

ENVIRONMENTAL HEALTH AND SAFETY

RESEARCH SAFETY

3D PRINTER SAFETY



Think Before You Print!

3D printing—commonly used for prototypes, models and design projects—offers exciting opportunities for innovation, but it also comes with safety risks like high heat, airborne particles and electrical hazards. Most printers use thermoplastics such as polylactic acid (PLA) or acrylonitrile butadiene styrene (ABS) and must be operated with proper precautions to protect users, equipment and the environment.

If your lab uses metal 3D printing, contact EHS for specific guidance.

Key Hazards

- **Fire Hazard** - Overheating of printer components or flammable materials nearby
- **Fume Exposure** - ABS and some other filaments release harmful volatile organic compounds (VOCs) and ultra-fine particles
- **Mechanical Injury** - Moving parts and hot surfaces can cause burns or pinch injuries
- **Electrical Risk** - Faulty wiring or user-modified printers may increase shock or fire risk



Administrative Operations

Environmental Health and Safety

Phone: 765-494-6371 Email: researchsafety@purdue.edu

Before you Print

- Read the **owner's manual** and follow the **lab-specific SOP** for the machine
- Ensure **ventilation systems** are functioning
- Inspect for damage wiring or loose components

While Printing

- Never leave printers **unattended** during operation
- Keep flammable materials **away from printer**
- Monitor for **unusual noises, smoke or smells**
- Wear **gloves** and **eye protection** when handling resin or heated components

After Printing

- Allow printer to **cool down completely** before touching
- Clean up **spills** or filament residue safely
- Wash hands after handling materials
- Store filaments and resins in **labeled, sealed containers**

Use the QR code below to:

- Register all existing printers with the university
- Request a space review from EHS before the purchase of a new printer

