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› SuperPCS 3D Printer Resin User Manual

3DMaterials ENGR-C27L

SuperPCS 3D Printer Resin User Manual

Model: ENGR-C27L | Brand: 3DMaterials

Toughest and Fastest 3D Printer Resin for High-Performance Printing

1. INTRODUCTION TO SUPERPCS RESIN

SuperPCS 3D Printer Resin is engineered by 3DMaterials to deliver exceptional toughness, speed, and precision for a wide range of 3D printing applications. This resin is designed for industrial production parts, offering superior mechanical properties and compatibility with various LCD 3D printers.



Figure 1: SuperPCS Grey Resin bottle and a sample 3D printed part.

Key Features:

- **Tough & Durable:** SuperPCS boasts 1.8GPa tensile and 2.8GPa flexural modulus with 15% elongation at break,

ensuring robust and long-lasting prints.

- **Fast Printing:** Achieve rapid printing speeds of 50um layers in just 1.5 seconds with monochrome LCD 3D printers, significantly reducing print times and energy consumption.
- **Enhanced Productivity:** The super-fast printing capability can boost the productivity of 3D printing farms by at least 40% or more.
- **8K Precision:** Its extremely low viscosity enables high-resolution 8K 3D printing with a fine 22um resolution, capturing intricate details.
- **Broad Compatibility:** Unique photosensitization technology ensures SuperPCS is compatible with all regular and mono LCD 3D printers.

SuperPCS[®]

2.2 lbs (1,000 g) / 11.0 lbs (5,000g)



Toughness

Unmatchable 1.8 GPa modulus with 15% elongation at break.



Super Fast Printing

World fastest engineering resins with 50um in 1.3 seconds.



8K Precision

High-resolution 8K 3D printing with 22um resolution.



Low Viscosity

Excellent fluidity suitable for fast and large-scale 3D printers.



Compatibility

Photon, Creality, Phrozen, Prusa, QIDI, Photocentric, ELEGOO, LONGER, NOVA, Voxelab and more.

Figure 2: Overview of SuperPCS Resin's core advantages.

About 3DMaterials:

3DMaterials is a leading innovator in 3D printing materials, dedicated to developing advanced resins through rigorous research and testing. Watch the video below to learn more about our commitment to innovation.

Your browser does not support the video tag.

Video 1: "3DMaterials Where Innovation Takes Place" - An overview of 3DMaterials' development and testing processes for their resins.

2. PRODUCT SPECIFICATIONS

Mechanical Properties:

The following table details the mechanical properties of SuperPCS resin after post-curing. Note that properties may vary depending on part geometry, printing orientation, and specific print settings.

Mechanical Properties

	Metric ¹⁾	Imperial ¹⁾
	Post-Cured ²⁾	Post-Cured ²⁾
Tensile Strength at Break	48 MPa	6,962 psi
Secant Modulus	1,702 MPa	247 ksi
Elongation at Break	< 15.0 %	< 15.0 %

1) The properties of the material can change depending on the part geometry, printing orientation, and print settings.
2) Data were obtained from parts printed using a printer with mono LCD, 50 μm, and post-cured with 20mW/cm² of 395 nm LED light for 10 minutes.



Figure 3: Mechanical Properties of SuperPCS Resin.

General Specifications:

Specification	Detail
Product Dimensions	3.35 x 3.35 x 10.04 inches; 2.2 Pounds
Item Model Number	ENGR-C27L
Date First Available	August 15, 2022
Manufacturer	3DMaterials Co., Ltd.
ASIN	B09TS859T7
Country of Origin	Korea, Republic of
Brand	3DMaterials
Material	3D Printer Resin
Color	Grey
Item Weight	1000 Grams
Compatible Devices	3D Printer



High Precision,
Durable 8K Resin for
Industrial Applications

Figure 4: Examples of high-precision, durable parts printed with SuperPCS resin.

3. PREPARATION FOR USE (SETUP)

Proper preparation is crucial for safe and successful 3D printing with SuperPCS resin. Always follow these guidelines:

1. Always wear protective gloves when handling the products.
2. Keep the products away from direct sunlight or other light sources.
3. Read this manual carefully before using the products.



Figure 5: Front and back of the SuperPCS Resin bottle.

4. OPERATING INSTRUCTIONS

Follow these steps for optimal printing results with SuperPCS resin:

1. Shake the product well before use to ensure proper mixing of components.
2. Check the recommended exposure conditions for your specific 3D printer model. Refer to the detailed setting chart provided by 3DMaterials.
3. Use Isopropyl Alcohol (IPA) or any type of alcohol to remove excess resin from your prints after printing.
4. Dry the printings completely before post-curing.
5. Post-cure the printings with a UV light source or a dedicated post-curing unit to achieve final material properties.

Printer Compatibility and Settings:

SuperPCS resin is designed for broad compatibility with various mono and RGB LCD 3D printers. Below are general guidelines and specific exposure settings for common printer models. For the most up-to-date and comprehensive settings, please refer to the official setting chart:

[Download Official Setting Chart
\(PDF\)](#)

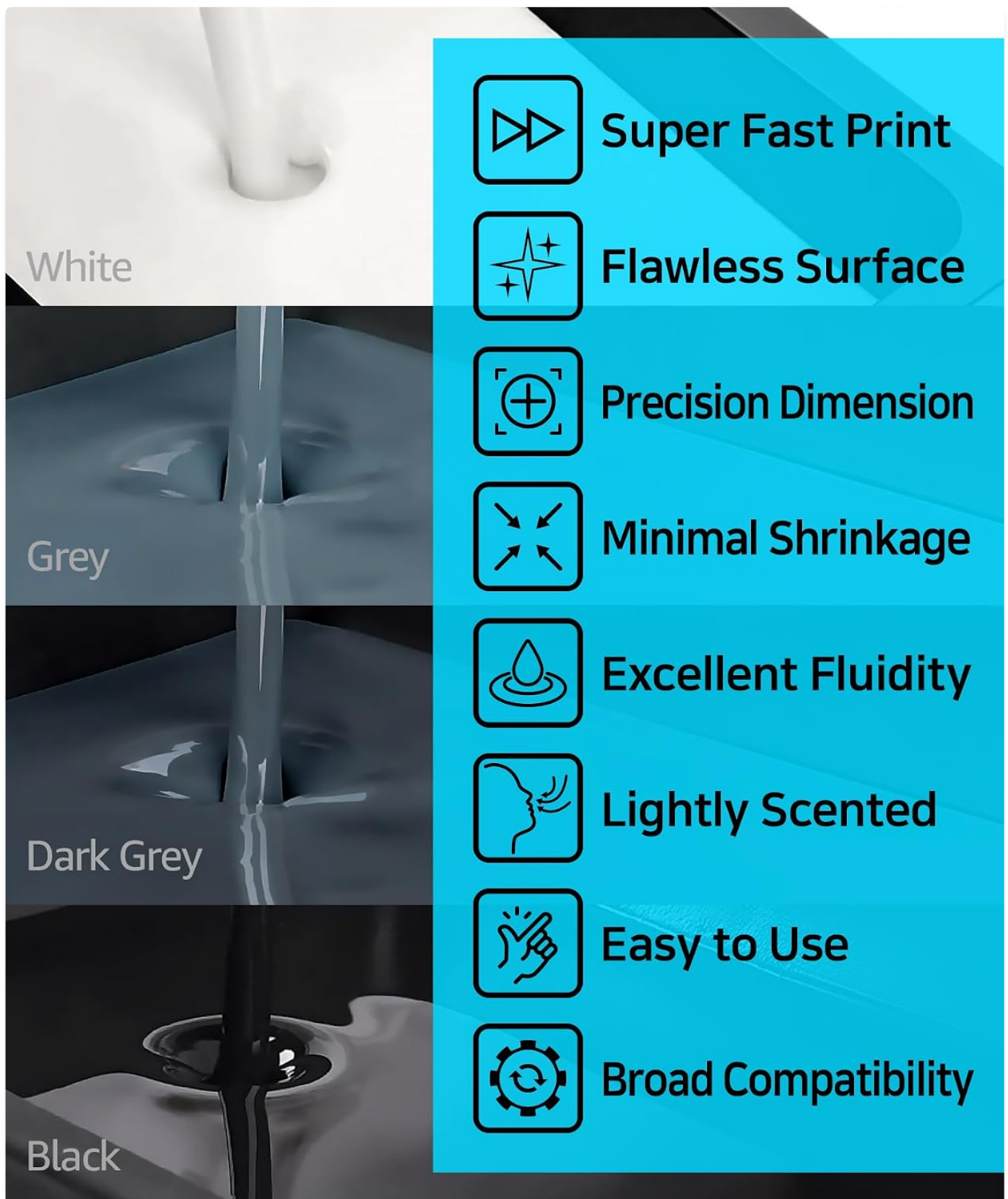


Figure 6: Broad compatibility with major 3D printer brands.

Example Exposure Settings (50um Slicing):

Note: These are general guidelines. Optimal settings may vary based on printer condition, ambient temperature, and specific print requirements.

SuperPCS® C27L Grey

3D Printer Brands & Makers	50um Slicing ^①	
	Exposure for Bottom	Exposure for Layers ^②
Voxelab Proxima 8.9	20.0s	4.0s
LONGER Orange 30	40.0s	7.0s
Zortrax Inkspire	40.0s	8.0s
Prusa SL1	40.0s	6.5s

① Sliced Layer Thickness
 ② Adjust the Exposure Time by ±15% Dependent on Printers
 ③ These are maximum times, Shorten the Exposure Time If Thin Film Formed on Vat Film
 ④ Recommended Number Pigment Drops per 100mL of Clear Resins for Standard Color and Exposure Time

Figure 7: Creality and Elegoo Printer Settings.

SuperPCS® C27L Grey

3D Printer Brands & Makers	50um Slicing ^①	
	Exposure for Bottom	Exposure for Layers ^②
ELEGOO Saturn 8K	10.0s	1.2s
ELEGOO Saturn 2	10.0s	1.5s
ELEGOO Saturn 3 Ultra	10.0s	1.1s
ELEGOO Saturn 4 Ultra	10.0s	0.8s
Phrozen Sonic Mini	15.0s	2.6s
Phrozen Sonic Mini 4K	15.0s	2.6s
Phrozen Sonic Mini 8K	10.0s	1.5s
Phrozen Sonic Mighty 4K	20.0s	1.5s
Phrozen Sonic Mighty 8K	20.0s	1.2s
NOVA3D Bene4	15.0s	4.4s
NOVA3D Bene4 Mono	15.0s	2.0s
NOVA3D Elfin 2 Mono SE	15.0s	2.2s
Voxelab Proxima 6.0	20.0s	2.6s

① Sliced Layer Thickness
 ② Adjust the Exposure Time by ±15% Dependent on Printers
 ③ These are maximum times, Shorten the Exposure Time If Thin Film Formed on Vat Film
 ④ Recommended Number Pigment Drops per 100mL of Clear Resins for Standard Color and Exposure Time

Figure 8: Anycubic Photon Printer Settings.

SuperPCS® C27L Grey

3D Printer Brands & Makers	50um Slicing ^①	
	Exposure for Bottom	Exposure for Layers ^②
ANYCUBIC Photon Mono	10.0s	1.3s
ANYCUBIC Photon Mono 4K	10.0s	1.1s
ANYCUBIC Photon Mono 2	10.0s	1.6s
ANYCUBIC Photon Mono X (50% LED)	20.0s	1.8s
ANYCUBIC Photon Mono X 6K (50% LED)	20.0s	1.8s
ANYCUBIC Photon Mono X2	10.0s	1.4s
ANYCUBIC Photon Mono M5s Pro	10.0s	1.1s
ANYCUBIC Photon Mono M7 Pro	10.0s	0.9s
ANYCUBIC Photon M3	10.0s	1.2s
ANYCUBIC Photon M3 Premium	10.0s	1.6s
ANYCUBIC Photon M3 Max	10.0s	2.0s
ANYCUBIC Photon Ultra	10.0s	1.2s
ANYCUBIC Photon D2	10.0s	1.3s

① Sliced Layer Thickness
 ② Adjust the Exposure Time by ±15% Dependent on Printers
 ③ These are maximum times, Shorten the Exposure Time If Thin Film Formed on Vat Film
 ④ Recommended Number Pigment Drops per 100mL of Clear Resins for Standard Color and Exposure Time

Figure 9: Elegoo Saturn, Phrozen, NOVA3D, and Voxelab Printer Settings.

SuperPCS® C27L Grey

① Sliced Layer Thickness
② Adjust the Exposure Time by ±15% Dependent on Printers
③ These are maximum times, Shorten the Exposure Time If Thin Film Formed on Vat Film
④ Recommended Number Pigment Drops per 100mL of Clear Resins for Standard Color and Exposure Time

3D Printer Brands & Makers	50um Slicing①	
	Exposure for Bottom	Exposure for Layers②
Creality LD-002R	40.0s	7.0s
Creality LD-002H Mono	10.0s	0.8s
Creality Halot One	15.0s	1.5s
Creality Halot Sky	10.0s	1.0s
Creality Halot MAGE	20.0s	0.7s
Creality Halot MAGE S	15.0s	1.0s
ELEGOO Mars	40.0s	7.8s
ELEGOO Mars Pro	40.0s	8.0s
ELEGOO Mars 2	15.0s	2.2s
ELEGOO Mars 2 Pro Mono	15.0s	2.2s
ELEGOO Mars 3 Pro	10.0s	1.5s
ELEGOO Mars 4	10.0s	0.8s
ELEGOO Saturn	20.0s	1.7s

Figure 10: Voxelab, LONGER, Zortrax, and Prusa Printer Settings.

5. STORAGE AND HANDLING (MAINTENANCE)

Proper storage and handling of SuperPCS resin will ensure its longevity and performance:

- 1. Store the products at 10-25°C (50-77°F) in a dry, dark room.
- 2. Keep the products away from direct sunlight or other light sources.
- 3. Do not use products after the expiration date indicated on the label.
- 4. This product is not harmful to the environment when it is solid. After printing, residual products should be disposed of in accordance with local waste management regulations.

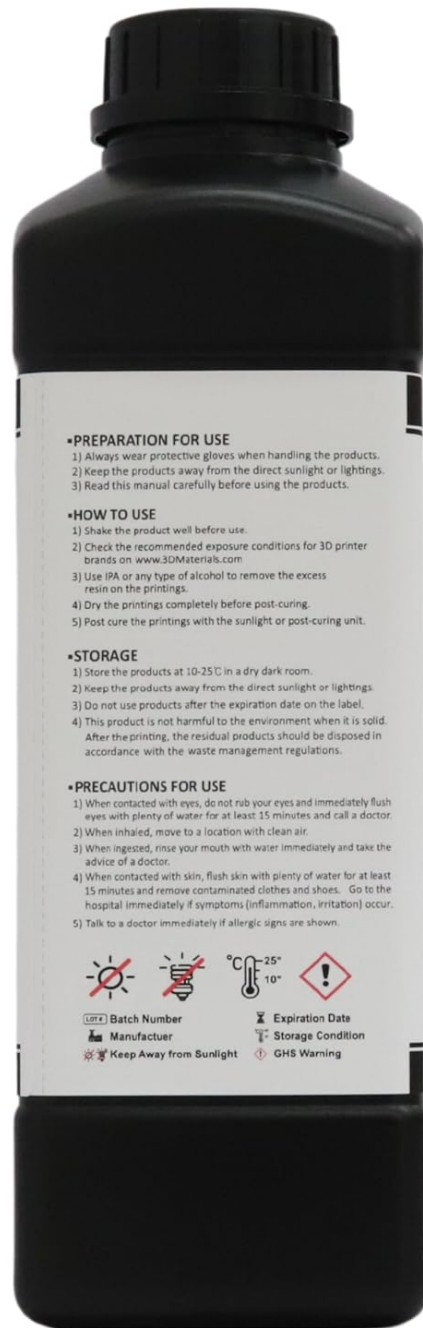


Figure 11: Detailed instructions on the product label.

6. SAFETY PRECAUTIONS

Adhere to the following safety precautions to prevent injury or adverse reactions:

1. **Eye Contact:** If contacted with eyes, do not rub your eyes and immediately flush eyes with plenty of water for at least 15 minutes. Call a doctor.
2. **Inhalation:** If inhaled, move to a location with clean air.
3. **Ingestion:** If ingested, rinse your mouth with water immediately and take the advice of a doctor.
4. **Skin Contact:** If contacted with skin, flush skin with plenty of water for at least 15 minutes and remove contaminated clothes and shoes. Go to the hospital immediately if symptoms (inflammation, irritation) occur.
5. Talk to a doctor immediately if allergic signs are shown.

Always consult the Safety Data Sheet (SDS) for complete safety information.

7. TROUBLESHOOTING AND SUPPORT

For common printing issues, ensure your printer settings match the recommended values in the official setting chart. Inconsistent prints often stem from incorrect exposure times, insufficient shaking of the resin, or improper post-processing.

If you encounter persistent issues or require further assistance, please refer to the resources below:

- **Official User Guide (PDF):** For detailed instructions and troubleshooting tips, download the comprehensive guide: [Download User Guide](#)
- **3DMaterials Brand Store:** Explore other products and resources from 3DMaterials: [Visit 3DMaterials Store](#)
- **Contact Support:** For direct support inquiries, please visit the 3DMaterials website or contact their customer service as listed on the product packaging.

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This manual is for informational purposes only. Specifications are subject to change without notice.

ASK A QUESTION ABOUT THIS MANUAL

Ask about setup, troubleshooting, compatibility, parts, safety, or missing instructions. Manuals+ will review the question and use this page’s manual context to help answer it.

Name

Anonymous

Email

you@example.com

After a successful submission, we securely hash the supplied account or form email before sending it to Microsoft Advertising for conversion attribution. [Privacy details](#).

Question

Example: How do I reset this device or fix this error?

Details

Model number, symptoms, what you tried, or the section of the manual you are using.

Submit question