

MSU Equipment Decontamination from Biological Materials Policy

This document describes the policy and procedures for potentially contaminated laboratory equipment to be safely released for unrestricted use. Adherence to this policy will ensure that employees, students, and members of the public are not exposed to biological materials.

Equipment must be decontaminated prior to being moved out of a laboratory.

Responsibility

Ensuring that equipment is cleaned and decontaminated is the responsibility of the owner of the equipment. This could be an individual or the department that purchased the equipment. If the individual abandons equipment, the responsibility for decontamination falls to the department with which the individual was affiliated. Equipment owners must submit a completed [Equipment Decontamination Certificate](#) form to the to the Biosafety Officer.

The MSU Biosafety Officer has established minimum requirements for proper decontamination of used laboratory equipment that may have been exposed to biological materials, (see [MSU Biosafety Manual](#)).

Procedure

1. The minimum personal protective equipment (PPE) to wear when decontaminating laboratory equipment is a lab coat, gloves, and eye-protection. Additional PPE may be required depending upon contaminants and disinfectants used. Consult with the Biosafety Officer and Occupational Health to determine additional PPE requirements.
2. All equipment used to handle or store biological agents (e.g., freezers, incubators, centrifuges) must be decontaminated with an appropriate disinfectant for the biological material and/or equipment.
 - a. An appropriate disinfectant is one that has demonstrated decontamination efficacy to the biological material of concern and has been shown to not create additional hazards during use.
 - Common disinfectants used at MSU include:
 - 1:10 dilution of household bleach:water (0.5% sodium hypochlorite)
 - 70% ethanol
 - 3% hydrogen peroxide (e.g., PREempt/Rescue)
 - 5% Micro-Chem Plus
 - b. Consult the following website for information concerning EPA-registered disinfectants:
 - <https://www.epa.gov/pesticide-registration/selected-epa-registered-disinfectants>

- c. Additional information is available through [MSU's Pathogen Safety Data Sheets](#), the Biosafety Officer, or laboratory SOPs.
3. Allow disinfectant to remain on the equipment for the appropriate contact time. In most cases, 30 minutes is sufficient for decontamination with 1:10 bleach:water (0.5% sodium hypochlorite), or 70% ethanol. Consult MSU's Pathogen Safety Data Sheets, the Biosafety Officer, or laboratory SOPs.
4. After the equipment has been decontaminated complete an [Equipment Decontamination Certificate](#) for each piece of equipment.
 - a. Ensure that the person performing the decontamination procedures signs certifying that the equipment has been appropriately decontaminated.
 - b. Print a copy of the completed form and attach it to the piece of equipment. Retain a copy for your records. Submit a copy to the Biosafety Officer.
 - c. The receiving entity is responsible for retaining the original for their records.

Equipment Checklist

The equipment below are examples of common laboratory equipment. If there are questions about how to decontaminate specific equipment, contact the Biosafety Officer for assistance.

1. **Refrigerators and Freezers.** Remove all contents, including thermometers, biological materials and chemical reagents. Biological materials must be moved following the [Transporting Biological Agents](#) policy. Defrost the refrigerator/freezer. Decontaminate refrigerator/freezer. The refrigerator/freezer must be completely empty prior to being moved.
2. **Incubators.** Remove any remaining samples and drain the water from the jacket and pans. Decontaminate incubators with appropriate disinfectant.
3. **Biological Safety Cabinets.** Remove all tubing and glassware connected to the hood. If the hood is being relocated or placed in storage, decontaminate the work surface of the hood with appropriate disinfectant. The BSC must be recertified prior to use. If the hood is being discarded or recycled, contact the Biosafety Officer to have the hood decontaminated by a professional vendor.
4. **Centrifuges.** Remove tubes holding water or samples from the rotor system. Decontaminate centrifuge and all associated rotors/cups with appropriate disinfectant.
5. **Water baths.** Disinfect the water in the bath by adding the appropriate disinfectant at the proper concentration to the water bath. After the appropriate contact time, drain the water from the unit and remove any samples or thermometers. Decontaminate water baths with appropriate disinfectant.
6. **Balances or scales.** Wipe clean to remove any remaining contamination inside the balance or on the scale. Decontaminate balances or scales with appropriate disinfectant.
7. **Heating blocks.** Remove samples and thermometers. Decontaminate heating blocks with appropriate disinfectant.
8. **Spectrophotometers.** Disconnect automatic sample feeders holding samples containers or standards, if applicable. Decontaminate spectrophotometers with appropriate disinfectant.