

M58/M68/K Tough Resin Instruction

1. The Product Description

M68 is known for its rigidity and toughness, and it is a white and non-yellowing material. The mechanical properties of the printed parts are comparable to tough thermoplastics, allowing holes to be drilled, screws to be inserted, and other high stress modifications, making it ideal for producing functional parts that will experience long term static load, transient stress or strain, but it is not suitable for underwater applications. Additionally, it is deeply loved by artists, toy producers, architects, 3D printing service providers, and others due to its beautiful pure white appearance.

M58 is a gray material known for its rigidity and toughness. The mechanical properties of the printed parts are comparable to tough thermoplastics, allowing holes to be drilled, screws to be inserted, and other high stress modifications, making it ideal for producing functional parts that will experience long term static load, transient stress or strain, but it is not suitable for underwater applications. This 3D printer resin boasts high molding precision, scratch resistance, and a smooth surface that preserves fine details from the original 3D file, so it's also well-suited for producing miniatures and action figures.

K resin is known for its excellent toughness and rigidity. This black material is not prone to overexposure under strong light sources, ensuring accurate size and sharp details. The mechanical properties of the printed parts are comparable to tough thermoplastics, allowing holes to be drilled, screws to be inserted, and other high stress modifications, making it ideal for producing functional parts that will experience long term static load, transient stress or strain, but it is not suitable for underwater applications.

2. Material Properties Data

	METHOD	M68	M58	K
Viscosity (25°C)	ASTM:D4212-10	365mpa.s	450mpa.s	365mpa.s
Shore Hardness	ASTM:D2240-05	86D	87D	82D
Tensile Strength	ASTM: D638-14	54.3MPa	52.3MPa	48.5MPa
Flexural Strength	ASTM: D790-10	63.8MPa	68.2MPa	60.8MPa
Elongation at Break	ASTM: D638-14	13.90%	12.30%	16.80%
Notched IZOD	ASTM:D256-10	58.1J/m	51.4J/m	58.4J/m
HDT(0.455Mpa)	ASTM:D648-18	65°C	65°C	60°C

3. Printing

Printing Settings: You can download the resin printing parameters from RESIONE's official website. The detailed operations are as follows: RESIONE's official website —>Support

—>Settings

4. Cleaning and Post-curing

Cleaning: Cleaning with the ethanol(concentration $\geq 95\%$), or IPA. Cleaning and soaking time: ≤ 5 min.Please use compressed air to dry the prints after cleaning it.



Post-curing: Take the 40W post-curing box power as an example, the post-curing time is as follows.

	M68	M58	K
Post-curing Time (40W)	10min	20min	30min

(Adjust the post-curing time according to the power of the post-curing box, the greater the power, the shorter the time)

Attentions:

- If you want the toughness of the prints to be better, reduce the post-curing time; If you need higher hardness of the prints, you need to increase the post-curing time, but this will also reduce the toughness of the prints.
- The resin prints will be fragile after post-curing. It is not recommended to apply force to the prints immediately. Just need to wait for a while until the internal stress of the prints is completely released.
- If the post-curing time is too long, the resin prints will turn yellow and irreversible. The slight yellowing caused by normal post-curing can automatically fade away after a period of time. Putting the prints in continuous boiling water can make it quickly fade away.
- In high temperature and high humidity weather, the printed part will absorb moisture and become soft or even deformed if not treated in time. It is recommended to deal with it in time after printing. If the above situation occurs, you can carefully clean and blow dry the printed part and then use the oven to bake at 60°C for half an hour, and then post-curing.

5. Application

M58 resin

- Movable figures/GK
- Functional parts
- Assembled parts
- Miniatures
- Dental models

M68 resin

- Figures/GK
- Building models

- Artworks
- Shell
- Functional parts
- Movie props

K resin

- Figures/GK
- Shell
- Functional parts
- Precision parts

6. Storage of Prints

- a. Resin prints, like traditional plastics, become hard and brittle when the ambient temperature is low. The prints can maintain normal mechanical properties at 25-35°C.
- b. If you need to keep the resin prints with good toughness for a long time, it is recommended to store them in an airtight bag or apply a layer of waterproof paint.
- c. The prints should not be placed in a humid environment for a long time, otherwise they will absorb water and soften. Use an airtight bag or waterproof paint to protect your prints effectively.

For more questions, please contact support@godsaid3d.com