

Resin (SLA) 3D Printers

DT Workshop Equipment Reference — D&T / STEM resource for school workshops | 3D Printing, Laser & CNC

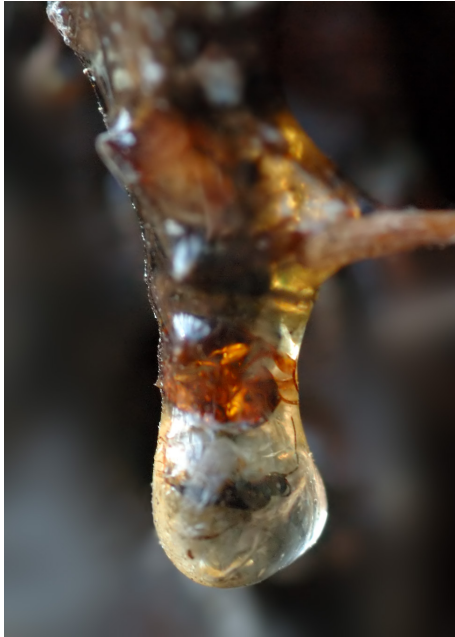


Photo: Andr? Karwath aka Aka — CC BY-SA 2.5 — via Wikimedia Commons (Resin_with_insect_(aka).jpg)

A resin or SLA 3D printer cures liquid photopolymer resin layer by layer with a UV light source, producing detailed, smooth parts for jewellery, miniatures, dental models and engineering prototypes. It has much finer detail than FDM printing but needs careful handling of the uncured resin.

Key Features

- Layer heights from 0.01 to 0.05 mm for fine detail
- Build volumes roughly 120 x 68 x 160 mm for entry models
- Mono LCD or laser light sources
- Built-in UV shielding and often air filtration
- Peel and lift mechanisms to reduce failures

Typical Uses in the Workshop

- Print detailed mechanical and engineering prototypes
- Cast jewellery and small parts from printed masters
- Make display models, miniatures and figures
- Produce tiny gears and precision inspection parts

Safe Operation

1. Wear nitrile gloves and ensure the area is ventilated
2. Clean and seat the build plate, then pour in filtered resin
3. Send the print and let the first layers cure fully
4. Wash printed parts in IPA before post-curing
5. Support and orient parts to avoid suction failures

SAFETY NOTES

- Wear gloves and goggles - uncured resin is a skin sensitizer
- Keep resin away from food and sinks; use a dedicated area
- Vent the room or use an activated carbon filter
- Dispose of resin waste as chemical waste, never down the drain
- Keep the printer away from sunlight to avoid curing spills

Maintenance & Consumables

- Filter and top up the resin vat regularly
- Clean the FEP film and check it for holes
- Replace the FEP and screen protector when scratched
- Store resin bottles sealed, upright and out of the sun
- Wipe the build plate clean after every print

Specification & Buying Notes

Choose a printer with a wash-and-cure station bundle, an air filter, and reasonable consumable prices. Resin, FEP film, gloves and IPA are recurring costs - budget for them. A heated resin option helps in cooler climates.