

## Ceramic Crown Resin

### 陶瓷牙冠树脂

#### \*Product Introduction 产品介绍

Ceramic crown resin is a low skin irritation and low skin allergenic UV curable (385-405 nm) resin for 3D printing. It is a versatile ceramic-filled biocompatible material and has low shrinkage, temperature resistance, high hardness physical properties for dental application, indicated for temporary and permanent single units (crowns, inlays, onlays, and veneers) and bridges, and denture teeth. 陶瓷冠树脂是一款具有低皮肤刺激性与低过敏性且适用于 385-405 nm 波段的紫外光固化 3D 打印树脂, 该树脂是一款多功能陶瓷填充的生物相容性材料, 具有低收缩、耐温、高硬度、抗冲击等力学性能, 适用于临时和永久性修复单元 (牙冠、嵌体、高嵌体和贴面)、牙桥和假牙。

#### \*Resin Property 树脂特性:

Pre-cure 固化前(液态):

| Measurement<br>测试项目                   | Test method<br>测试方法 | Value<br>测试数值 |
|---------------------------------------|---------------------|---------------|
| Viscosity 粘度, cps (@25°C)             | ASTM D 2196         | 1500-2000     |
| Density 密度, g/cm <sup>3</sup> (@25°C) | ASTM D 792          | 1.55-1.65     |

Post-cure 固化后(固态)

| Measurement<br>测试项目                          | Test method<br>测试方法 | Value<br>测试数值 |
|----------------------------------------------|---------------------|---------------|
| Hardness 硬度, Shore D                         | ASTM D 2240         | 93-95         |
| Flexural modulus 弯曲模量, Mpa                   | ASTM D 790          | 6000-7000     |
| Flexural strength 弯曲强度, Mpa                  | ASTM D 790          | 110-140       |
| Tensile modulus 拉伸模量, Mpa                    | ASTM D 638          | 1100-1500     |
| Tensile strength 拉伸强度, Mpa                   | ASTM D 638          | 70-80         |
| Elongation at break 断裂伸长率, %                 | ASTM D 638          | 5-8           |
| Impact strength, notched Izod, J/m<br>缺口冲击强度 | ASTM D 256          | 25-45         |
| Heat deflection temperature, °C<br>热变形温度     | ASTM D648 @66PSI    | 100-110       |

#### \*Parameter Suggestion 参数建议:

| Equipment<br>设备名称 | Layer<br>Height<br>层厚 | Bottom<br>Exposure<br>Time | Bottom<br>Layer<br>Count | Exposure<br>Time<br>一般层 | Lifting<br>Distance | Light-off<br>Delay<br>灭灯延 | Lift<br>speed<br>电机速 |
|-------------------|-----------------------|----------------------------|--------------------------|-------------------------|---------------------|---------------------------|----------------------|
|-------------------|-----------------------|----------------------------|--------------------------|-------------------------|---------------------|---------------------------|----------------------|

|                       | (mm) | 底层曝光时间<br>(s) | 底层数<br>(layers) | 曝光时间<br>(s) | 抬升高<br>度<br>(mm) | 时<br>(s) | 度<br>(mm/min) |
|-----------------------|------|---------------|-----------------|-------------|------------------|----------|---------------|
| Piocreat<br>DJ-68     | 0.05 | 20-60         | 3-5             | 6.5         | 8-10             | 5-8      | 60-300        |
| Piocreat<br>DJ-89Plus | 0.05 | 20-60         | 3-5             | 7.3         | 8-10             | 5-8      | 60-300        |
| Piocreat<br>D158      | 0.05 | 10-40         | 2-3             | 6.5         | 7-9              | 5-8      | 60-300        |

#### **\*Post-Processing Procedure and Note 后处理与清洗:**

1. The print model should be cleaned with absolute ethanol/isopropanol and can be cleaned with a low-frequency ultrasonic cleaner. If high-frequency and high-power ultrasonic cleaning is used for the model, it may cause certain damage to the surface of the model; 将模型利用无水乙醇或异丙醇超声波震荡机清洗，切勿以高频震荡或用力刷洗模型以免模型表面细节遭受破坏。
2. Thoroughly blow the model dry with a hair dryer or the like; 用气枪或吹风机移除表面清洗液。
3. It is recommended to remove the support for model with supports first, and then post-cure treatment. If you remove the supports after it's been post-cured, it will easily cause damage to the contact surface of the support point; 后固化前先移除大部分支撑，待后固化完成后进行细节支撑移除与表面修饰处理。
4. For some occasions where certain toughness is required, you can choose to cure with UV lamp for 5 minutes. The printed parts should be kept in a cool dry place. 根据选用的后固化调整对应的后固化时间。

#### **\*Safety Precautions 安全注意事项:**

1. Eye Contact: Immediately flush with plenty of clean water (under eye lids) for at least 20 minutes. Hold eyelids apart to ensure flushing. Washing within one minute of contact is essential to achieve maximum effectiveness. Seek medical attention immediately. 如眼睛不慎接触到树脂，请立即用清水清洗，清洗后如仍感觉不适请立即就医。
2. Skin Contact: Remove contaminated clothing and rinse contact area thoroughly with soap and water. 如不慎接触到衣物请立即更换以肥皂与清水立即清洗皮肤与衣物。
3. 3D resin is not approved for use with food, drink, or medical application on the human body. 请勿将树脂与食品接触。
4. For additional information please see the Material Safety Data Sheet. 详情请参考物质安全数据表。

#### **\*Storage and Use 储存与使用:**

1. Below 25 °C cold storage for 18 months, sensitive to visible light, general illumination visible light will initiate polymerization reaction. 树脂应在 25 °C 条件下避光储存，对可见光敏感，容易引发聚合反应，保质期 18 个月。

2. It is recommended to shake well before using and print at a temperature of 18-35℃。建议使用前摇匀树脂，在环境温度 18-35℃下进行打印。