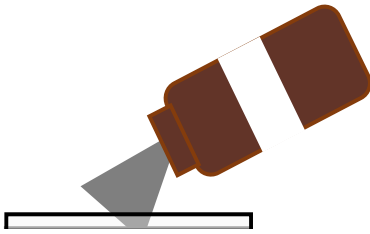


Safe Desktop Vat Photopolymerization 3-D Printing



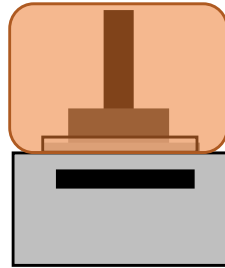
1



Resin dispensing uncured resin contains acrylates and other chemicals that can cause asthma or dermatitis (allergic or irritant). Manually pouring resin has potential for exposure. Printers with automated resin dispensers can help lower the risk of exposure.



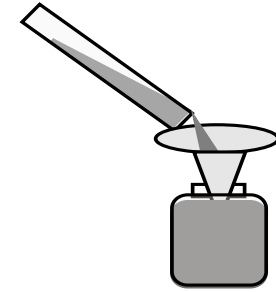
2



Printing releases uncured resin particles and gases into air that might not be contained by the cover. Let the printer air out for a few minutes before opening the cover, especially if it malfunctions, or use a printer with effective filtration inside the build chamber. Use automated part removal if available to minimize exposure.



3



Resin recovery a funnel can help reduce drips and splashes of uncured resin. Dedicate a separate vat for each type of resin to reduce the need and frequency of resin recovery and vat cleaning. Store away from light to avoid reactivity.



4



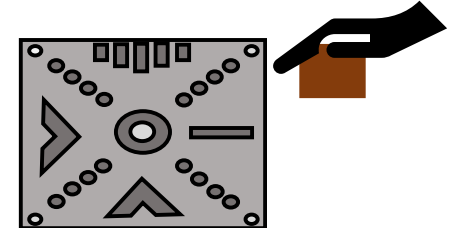
Part cleaning using solvents such as isopropyl alcohol (IPA) raises concerns for lung irritation and dermatitis (allergic or irritant). Quickly place parts in, and remove them from, wash containers without making splashes and keep containers sealed whenever possible to help lower exposures. Automated part handling could reduce exposures.

5



Curing using ultraviolet light and heat generates particles and gases that should not be breathed in. Use proper ventilation to reduce exposure to them. Once complete, resin on the surface of parts is usually fully cured so the risk of allergic dermatitis is reduced significantly.

6



Sanding generates dust that could contain both cured and uncured resin particles. Reducing the number of build supports can decrease the amount of sanding and dust exposure.

Always

- Lower exposures by using ventilation from open windows, forced air movement, or a printer with effective particulate and gas filtration.
- Use appropriate personal protective equipment (lab coat, ultraviolet light eye protection, and gloves). This may include a specific type of respirator for gases and dusts in some situations.
- Use gloves that protect against acrylates and isopropyl alcohol and change them frequently.
- Immediately replace personal protective equipment that comes in contact with uncured resin and solvents.
- Maintain a clean work area. Immediately clean-up resin drips or spills using disposable wipes and solvent such as isopropyl alcohol.
- Remove personal protective equipment and cleaning materials exposed to uncured resin and solvents from the work area and dispose of properly.



Protect skin from resin.



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