

[Phrozen Resin User Guide]

Phrozen Xmas Special Resin (Snowman White, Santa Red, Elf Green)

Outline

Before printing the perfect object, it is important to first understand the material limitations we are handling and how it can be successfully printed under various conditions. With this in mind, Phrozen provides the following design suggestions to help you better understand the properties of each material and how you can best utilize them to bring your wildest creation to life.

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Section 1

TDS

Liquid Properties			
Viscosity at 25°C (77°F)	cP	600 - 700	ASTM D1475
Liquid Density	g/cm³	1.12	ASTM D7867

**All specifications have been tested in a laboratory.*

Section 2

Printing

Printing Parameters

Printer	Sonic mini / Sonic mini 4K
Layer Height	50μm
Exposure Time	9~11 s
Bottom Exposure Time	20~30 s
Light-off Delay	15 s
Lift Distance	6 mm
Lifting Speed	60 mm/min

Printer	Sonic Mini 8K
Layer Height	50μm
Exposure Time	8~10 s
Bottom Exposure Time	20~30 s
Rest Time After Retract	5 s
Lift Distance	6 mm
Lifting Speed	60 mm/min

Printer	Sonic Mighty 4K
Layer Height	50μm
Exposure Time	8~10 s
Bottom Exposure Time	20~30 s
Light-off Delay	15 s
Lift Distance	8 mm
Lifting Speed	60 mm/min

Printer	Sonic Mighty 8K
Layer Height	50μm
Exposure Time	8~10 s
Bottom Exposure Time	20~30 s
Rest Time After Retract	3 s
Lift Distance	8 mm
Lifting Speed	60 mm/min

Printer	Sonic Mega 8K
Layer Height	50μm
Exposure Time	9~11 s
Bottom Exposure Time	25~35 s
Rest Time After Retract	5 s
Lift Distance	8 mm
Lifting Speed	45 mm/min

* These resin parameters have been determined with a temperature of 25°C and a relative humidity of 75%. A test print was performed in a well-ventilated indoor space.

Printing Suggestions

1. Due to the soft characteristic of the resin, it is not suitable for printing large and solid models.
2. If you need to print larger models, please adjust your support settings:
 - a. Top support > 0.8 mm
 - b. Middle support > 1.2 mm
 - c. Density > 70%

Cleaning

After removing the printed object from the building stage, use an ultrasonic cleaner and 95% alcohol for 60 seconds to remove uncured resin from the surface. Make sure that the object has been thoroughly cleaned, then leave it in a dark place for up to 30 minutes or use an air gun to immediately dry the printed object.

Post-Curing

Use Phrozen post-curing lamps (Cure V2, Cure Luna, Cure Mega) or other post-curing lamps with the same wavelength to cure printed objects. Cure for 30 minutes to achieve good mechanical properties and precision.

Section 3

Foaming

1. The resin will foam and turn color when exposed to high temperatures. Use a heat gun to heat the resin and create the foaming and color gradient effects.
2. Use a variety of heat gun nozzles to control the foaming and create different effects.
3. Excessive foaming may cause breakage.
4. Please handle the heat gun with precautions.

Picture 1: Before foaming



Picture 2: Use a heat gun to create the foaming effects



Picture 3: After foaming



Section 4

Applications











【Phrozen Resin User Guide】 【Phrozen樹脂 使用者指南】

聖誕樹脂 (雪人白、聖誕紅、精靈綠)

大綱

在列印一個理想的物件前，我們可以先了解材料在各條件下能完整列印出物件的極限在哪；因此**Phrozen**提供以下設計建議，幫助您列印物件時大幅提升成功率，並印製出更符合您心目中的物件。

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Section 1

TDS

Liquid Properties			
Viscosity at 25°C (77°F)	cP	600 - 700	ASTM D1475
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Section 2

列印

列印參數

測試機台	Sonic mini / Sonic mini 4K
Layer Height	50µm
Exposure Time	9~11 s
Bottom Exposure Time	20~30 s
Light-off Delay	15 s
Lift Distance	6 mm
Lifting Speed	60 mm/min

測試機台	Sonic Mini 8K
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*此樹脂參數表現是在攝氏溫度約25度, 濕度約75% 通風良好的室內空間進行。

列印建議

1. 樹脂特性較軟，故不適合列印較大、較厚等實心物件
2. 若需列印大型、實心等物件，需調整支撐
 - a. 支撐頂部建議 0.8mm 以上
 - b. 支撐中間建議 1.2mm 以上
 - c. 密度建議 70% 以上

清洗步驟

1. 超音波機+95%酒精清洗60秒
2. 清洗後靜置30分鐘
3. 空心薄件請務必洗淨內部

二固

至少30分鐘。

Section 2

發泡

1. 樹脂成品遇熱可以發泡變色，可用熱風槍對成品加熱
2. 視熱風槍風口大小，可局部對成品發泡變色，達成漸層效果
3. 發泡過度可能導致成品斷裂
4. 加熱時小心燙手

圖一：發泡前



圖二：熱風槍加熱發泡



圖三：發泡後



Section 3

應用範例









