

3D PRINTING FILAMENT

3D PRINTING PHOTOPOLYMER RESIN SERIES

3D FILAMENT	Print Temp(°C)	Bed Temp(°C)	Density (g/cm³)	Heat Distortion Temp (°C,0.45MPa)	Melt Flow Index (g/10min)	Tensile Strength (MPa)	Elongation at Break (%)	Flexural Strength (MPa)	Flexural Modulus (MPa)	IZOD Impact Strength (kJ/㎡)
PLA	190-210	25-70	1.24	56	5(190°C/2.16kg)	65	8	97	3600	4
PLA+	205-225	25-70	1.24	52	2(190°C/2.16kg)	60	29	87	3642	7
ABS	220-260	110	1.04	78	12(220°C/10kg)	43	22	66	2348	19
ABS+	220-260	110	1.06	73	15(220°C/10kg)	40	30	68	2443	42
eABS MAX	200-240	110	1.05	85	60(220°C/10kg)	45	30	58	2400	48
eASA	220-260	90-110	1.00	54	10-15(220°C/10kg)	50	30	35	4300	19
HIPS	220-260	110	1.05	80	3(200°C/5kg)	27	55	39	2280	11
PETG	230-250	No Heat/80	1.23	64	20(250°C/2.16kg)	49	228	68	2027	8
PVA	180-210	No Heat/(60-80)	1.25	/	/	22	360	/	/	/
eSoluble	190-210	No Heat/(60-80)	1.14	/	/	26	190	/	/	/
eSmooth	190-210	40-55	/	63.5	4-6(190°C/2.16kg)	46	273	71	2799	4
Wood	190-220	25-70	0.70	45	17(190°C/2.16kg)	/	/	/	/	/
eBamboo	200-220	25-70	1.20	48	10 ± 4(190°C/2.16kg)	28	10	35	2000	4
Color Change	190-220	No Heat/(60-80)	1.24	58	10(190°C/2.16kg)	65	5	97	3600	4
eClean	160-300	/	0.95	45	/	23	580	/	/	29
Bronze	180-210	25-70	1.27	50	62(190°C/2.16kg)	66	16	106	4442	4
eCopper	200-220	25-70	2.46	52	20(190°C/2.16kg)	40	4	64	4954	4
eAl-fill	200-220	25-70	1.48	52	8(190°C/2.16kg)	45	5	74	4885	4
eSteel	200-220	25-70	2.46	52	14(190°C/2.16kg)	45	5	63	4452	5
ePA (Nylon)	230-260	80-110	1.12	50	5(230°C/2.16kg)	57	196	57	1495	15
ePA-CF	240-260	80	1.24	120	10(250°C/5kg)	75	26	122	5160	12
ePA-GF	240-260	80	1.35	120	7(250°C/5kg)	101	17	121	4300	14
ePC	235-260	80-110	1.12	50	5(230°C/2.16kg)	57	196	57	1495	15
eFlex (TPU)	210-230	No Heat	1.12	/	/	52	500	/	/	/
eLastic (TPE)	210-230	No Heat	1.14	/	/	32	420	/	/	/
eTPU-98A	220-240	No Heat/(40-60)	1.15	/	/	55	420	/	/	/
eMate (PCL)	70-100	/	1.16	52	/	18	11	29	940	8
ePeek	380-410	120-140	1.30	152	10(380°C/5kg)	100	40	170	3500	7

3D printing photopolymer resin material	Viscosity (25°C, MPa·s)	Wavelength (nm)	Shrinkage of Vol. (%)	Density (g/cm³)	Tensile Strength (MPa)	Elongation at Break (%)	Bending strength (MPa)	Flexural Modulus (MPa)	Hardness (Shore D)
eResin-PLA	250-350	395-405	5.21-5.76	1.10-1.11	32-36	36-48	71-80	1.61-2.56	70D
eResin-JC	100-150	395-405	4.06-5.08	1.07-1.12	42-46	11-20	49-58	1.19-2.13	65D
eResin-DC	100-150	395-405	1.88-2.45	1.07-1.12	42-46	11-20	49-58	1.19-2.13	81D
eResin-NC	100-150	395-405	3.72-4.24	1.07-1.12	35-42	11-20	59-70	1.88-2.38	88D

CERTIFICATION



(Filament specification : 1.75mm / 2.85mm)
(Specifications of Resin Filaments : 500ML / 1000ML)

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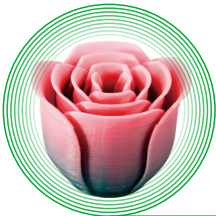
Product Manual
(Global 3D Printing Resources Platform)

3D FILAMENT



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PLA / PLA+

PLA Product features:

Non harmful, non-toxic, and environment friendly; Good material toughness, good strength; Suitable for complex models; Low material shrinkage rate, uniform diameter; Printing temp. is 190~210℃, lower than other materials.

PLA+ Product features:

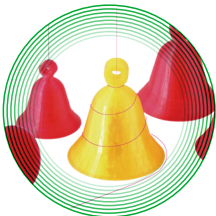
Extracted and purified from corn grain; High rigidity, good glossiness and transparency; Suitable for printing larger models; Toughness is 10 times more than the PLA on the market. No wiredrawing problems, the surface of the printouts will be smoother and more delicate; No cracking problem.



eABS Max

eABS Max Product features:

Non-toxic, tough, hard texture, with good temperature tolerance and creep resistant; Good melt fluidity, print smooth, nice abrasive resistance and dimensional stability, oil resistance; Compared with ABS and ABS+, it has better toughness, much improved in craze, edge warping, whole layer stripping situations when printing objects with large corner; Maintain 90% of physical performance in -20℃ low temperature and won't crisp; Waterproof, less than 1% of water absorption in normal temperature, which ensures flame retardant efficiency; Allow acetone polishing for appearance.



PETG

PETG Product features:

No smelling and non-toxic when printing, environment friendly; Little shrinkage (No warp); Low hygroscopic, Good toughness; High transparency and good gloss.

Application:

Toys; Electric and electronic products; Stationery; Cosmetics containers.



PVA

PVA Product features:

PVA is a biodegradable and water-soluble polymer product; Made from fossil resources. Non-toxic, no stimulation to the skin, and it is something in between plastic and rubber; Hot water (<60°) can accelerate its dissolution.

Solubility performance

Time	0h	1h	2h	3h
PVA				
HIPS				



ePC

ePC Product features:

High transparency; Nontoxic, environmental-friendly; High distortion temperature and high thermostability; Good malleability, easy to process.

Application:

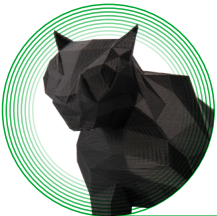
All kinds of FDM 3D printers.



ePA-CF

ePA-CF Product features:

Environmentally friendly, Nylon based, 20% carbon fiber. Printing smoothly, odorlessness, matte finish printing effect. High Strength, High Rigidity, Good Toughness, Wear-Resisting material, Fitting to print industrial parts. HD T Top 160℃, then suitable for the high temp occasion. Compared with Nylon, it has lower Shrink rate and distortion. Good flame resistance, Flame-retardant level: UL94-V2.



ABS / ABS+

ABS Product features:

High strength; Good toughness; Easy to color; Comosion resistance and heat resistance; Scratch resistance. The surface can be polished by using acetone and easy to be colored.

ABS+ Product features:

With good melt mobility and smooth printing; With high toughness, hardness and rigidity; Good scratch resistance; More suitable for printing objects with large corner; With good heat resistance and oil resistance;



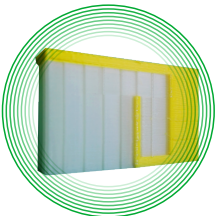
eASA

eASA Product features:

With a similarity in structure, eASA has excellent mechanical physical property as engineering plastics. Because the butadiene with double bond is replaced, eASA is given outstanding weather resistance, high temperature resistance and anti-UV performance. At the same time it works as an anti-static material that helps to gather less dust on surface.

Application:

With weather resistance, high temperature resistance, anti-static and anti-UV performance, eASA can be applied in car, gardening, electronic, architecture, furnishing and other areas.



eSoluble

eSoluble Product features:

Faster water solubility, more than twice as PVA; Lower moisture absorption rate, stable printing performance; Environmentally friendly materials; Wide range of compatible materials, compatible with PLA/PLA+/ABS/ABS+/nylon materials, etc.

Application:

Product models, craft supplies, medical fields, industrial parts, cartoon models, daily necessities, artistic creation, sculpture design.



HIPS

HIPS Product features:

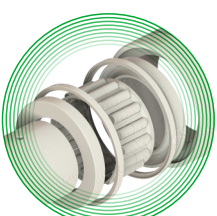
Soluble support materials and soluble in Limonence; With little water absorption, easy to preserve; Good toughness.



ePA (Nylon)

ePA Product features:

Transparent, Environmental-Friendly; High-Toughness, Oil Resistance; Chemical Resistance; Print Temp: 240℃~260℃.



ePA-GF

ePA-GF Product features:

ePA-GF adopted by short glass fiber reinforced nylon. Compared with pure nylon filaments, its mechanical strength, rigidity, heat resistance, creep resistance and fatigue strength all have been greatly improved, and the shrinkage of molding has been improved. What's more, hygroscopicity is reduced. Thus, it has an excellent printing performance.

Application:

ePA-GF is perfect to produce gear, bearings, air wing, pump, bicycle parts, automobile parts, fishing gear and other heat-resistant structural plastic parts for aerospace, automobile, mechanical engineering, chemical engineering.



eCopper

eCopper Product features:

Environmentally friendly; Less Shrinkage, printing products without warped edge; Lower molding temperature, better mobility, and easy processing; Metal texture after polished.

Application:

Product design and development, cultural relics sculpture imitation, arts and crafts, household items.



eAl-fill

eAl-fill Product features:

Environmentally-friendly, Less Shrinkage, printing products without warped edge; Lower molding temperature, better mobility, and easy processing; Metal texture after polished.

Application:

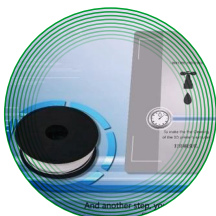
Product design and development, cultural relics sculpture imitation, arts and crafts, household items.



eMagnetic

eMagnetic Product features:

Easy to print, pretty appearance and stable size. After printing, it can be polished and looks like metallic appearance, Attracting magnet.



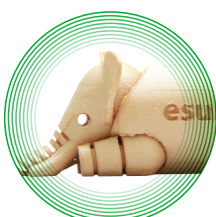
eClean

eClean Product features:

No smelling and non-toxic, environment friendly; Wide printing temperature range; Wide application range.

Application:

To clean the 3D printers extruder before and after printing; To function as an intermediary filament between different filament types with different extrusion temperatures; To function as an intermediary filament between the same filament type with different colours; To function as an intermediary filament between different filament types with wide differences in composition, colour etc.



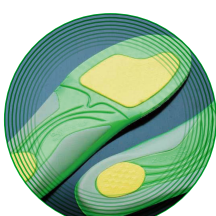
Wood

Wood Product features:

Good wood textures; No smelling when printing and non-toxic; Can be printed without heating bed, less part warping and curling; Low print temperature;

Application:

Artistic creation, Everyday items print, auto or mobile phone parts, decorative material.



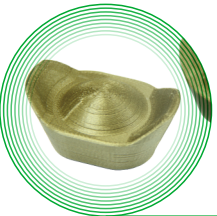
eFlex(TPU)/eElastic(TPE)

eFlex Product features:

Transparent, Environmental-Friendly, Soft texture, With high resilience. Fluent printing, Economic type products, High elastic, Good molding, Milk white.

eElastic Product features:

Fluent printing; High elastic; Economic type products; Good molding; Milk white.



Bronze

Bronze Product features:

No smelling when printing, environment-friendly and recyclable; Low material shrinkage rate, less warping and curling; Outstanding toughness and Young's modulus; Low processing temperature, good liquidity and processed easily; Excellent metallic bronze filament.

Application:

Weapon model; Sculpture model; Artwork; Antique artwork; Practical product.



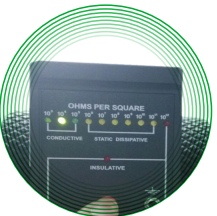
eSteel

eSteel Product features:

Adding stainless steel to 3D printing material PLA, eSteel indicates a fashion grey metal sense after polished. This environmentally friendly filament can be used as easily as PLA, hard to break, easy to print, there isn't any warping and cracking problem. However, you still need to be prepared to replace your nozzle and do 1st layer adjustment.

Application:

eSteel can be widely used in the fields of fashion creative design / industrial design / maker space and so on.



eConductive

eConductive Product features:

Shock And Dust Resistant.

Application:

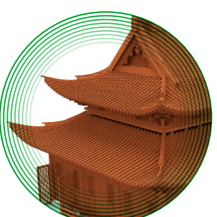
Electronic components and integrated circuits package, electromagnet shielding.



Color Change

Color Change Product features:

After the sun or ultraviolet radiation, sunlight / UV, never pale colored; When the loss of sunlight / UV light, went back to colorless; Optical variable line color effects and exposure duration; Continuous exposure time may be 5-12 hours. Color effect will fail. But each exposure time is very short, color effects can be used for several years; As the temperature rises or falls repeatedly change color; Colored state at low temperatures, when the temperature rose to colorless setting; Color temperature in the range of -20~80℃; It is a range (typically 4-6℃, while others are 2-3℃), is not a point; The basic life of properly stored up to five years.



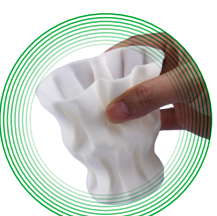
eBamboo

eBamboo Product features:

eBamboo has a matte, frosted texture, good melt fluidity, no stripping and can print smoothly; It has wood texture and wood aroma; Renewable, pest control, long life, very green and can be sprayed. It's suggested not to pause for too long and remove prints from the nozzle as soon as possible, or the wood powder will expand and burn.

Application:

Because eBamboo is renewable, pest control, long life, very green and can be sprayed, it can be applied in building materials, automobile industry, package and transport, storing, furnishing and other areas.



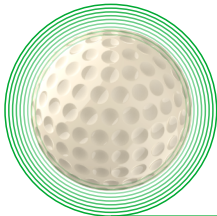
eTPU-98A

TPU98A Product features:

Good hardness, wide compatibility; low molding shrinkage, good dimensional stability.

Application:

Can be widely used in education and training fields, sports shoes, medical aids, art design.



eSmooth

eSmooth Product features:

Environmentally friendly, stable performance, more refined and brighter after polishing, complete decomposition, no carbonation and no residue in 600℃, can be used for meta casting.

Application:

The polishable filaments can be used to make business models with ornamental values, such as phone models, game models, electro device models, etc.



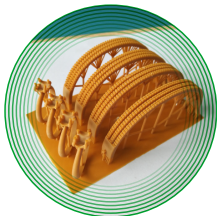
eResin-PLA

eResin-PLA Product features:

bio-based, small smell, safe, environmentally friendly and biodegradable. Low viscosity, better performance of flow, easy to clean. Tougher and more wear-resisting, no warping and distortion problem. Solidified by UV and normal visible light.

Application:

Fashion jewelry, arts, models/prototypes, functional components, it can meet the requirements of high precision and high strength.



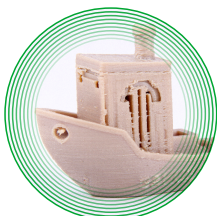
eResin-NC

eResin-NC Product features:

Fasting Printing speed; Low Shrinkage; Compatible to most DLP with LED UV; Low odor and no toxic; High hardness 88 shore D; Any color available.

Application:

Adopted in transparent prototypes, containers and lighting fixtures.



ePeek

ePeek Product features:

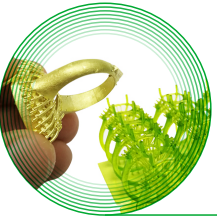
High strength, high hardness, high temperature resistance; good appearance, no impurities; good adhesion between layers when printing, not easy to appear edge warping, high printing accuracy, excellent print performance.



eMate (PCL)

eMate Product features:

Biodegradable, non-toxic, FDA approved material; Low melting temperature at around 60 Celsius. Can be used in 3D printer and our specially engineered low temperature 3D pen. Our 3D pen supports both eMate filament and regular PLA filament. The wastes of eMate can be reused for molding, DIY repairs, toys, decorations and 3D geometry model.



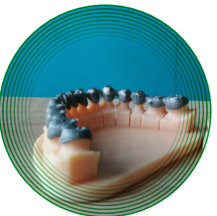
eResin-JC

eResin-JC Product features:

High precision, smooth surface; Casting easily and 100% no ash; Low Volume shrinkage property. Finest details with low odor. Fine flexibility, no crack after curing.

Application:

Professional adopted in jewelry casting, can be cast directly.



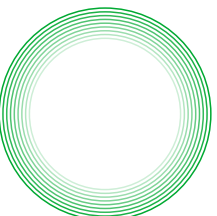
eResin-DC

eResin-DC Product features:

Special design for dental; High precision, smooth surface; Great casting performance, ash free; High hardness, resistant to shock; Low Volume shrinkage to 1.88%-2.45%; Compatible to most DLP with LED UV.

Application:

For dental dental mold making use, can be directly embedded casting.



Stay tuned for more materials.



Multicolor Filament: PLA、PLA+、ABS、ABS+、PETG、HIPS、eMate、COLOR CHANGE、eResin Series.....

Please email bright@brightcn.net if you are interested.