3D Printing Filament Comparison

V1.0 Feb 2017

	Print Temp	Bed Temp	Strength	Flexibility	Durability	Difficulty	Shrinkage	Soluble	Food Safe*	Blue Tape	Glue Stick	Typical Uses
ABS Acrylonitrile Butadiene Styrene	210-250 °C	50-100 °C	●●	●●	●●●	●●		Acetone	No		GLUE	Functional Parts
ASA Acrylonitrile Styrene Acrylate	240-260 °C	100-120 °C	●●	●	●●●	●●		Acetone	No		GLUE	Outdoor Use
Carbon Fiber Carbon Fiber and PLA blend	195-220 °C	N/A °C	●●	●	●●●	●●		No	No		–	Functional Parts
Cleaning Cleaning Filament	150-260 °C	N/A °C	–	–	–	●	–	–	–	–	–	Nozzle Cleaning / Unclogging
Color Changing PLA or ABS with color changing properties	210-220 °C	N/A °C	●●	●●	●●	●		No	No		GLUE	Educational, Modelling
Conductive Conductive PLA or ABS	215-230 °C	N/A °C	●●	●●	●	●		No	No		–	Electronics
Flexible, TPE, TPU Thermoplastic Urethane / Polyurethane	225-235 °C	N/A °C	●	●●●	●●	●●●		No	No		GLUE	Elastic Parts, Wearables
FPE Flexible Polyester	205-250 °C	75 °C	●	●●●	●●●	●●		No	Yes	–	GLUE	Flexible Parts
Glow-In-The-Dark Glow in the dark PLA or ABS	210-220 °C	N/A °C	●●	●●	●●	●		No	No		–	Educational, Modelling
HIPS High Impact Polystyrene	210-250 °C	50-100 °C	●	●●	●●●	●●		Solvent	No		GLUE	Support Structures
Lignin (bioFila) Lignin and PLA plus additives	190-225 °C	55 °C	●●	●	●●●	●●●		No	Yes		GLUE	All Purpose
Magnetic PLA with powdered iron	195-220 °C	N/A °C	●●	●●	●●	●●●		No	No		–	Educational, Experimental
Metal PLA / ABS Metal Powder and PLA or ABS blend	195-220 °C	N/A °C	●●	●	●●●	●●●		No	No		–	Jewelry
nGen Similar to PETG	210-240 °C	60 °C	●●	●●●	●●●	●●		No	Yes		–	All Purpose
Nylon Polyamide	220-260 °C	50-100 °C	●●●	●●●	●●●	●●		No	Yes	–	GLUE	All Purpose
PC Polycarbonate	270-310 °C	90-105 °C	●●●	●●●	●●●	●●		Acetone	No	–	GLUE	Functional Parts
PC/ABS Polycarbonate ABS	260-280 °C	120 °C	●●	●	●●●	●●●		No	No	–	GLUE	Functional Parts
PET (CPE) Polyethylene Terephthalate	220-250 °C	N/A °C	●●●	●●●	●●●	●●		No	Yes		–	All Purpose
PETG (XT, N-Vent) Poly-Ethylene Terephthalate Glycol	220-235 °C	N/A °C	●●	●●●	●●●	●●		No	Yes		–	All Purpose
PETT (T-Glase) PolyEthylene coTrimethylene Terephthalate	235-240 °C	N/A °C	●●●	●●●	●●●	●●		No	Yes		–	Functional Parts
PLA Polylactic Acid	180-230 °C	N/A °C	●●	●	●●	●		No	Yes		GLUE	Consumer Products
PMMA, Acrylic Polymethyl Methacrylate	235-250 °C	100-120 °C	●●	●	●●●	●●		Acetone	No		GLUE	Light diffusers, Modelling
POM, Acetal Polyoxymethylene	210-225 °C	130 °C	●●●	●	●●	●●●		Chemical	No	–	ABS	Functional Parts
PORO-LAY Rubber-elastomeric polymer with PVA	220-235 °C	N/A °C	●●●	●	●●	●		Water	Yes		–	Experimental
PP Polypropylene	210-230 °C	120-150 °C	●●	●●●	●●	●●●		No	Yes		–	Flexible Components
PVA Polyvinyl Alcohol	180-230 °C	N/A °C	●●●	●	●●	●		Water	Yes		–	Support Structures
Sandstone (Laybrick) Co-polyester and chalk powder	165-210 °C	N/A °C	●	●	●	●●		No	No		–	Architectural Modelling
TPC Thermoplastic Copolyester	210-210 °C	60-100 °C	●	●●●	●●	●●●		No	No		–	Elastic Parts, Outdoor Use
Wax (MOLDLAY) Wax-like properties	170-180 °C	N/A °C	●	●	●	●		No	No		–	Lost Wax Casting
Wood (Laywood) Wood PLA Blend	195-220 °C	N/A °C	●●	●●	●●	●●		No	No		–	All Purpose (natural finish)