

## Prevent SLA 3D prints to cause cure inhibition on your platinum silicone

SLA print resins (often epoxy resins) will cause cure inhibition for your addition curing silicone (also known as platinum curing silicone).

This may be prevented by making sure the 3D print is 100% clean and fully cured.

Even better is the application of a sealing layer like PVA (poly vinyl alcohol) or a lacquer that does not cause silicone cure inhibition.

Here are some steps to come to the best result

### SLA Post-Processing Guide for 3D Printing

#### 1. Print Removal

Carefully remove your SLA print from the build platform. Here's a step-by-step process:

1. **\*\*Wear Safety Gear:\*\*** Put on nitrile gloves and safety goggles to protect against uncured resin.
2. **\*\*Use a Scraper:\*\*** Gently insert a plastic or metal scraper under the edges of the print. Apply even pressure to detach the print from the platform without damaging it.
3. **\*\*Twist Technique:\*\*** If the scraper method is challenging, you can try twisting the build platform gently to loosen the print.

#### 2. Support Removal

Supports can be tricky, but with the right technique, you can achieve a smooth finish:

1. **\*\*Cut Supports:\*\*** Use flush cutters to snip off the supports close to the print surface. Be gentle to avoid leaving deep marks.
2. **\*\*Sanding:\*\*** After cutting, sand the remaining nubs with fine-grit sandpaper (around 220 grit). For a smoother finish, progressively move to higher grits like 400 and 800.

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### 3. Washing

Washing is crucial to remove uncured resin and prepare the print for curing:

1. **Submerge in IPA:** Place the print in a container filled with isopropyl alcohol (IPA) with a concentration of at least 90%. Agitate gently to ensure all surfaces are washed.
2. **Use a Wash Station:** If available, use a wash station for more thorough cleaning. These stations often have a rotating basket or magnetic stirrer to enhance the process.
3. **Rinse and Dry:** After washing, rinse the print in clean IPA and let it air dry completely. Ensure the print is fully dry before proceeding to curing.

### 4. Curing

Curing solidifies the resin and improves the print's properties:

1. **Use a UV Curing Station:** Place the print in a UV curing station for an even cure. Follow the manufacturer's recommended curing time (usually around 10-15 minutes).
2. **Alternative Methods:** If you don't have a curing station, you can use natural sunlight. However, ensure the print is exposed to direct sunlight for several hours and rotate it periodically to ensure even curing.

### 5. Sanding and Polishing

Achieve a smooth, professional finish with these steps:

1. **Start with Lower Grit:** Begin sanding with lower-grit sandpaper (e.g., 220 grit) to remove any rough areas or support marks.
2. **Progress to Higher Grits:** Gradually move to higher grits like 400, 800, and up to 1500 grit for a super-smooth surface.
3. **Wet Sanding:** Wet sanding can help achieve an even finer finish. Use water to lubricate the sandpaper and print.
4. **Polishing:** For a glossy finish, use a plastic polishing compound with a soft cloth or a rotary tool equipped with a buffing pad.

### 6. Painting

Customize your print with paint:

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1. **Apply Primer:** Start with a primer coat to help the paint adhere better. Spray primers work well for even coverage.
2. **Paint Layers:** Use acrylic paints, applying in thin, even layers. Allow each layer to dry before applying the next.
3. **Detail Work:** For finer details, use small brushes or airbrush techniques.

## 7. Sealing

Protect your print with a sealing coat:

1. **Choose a Clear Coat:** Select a clear coat or UV-resistant sealer to protect against environmental factors. Make sure the coat does not cause cure inhibition for platinum curing silicones!
2. **Apply Evenly:** Spray or brush on the sealer in even coats, allowing each layer to dry before adding another.
3. **Final Cure:** After sealing, let the print cure fully to ensure maximum durability.

## Liability

By following these detailed steps, you will have a good chance on achieving a 3D print that will NOT cause cure inhibition for addition curing silicones. Unfortunately we cannot give a 100% guarantee. If you need to be completely sure your 3D print will not cause cure inhibition for silicones, you can either:

- 1) Use a different 3D printer that uses PLA or
- 2) Use a different silicone based on condensation curing.

For more information, please feel free to contact us.

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