

STEREOLITHOGRAPHY (SLA)

3D PRINTING SAFETY FACT SHEET

3D PRINTING AT MSU

Stereolithography (SLA) is a 3D printing method wherein a liquid resin is hardened by a UV light in successive layers. SLA offers the best resolution among consumer desktop printers.

Accordingly, an increasing number of MSU labs are using SLA printers for rapid prototyping or for fabricating components at a fraction of the cost charged by manufacturers.

Users should understand the hazards presented by their printers and implement the safety practices outlined in this fact sheet.

HAZARDS & SAFETY PRACTICES

Flammable Resins

The resins used by SLA printers are usually flammable. They should be kept away from heat sources and stored in a flammable-safe storage cabinet. Wear disposable nitrile gloves while handling resins.

Sharps

Removing support material using sharp



instruments like razors and clippers can cause cuts and abrasions.

Handle sharp instruments with care and know the location of a first aid kit.

ELECTRICAL HAZARDS

Assembly and maintenance can expose electrical components capable of causing shocks. Always assemble and disassemble according to manufacturer instructions. Ensure the power cable does not fray.

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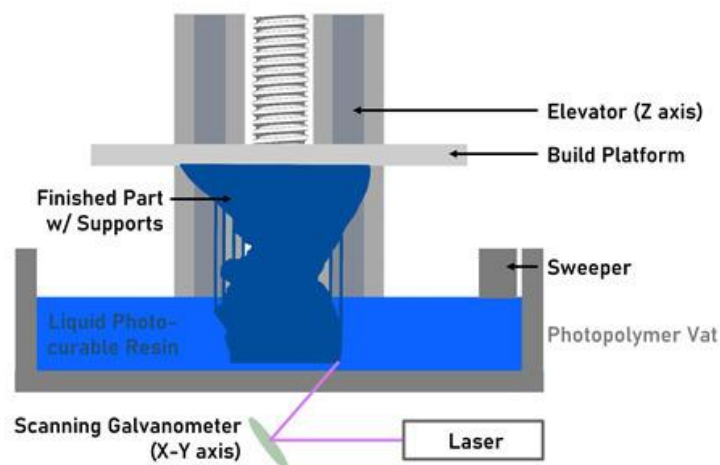
Ultraviolet Light

SLA printers use UV lasers, lamps, or other UV sources that can cause eye damage. Interlocks must never be defeated and UV-blocking enclosures should always be kept in place during operation. If removing the enclosure or defeating the interlocks is required for maintenance, UV-blocking safety glasses must be worn. Work should take place in a location with the fewest people in the direct line-of-sight to minimize potential exposures. **EHS must be notified if the light source needs to be exposed for assembly, maintenance, or other procedure.**

Post-Processing

Prints that have not been cured and have residual resin should be handled with nitrile gloves. UV ovens are often used to cure finished prints. EHS must be contacted if users plan to make a DIY curing oven.

Post-processing baths using organic solvents should be kept away from heat



sources. Used liquid should be disposed of as hazardous waste via EHS.

REGISTER YOUR SLA PRINTER

Environmental Health & Safety keeps inventory of all 3D printers on MSU campus. Please contact EHS to receive an inventory number and accompanying label at ehs@msu.edu or 517-355-0153.