FILAMENT

- **PLA** *creeps in heat, very forgiving on open bed*
- **ABS** *Lego, warps easy on bed, styrene offgas*
- **PET-G** *PET (milk jugs) FDA safe*
- **NinjaFlex (PUR)** *Polyurethane, too wimpy for bowden*
- **Nylon** *Requires high heat*
- **CF filled** *Abrasive for nozzle*
- **Wood filled** *decorative*
- **Conductive filament** *interesting curiosity*

FILAMENT fromWikipedia

Materials [edit]

Filament	Special Properties	Uses	Strength	Density	Flexibility	Durability	Difficulty to print	Print Temperature (°C)	Bed Temperature (°C)	Printing notes
PLA	Easy to print Biodegradable	Consumer Products	Medium	1240 kg/m³[9]	Low	Medium	Low	180 - 230	No heated bed needed	
ABS	Durable Impact resistant	Functional Parts	Medium	1010 kg/m³[10]	Medium	High	Medium	210 - 250	50 - 100	
PETG (XT, N-Vent)	More flexible than PLA or ABS Durable	All	Medium	1270 kg/m³[11]	High	High	Medium	220 - 235	No heated bed needed	
Nylon	Strong Flexible Durable	All	High	1.02 g/cc³[12]	High	High	Medium	220 - 260	50 - 100	Hygroscopic, keep sealed when not in use
TPE	Extremely flexible Rubber-Like	Elastic Parts Wearables	Low		High	Medium	High	225 - 235	40	Print very slowly
TPU	Extremely flexible Rubber-Like	Elastic Parts Wearables	Low		High	Medium	High	225 - 235	No heated bed needed	Print slowly
Wood	Wood-like finish	Home Decor	Medium	1.4 g/cm³[13]	Medium	Medium	Medium	195 - 220	No heated bed needed	
HIPS	Dissolvable Biodegradable	Support structures when using ABS on a dual extrusion printer.	Low	1040 kg/m³[14]	Medium	High	Medium	210 - 250	50 - 100	
PVA	Dissolvable Water Soluble Biodegradable Oil Resistant	Support structures when using PLA or ABS on a dual extrusion printer.	High		Low	Medium	Low	180 - 230	No heated bed needed	Hygroscopic, keep sealed when not in use
PET (CEP)	Strong Flexible Durable Recyclable	All	High		High	High	Medium	220 - 250	No heated bed needed	
PLA Metal	Metal Finish	Jewelry	Medium		Low	High	High	195 - 220	No heated bed needed	Use hardened nozzle

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Materials [edit]

Filament	Special Properties	Uses	Strength	Density	Flexibility	Durability	Difficulty to print	Print Temperature (°C)	Bed Temperature (°C)	Printing notes
PLA Carbon Fiber	Rigid Stronger Than Pure PLA	Functional Parts	Medium		Low	High	Medium	195 - 220	No heated bed needed	Use hardened nozzle
Lignin (bioFila)	Biodegradable Stronger than PLA		Medium		Low	Medium	Low	190 - 225	55	
Polycarbonate	Very strong Flexible Durable Transparent Heat Resistant	Functional Parts	High	1.18 – 1.20 g/cm³[15]	High	High	Medium	270 - 310	90 - 105	Use enclosed heated chamber at ambient temperature of around 60°C
Conductive	Conductive	Electronics	Medium		Medium	Low	Low	215 - 230	No heated bed needed	Use hardened nozzle
Wax (MOLDLAY)	Melts Away	Lost wax Casting	Low		Low	Low	Low	170 - 180	No heated bed needed	
PETT (T-Glase)	Strong Flexible Transparent Clear	Functional Parts	High		High	High	Medium	235 - 240	No heated bed needed	
ASA	Rigid Durable Weather Resistant	Outdoor	Medium		Low	High	Medium	240 - 260	100 - 120	
PP	Flexible Chemical Resistance	Flexible Components	Medium	1.04 g/cc³[16]	High	Medium	High	210 - 230	120 - 150	
POM, Acetal	Strong Rigid Low Friction Resilient	Functional Parts	High		Low	Medium	High	210 - 225	130	