Department of Mechanical Engineering Makerspace Safe Operating Procedure

SLS Printer

Adapted from *Formlabs*

DANGER: Do NOT disassemble or tamper with the product beyond what is explicitly outlined for typical maintenance. Tampering with or disassembling the machine prior to disconnecting the power cable and waiting approximately ten minutes can subject users to potentially fatal electrical hazards.

DANGER: Do NOT handle parts from a build chamber until the print bed temperature has reached ≤ 45 ºC (113 °F). Use the provided thermal-insulating silicone gloves when removing a build chamber that has not been allowed to cool down. Failure to follow these procedures will result in serious injuries, including burning and/or scalding of skin.

CAUTION: The laser beam is extremely harmful to the eyes and skin, capable of causing permanent blindness. Always avoid direct contact. The machine contains redundant interlock systems to automatically shut off the laser when the print enclosure door is open, or if the IR sensor is out of place. If these systems are tampered with or fail, there is a risk of exposure to Class 4 laser light. Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.

Due to its size and weight, do NOT move or reposition the machine alone. If the machine needs to be moved, at least two or more individuals should use the lifting straps provided with the printer.

Do NOT lift or reposition the machine by grabbing or pulling on the print enclosure door, hopper, hopper lid, filter compartment, filter door, power cable, or any components inside the print enclosure, by pushing on any side of the unit while stationary, when the build chamber from a previous print is loaded or still cooling in the print enclosure, or when the print enclosure is still hot from a previous print.

Sintering nylon powder produces laurolactam; a white powder that accumulates within the print enclosure, filter mediums, and exhaust. Proper ventilation is required whenever the machine or sift is operating. Powder that encounters fibers or other contaminants (e.g., in a vacuum cleaner) cannot be filtered and should be disposed of.

Always consult the safety data sheet (SDS) as the primary source of information to understand safety and handling of materials.

Potential Hazards

Death/Serious Injury	Class 4 Invisible Laser Radiation
Moderate Injury	Environmental Hazard
Minor Injury	Dust
Flammable Materials	

By signing this document, I, _____, agree to abide by I agree to use makerspace responsibly in accordance with the rules, policies, and guidelines in this document.

MEDDL User	Date
MEDDL Makerspace	Date