Technical Data Sheet

Product Details

Product name：Toughness Engineering Resin

Model number：ST-71E

Applicable industrial:Suitable for jewelry industry, dental, clock, glasses, teaching and scientific research, toy design, handicraft design, industrial parts design, etc

Manufacturer：Shenzhen Yongchanghe Technology CO., LTD.

Add: 1001, Huaide international building, No. 73, Fuyong section, Guangshen Road, Fuyong community, Fuyong street, Bao'an District, Shenzhen

Tel: 0755-27889946

Zip code: 518103

Product Advantages

Excellent strength, outstanding flexibility, impact resistance, and wide compatibility.

High precision, good flexibility, not easily broken, and excellent ductility.

Product Technical Parameters before Curing

Viscosity: 500-650mPa • s (NDJ-8S rotary rheometer（25℃）)

Density: 1.05~1.25g/cm$_3$ (densitometer(25℃))

Principle of 3D Printing

The ST-71E series UV-cured additive manufacturing resin is cured layer by layer using a high-resolution UV projector to create 3D printed objects. The forming process involves equipment with a resin tank for holding the resin. The imaging system is placed below the resin tank, with its imaging surface just at the bottom of the tank. Through energy and graphic control, each thin layer of resin (50μm/25μm) can be cured with a shape identical to the previous cross-section.

Above the resin tank, there is a lifting mechanism that raises the solidified resin to adhere to the build plate or the previously formed resin layer. This layer-by-layer exposure and lifting process generates a three-dimensional solid, resulting in the UV-cured additive manufacturing resin object.

Recommended Print Parameters

Recommended printing time: Bottom exposure time 20-30s, layer exposure time 2.5s-3.5s. (based on the printer with intensity of 3500-4500μw/㎠)

Bottom Lift Distance: 6mm

Lifting Distance: 6mm

Bottom Lift Speed: 60mm/min

Lifting Speed: 80mm/min

Retract Speed: 150mm/min

Wavelength: 385~410nm

Molding Test Requirements and Technical Parameters after Molding

Molding Test Environment and Standard:

①Temperature: 23±2℃

②Relative humidity: 50%RH±5%RH

③The standard of the test piece: ASTM

④Post curing condition: The test piece was placed in water under 405nm ultraviolet radiation of 200mw/cm² for one minute.

Technical Parameters after Molding:

Maximum force(KGF): 95.8±10%

Tensile strength(MPa): 22.58±10%

Deformation of maximum point of force(mm): 106.27±10%

Elongation at yield point(%): 7.387±10%

Elongation at break(%): 187.13±10%

Maximum bending strength(MPa): 25.48±10%

Flexural modulus(MPa): 672.86±10%

Hardness(Shore D)：73-75

Impact strength(j/m): 47±10%

Tensile modulus：267.74±10

Warning

1. This product is disposable and cannot be reused.

2. This product should not be in contact with eyes, skin or clothing, and should not be tasted or eaten. Use only in good ventilation, please pay attention to air circulation, and take protective measures. Clean thoroughly after operation.

3. This product is liquid and has a slight odor. Please wear a mask when using it to avoid inhalation of aerosol and infection.

4. This product should be stored in an airtight container, sealed immediately after use, and placed in a dry and well-ventilated place without exposure to sunlight.

5. In case of accidental inhalation of this product, leave the scene in time, quickly transfer to a place with fresh air, in case of adverse reactions, go to the hospital for treatment in time.

6. If swallowed this product accidentally, do not induce vomiting, keep a state of rest, timely sent to the hospital treatment.

7. In case of contact with skin, wash skin thoroughly with soapy water or seek medical advice.

8. In case of contact with eyes, open eyelids immediately, rinse with soapy water for about 20 minutes and seek medical advice immediately.

9. Waste water/waste shall be disposed of in accordance with local environmental regulations.

Storage:

Please seal the product and store it in a dry, well-ventilated room with no corrosive gas, keep away from heat source, keep away from moisture and avoid sun exposure.
Shelf life 2 year. (The product is best stored at 25~30℃)