

# 3D Printing Material - FDM

## Filament Manufacturers & Empty Spool Weights

There are many manufacturers of 3D Printing Filament. Below are those that members have personal experience with and recommend. Links are to the manufacturer sites, but these can also be found on Amazon and other online shopping sites.

MAKER	EMPTY SPOOL WEIGHTS
<a href="#">Amazon Basics</a>	
<a href="#">Anycubic</a>	
<a href="#">eSUN</a>	
<a href="#">Gizmodorks</a>	PLA - 200g Black Plastic - 80g
<a href="#">Hatchbox</a>	PLA - 1kg - Black Plastic - 241g
<a href="#">Inland</a> (Microcenter store brand, made by eSUN)	PLA - 1kg Black Plastic - 225g
<a href="#">Polymaker</a>	
<a href="#">Overture</a>	PLA - 1kg Cardboard - 159g PLA - 1kg Black Plastic 2.85mm - 234 g
<a href="#">YOUSU</a>	PLA - 250g Black Plastic - 91g

## Filament Types

There are a number of different types of 3D Printing Materials available. Not all are suitable for printing at Makersmiths at this time. Please see the steward if you are interesting in printing any material other than PLA, ABS, PETG or TPE/TPU.

3D Printing Filament	Special Properties	Usage	Printing Temperature	Bed Temperature	Bed Adhesion	Availability	Glow in the Dark
<a href="#">ABS</a>	Making durable parts that need to withstand higher temperatures, Easy to print with, strong plastic,	Legos, instruments, sports equipment, Objects that might be dropped, knife handles, car phone mounts, phone cases, toys, wedding rings	210°C – 250°C	80°C-110 °C	Kapton Tape / Hairspray	1.75mm/3mm	Yes
<a href="#">PLA</a>	Odorless, Low-warp, Eco-Friendly, Less energy to process	Food containers, such as candy wrappers, and biodegradable medical implants, models, prototype parts	190°C - 230°C	60°C - 80°C	Blue painter's tape/ Hairspray	1.75mm/3mm	Yes
<a href="#">PVA</a>	Non harmful, non-toxic, and environment friendly, Easily be dissolved in water under normal temperature, Easily stripping.	paper adhesive, thickener, packaging film, in feminine hygiene, adult incontinence products, in children's play putty or slime, freshwater sports fishing,	180°C – 230°C	45 °C	Blue Painters Tape	1.75mm/3mm	No
<a href="#">PET</a>	FDA approved for food containers and tools used for food consumption, barely warps, no odors or fumes when printed	phone cases and mechanical parts that require flexibility and impact resistance, jewelry, props, and electronics	230-255 °C	55 °C-70 °C	Blue Painters Tape	1.75mm/3mm	No
<a href="#">PETT</a>	Colorless, Water Clear, FDA approved, Recyclable, Strong and Flexible	Food containers like cups and utensils, Soda pop bottles,	210°C – 230°C	45 °C	Blue Painters Tape	1.75mm/3mm	No
<a href="#">HIPS</a>	Biodegradable, Great 3D Support material, low-cost,	costumes, models, miniature figurines, prototyping	220-230 °C	50 °C-60 °C	Kapton Tape /Hairspray	1.75mm/3mm	No
<a href="#">Nylon</a>	strong, lightweight, durable, flexible, wear-resistant, 100% thermoplastic	machine parts, mechanical components, structural parts, gears and bearings, dynamic load, containers, tools, consumer products and toys.	210°C – 250°C	60 °C-80 °C	PVA Based Glue	1.75mm/3mm	No
<a href="#">Wood</a>	Versatility, Real wood scent, Durability, contain real wood fibers	wooden box, wooden figurine, tables, chairs, cups or the likes.	200°C - 260°C	90°C-110°C.	Blue Painters Tape	1.75mm/3mm	No

Sandstone	No plastic feeling, Printed objects can be colored and easily ground, Sticks well on print bed, No heated bed necessary, Near zero warp	Architecture models, landscapes,	165°C – 210°C	20 °C-55 °C	Blue Painters Tape	1.75mm/3mm	No
Metal	highly durable, not soluble, little shrinkage during cooling	Jewelry, statues, home hardware and artifact replicas.	195-220 °C	50 °C	Blue Painters Tape	1.75mm/3mm	No
Magnetic Iron PLA	High Durability, Magnetic Look, Magnetic properties	Fridge magnets, sensors, actuators, magnetic stirrers, and educational, DIY projects.	185 °C	20 °C-55 °C	Blue Painters Tape	1.75mm/3mm	No
Conductive PLA	Very low warping, Not Soluble, Print low-voltage electronic circuits,	low-voltage circuitry applications, touch sensor projects,	225°C-260 °C	90 °C-110 °C	Kapton Tape/ Haispray	1.75mm/3mm	No
Carbon Fiber	Highly Durable, Soluble, Low Warpage, Good layer adhesion	Frames, supports, propellers, tools, mechanical parts, protective casings, shells, high durability applications	195°C-220 °C	50 °C	Blue Painters Tape	1.75mm/3mm	No
Flexible/TPE	Flexible 3D printing material, excellent abrasion resistance, smooth feeding properties, Durability	Toys, novelty items, wearable, phone cases, visual products.	210°C-225 °C	20-55 °C	Blue Painters Tape	1.75mm/3mm	No
Glow In The Dark	Minimal Warping, Glow in the Dark properties, durable, not soluble, low shrinkage during cooling	children's toys, novelty items, wearables, phone cases, visual products.	185°C-205 °C	70 °C	Blue Painters Tape	1.75mm/3mm	Yes
Amphora	High strength and very high toughness, FDA food contact compliance, Odor Neutral processing, Styrene free formulation	Desktop items, Mechanical Parts,	220°C – 250°C	60 °C- 70 °C	Blue Painters Tape	1.75mm/3mm	No

## Fun Materials

Flexible - [Ninja Flex](#) - rubber tires, belts, etc.

Glittery - [Proto-Pasta](#) - Metallic (more glitter than metallic, non-abrasive)

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