

APPENDIX X

3D Printer Guidelines

3D printers have become an increasingly popular and readily available tool for many schools and departments. These printers come with their own sets of hazards and safety concerns to include:

- Fine particulates and chemical inhalation hazards
- Electrical, UV and laser hazards
- Thermal hazards / hot surfaces
- Mechanical hazards from moving parts
- Chemical hazards (flammable solvents, corrosive liquids)

Please follow the recommendations below when setting up a 3D printer space.

- Printers should be set up in a well-ventilated space. Carpeted floors, and cloth chairs should not be used if the process involves liquids as these are not easily cleaned or decontaminated.
- Whenever possible, purchase enclosed models of 3D printers to reduce exposure to potentially harmful particles released during printing.
- There are dozens of types of filaments and resins for 3D printing. Utilize the least hazardous material possible that suits your application needs.
- No eating, drinking or application of cosmetics is allowed in the 3D printer areas.
- Always follow manufacturer's safety instruction for printing.
- Review safety data sheets for details on safe storage, use and handling of the printing material.
- Utilize the PPE recommended by the manufacturer as spelled out in the safety data sheet (SDS) for the materials being used.
- The AU minimum PPE requirement for working in a laboratory is lab coat, safety glasses and gloves.
- Many 3D printers generate hazardous waste from washing of the print jobs. Caustic solutions are utilized to dissolve supporting material in some of the filamentous print jobs. Flammable alcohol solutions are often used to wash some of the resin-based 3D printer jobs.

Contact EHS at 706-721-2663 for proper disposal of any hazardous waste generated from 3D printing.

Hazardous chemical waste must never be thrown in the trash or poured down the drain.

Printing of biological materials will require Biosafety office approval.

If you have any questions and would like an EHS consult on setting up your 3D printer space or advice on your existing space please contact the Chemical Safety Office at 706-721-2663.