – 7.3 cm  
**Spool Hub Hole** – 5 cm

Physical Properties	APLA	ABS	Characteristic Effects
Clarity	Opaque	Opaque	Light Transmission of Part
Melting Point (°C)	165	105	Polymer melting temperature
Diameter Tolerances (mm)	$\pm .05$	$\pm .05$	Variation of filament size
Ovality (mm)	$\pm .04$	$\pm .04$	Difference between two diameters measured across the filament's profile
Density (g/cm <sup>3</sup> )	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 to break
Heat Deformation Temp (°C)	144	98	Temp at which it 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 rating according to GHS