# eResin-PMMA Like

Technical Data Sheet

High transparency and anti-yellowing. The visual effect is similar to transparent thermoplatic such as PMMA. Excellent transparency after post-processing( polishing, spraying UV high-transmitting oil). Excellent internal transparency is more suitable for shape and assembly verification. Can print transparent models with high definition and fine details.

| Material Status | Mass Production | |
|---|---|---|
| Characteristics | • High transparency<br>• Yellowing resistance | |
| Applications | • Optics<br>• Lighting | • Hearing<br>• Mechanical |
| Appearance | • Multiple Colors | |
| Form | • Resins | |
| Processing method | • (surface exposure molding) LCD | |

| | Testing method | Typical value | |
|---|---|---|---|
| **Physical Properties** | | | |
| Density | GB/T 4472 | 1.05-1.15 | g/cm$^3$ |
| Viscosity | GB/T 22235 | 300 | mPa•s |
| Hardness | ASTM D2240 | 70 | Shore D |
| **Mechanical Properties** | | | |
| Tensile Strength | ASTM D638 | 58 | MPa |
| Elongation at Break | ASTM D638 | 10 | % |
| Flexural Strength | ASTM D790 | 30 | MPa |
| IZOD Impact Strength | ASTM D638 | 15 | J/m |
| **Thermal Properties** | | | |
| Heat distortion Temperature | GB/T 1634 | N/A | ℃ |

Wuhan University Building A403-I,A901,No.6 Yuexing 2 Road,Nanshan District,Shenzhen,Guangdong

China

Tel +86 755 86581960
fax +86 755 26031982
Email: bright@brightcn.net

www.esun3d.net

## Recommended printing parameters

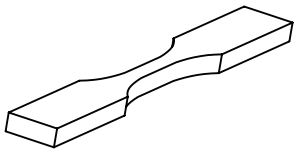
| Settings | Machine Type<br>Low Light Intensity | Medium Light Intensity | High Light Intensity<br>(Monochrome LCDScreen) |
|---|---|---|---|
| Representative Machine | AnyCubic<br>Photon | eSUN LCD 3.0<br>Nova Bene 4<br>Creality LD-002R | Anycubic MONO X<br>ELEGOO Saturn<br>Phrozen Sonic Mini |
| Exposure Time/s | 18-24 | 12-16 | 4-6 |
| Bottom Layer Count | | 3-5 | |
| Bottom Exposure Time | ⩾80 | ⩾60 | ⩾30 |
| Lifting Distance/mm | 5.5&6-inch screen：5-6 or Higher | 8.9&13.3-inch screen：8-12 or Higher | |
| Lift Speed/mm•min$^{-1}$ | 90-150 | 90-120 | 50-90 |
| Retract Speed/mm•min$^{-1}$ | | 150-200 | |

1. The above parameters are for reference only. The performance of the cured material will be affected by factors such as equipment, environment, parameter settings, post-processing methods, detection methods, etc., which will cause big differences. Please contact us if necessary;2. Shake the resin well before use; please recycle the resin in time after printing; avoid prolonged soaking of the molded parts in the cleaning agent;3. It is not recommended to add other ingredients or mix them to the resin to avoid molding failure or other problems;4. The resin should be stored in a cool, dark place, and sealed with an opaque container;5. The photopolymer resin is made of chemicals, which has a certain odor and skin irritation. Pay attention to protection during transportation and use. If the resin accidentally touches your skin or eyes, please rinse with plenty of water, and the skin can be cleaned with detergent, decontamination powder, etc.; if the allergic reaction is severe or even enters the mouth or nasal cavity, please seek medical attention immediately;6. The model should be printed at a room temperature of 25-35 degrees. IF it is winter, it is recommended to turn on the air conditioner for printing.

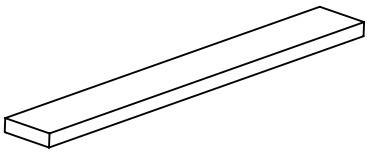
## Matters needing attention

1.Shake well before printing 2.Resins need to avoid exposure to light for long time,stored in a place with high air humidity,the printer should be covered when printing, the material in the tank to avoid indoor light exposure. the material in the tank to avoid indoor light exposure 3.After the model is printed and cleaned with 95% alcohol, it needs to be cured with UV lamp for 1-2min to avoid the influence of air humidity on the model. The printed resin needs to be stored in a bottle alone and should not be put back into the original bottle 4.If the post-curing time is too long, it can be placed for a period of time, and the model will fade yellow. You can also use the microwave to retreat the yellow and red, soak in hot water and put it in the microwave for 30 seconds 5. Post-processing steps: first grinding and polishing, generally from low-eye sandpaper grinding to high-eye sandpaper grinding, such as 400 mesh →600 mesh →800 mesh (the higher the number of grinding mesh, the higher the transparency of spraying oil), grinding and then spraying anti-UV high light oil can achieve the best transparency effect "

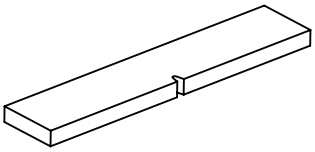
## Mechanical Properties



Tensile testing specimen ASTM D638



Flexural testing specimen ASTM D790



IZOD Impact Strength ASTM D638

The physical properties, mechanical properties, and thermal properties of the resin are obtained based on the printing spline test.

## Notice

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