

# Laboratory/Containment Area Closeout

## Termination of Laboratory and Containment Area Use of Hazardous and Radioactive Materials

When personnel leave the laboratory or the university, proper disposition of hazardous and radioactive materials is required. This includes faculty, staff, students, and visiting faculty.

Improper management of hazardous or radioactive materials that require services from an outside contractor, will be charged to the responsible department.

Mishandling of hazardous materials can result in citations, fines, loss of funding, and/or loss of right to use hazardous materials.

### Shared Areas, Shared Equipment

Departing researchers are responsible for surveying any shared facility or equipment such as refrigerators, freezers, cold rooms, stock rooms, cell culture rooms, etc., and disposing or transferring material appropriately. [Infrastructure Planning and Facilities](#) will need to be contacted in advance to assist with moving large pieces of equipment or removing gas lines, etc. See specific areas below regarding Chemical, Biological, and Radioactive materials close out.

## CHEMICALS

### Chemicals/Toxins in Laboratories and Containment Areas - Disposal of Hazardous

Before the responsible individual leaves the laboratory the following procedures must be completed:

- Assure that all containers of chemicals are:
  - labeled appropriately, including the name of the chemical
  - securely closed
  - beakers, flasks, evaporating dishes, etc. must be emptied
  - hazardous chemical wastes must not be disposed of down the drain
- Glassware, refrigerators, freezers, fume hoods, storage cabinets and bench tops should be thoroughly cleaned of chemicals. After decontaminating equipment, remove safety stickers and attach [Equipment Release Form](#).
- If the freezer or equipment is shared with another researcher, remove, transfer or dispose of items used by that researcher.
- Contact [Environmental Health & Safety \(EHS\)](#) for pick-up of hazardous or radioactive waste at least ONE MONTH prior to vacating the facility.
- Gas cylinders: remove regulators, replace caps, and return to supplier. If cylinders are non-returnable, refer to the [MSU Hazardous Waste Disposal Guide](#). Gas cylinders used in the containment are must be decontaminated prior to return.

As an alternative to disposal, if the chemical is still usable, the material can be transferred to another researcher. However, some materials require approval prior to use. Please contact EHS prior to transferring hazardous materials.

Chemicals moved to new space within the same building or an attached building may be able to be done by the laboratory staff, however, across campus or off campus moves require several weeks of advance notice for EHS staff to assist with the move.

EHS will pick up all hazardous waste provided that [MSU Hazardous Waste Disposal Guidelines](#) are followed.

Notify the department when laboratories or containment area/rooms have been cleared.

### Chemical Transportation on Campus

Usable chemicals are to be moved to a different facility by following these procedures:

- All containers of chemicals must be labeled with the name of the chemical
- Containers must be securely closed
- Stock solutions must be transferred to containers intended for use in transportation such as screw cap bottles and carriers.
- Transportation requirements for usable chemicals are the same for hazardous waste.
- Chemicals offered for shipment must be grouped together on lab benches or on shelves to facilitate removal.
- Gas cylinders: remove regulators, replace caps and attach tag with the name of the person responsible for the material including a phone number.
- A licensed transporter must be contacted to package and deliver the materials to the new location. EHS will assist with making a proper selection of servicers.
- Persons intending to transport chemical materials themselves must contact EHS prior to transport.

### Controlled Substances - Lab Closeout

[Controlled substances](#) must be disposed of prior to licensee/registrant leaving campus. The registrant/licensee or an authorized agent must contact EHS to arrange for disposal via a DEA approved method. Allow plenty of time prior to leaving campus to arrange for disposal. The EHS Hazardous Waste Team CANNOT dispose of these materials for you. All controlled substances must be kept secure until an appropriate disposal method can be arranged. It is the responsibility of the licensee/registrant to ensure that controlled substances are secure at all times. CONTROLLED SUBSTANCES CANNOT BE LEFT IN THE LABORATORY AFTER CLOSEOUT.

Information regarding transferring your DEA registration to a new location or having the registration retired can be found on the DEA website.

## BIOLOGICAL MATERIALS

### Biological Materials, Infectious Substances – Closeout/Disposal

#### Equipment

- Decontaminate all equipment and areas prior to close out of lab. A 1:10 solution of bleach made fresh applied for 10 minutes of contact time can be used for most recombinant and

biological material decontamination. Contact EHS if more instruction on appropriate disinfectant is needed.

- Thoroughly clean/decontaminate centrifuges, vortexes, pipettes, bench tops, cabinets, biosafety cabinets, drawers, chairs, microscopes, computers, etc.
- Equipment must be labeled with an equipment release form, available on EHS website.
- Biosafety cabinets being relocated or disposed of require thorough decontamination. [Contact EHS](#) to assist with appropriate decommissioning procedures.
- Reminder that radioactive use equipment must be surveyed by EHS prior to release or use by others, See Radioactive Materials section.

#### Animal Tissue

- Liquid preservative must be poured off of tissue to be disposed of separately as a hazardous chemical. Refer to the Hazardous Waste Guide for information on disposing of the preservative or contact EHS.
- Large animal parts or whole animal carcasses will be picked up by EHS Incinerator Operator and incinerated. Small animals, parts, and tissues should be placed in a biohazard bag prior to pick up for incineration. Incineration requests can be placed online at [www.ehs.msu.edu](http://www.ehs.msu.edu)

#### Microorganisms and Cultures

- Autoclave all liquid or solid culture waste and dispose of it in an opaque black bag, as outlined in the EHS Hazardous Waste Disposal Guide.
- If material cannot be decontaminated, place in a biohazard bag for incineration. Place incinerator order online at [www.ehs.msu.edu](http://www.ehs.msu.edu).

#### Transportation of Biological Materials on Campus

- If biological material is to be transferred to another researcher, contact EHS Biosafety Team member to make sure the researcher is approved to receive the material.
- Biological materials\* must be transported in a primary and secondary leak proof container. Primary containers can be culture tubes, flasks, vials, etc. Containers must be:
  - Rigid
  - Puncture resistant
  - Leak proof
  - Impervious to moisture
  - Of sufficient strength to prevent tearing or bursting under normal conditions of use and handling
  - Sealed to prevent leakage during transport
  - Labeled with a biohazard or infectious substance label
- All containers must be accompanied by a list of content, the person responsible for the material, contact person, and phone number.
- If materials are to be transported in liquid nitrogen or other protection from ambient or higher temperatures, all containers and packaging must be capable of withstanding very low temperatures, and both primary and secondary packaging must be able to withstand a pressure differential of at least 95 kPa and temperatures in the range of -40°C to +50°C. If the material is perishable, warnings should appear on accompanying documents, e.g., "Keep Cool, between +2°C and +4°C".

Transportation of biologicals off campus: contact [EHS Biosafety Team](#) for information.

\*Infectious substances: viable microorganisms, including a bacterium, virus, rickettsia, fungus, or a recombinant, hybrid, or mutant, that are known or reasonably believed to cause disease in animals, humans, or plants.

\*Diagnostic specimens: any human or animal material including but not limited to, excreta, secreta, blood and its components, tissue and tissue fluids.

## **RADIOACTIVE MATERIALS**

### **Radioactive Material Use Areas Closeout**

Prior to close out of radioactive materials use areas, release of radioactive use equipment and/or radioactive materials approvals, it is the responsibility of the approved principal investigator to assure that the following steps have been completed:

1. Contact the [Radiation Safety Officer \(RSO\)](#) at EHS to inform them of the intended transfer or close out. The materials to be moved will be reviewed and a laboratory visit will be scheduled with EHS to provide guidance on labeling and packaging the materials to be relocated.
2. A copy of the most recent inventory of radioactive materials possessed by the principal investigator will need to be submitted to the RSO to facilitate the close out, transfer, or disposal process.
3. EHS must authorize any transfers to other principal investigators or to off campus licensees prior to the transfer. The receiving principal investigator must be approved for the nuclide and quantity of activity, and must not exceed the authorized amount after receipt of the transferred material. Any material being shipped off campus will be shipped by EHS.
4. Package the radioactive materials as directed by EHS, in strong tight containers. Each container must be contained and segregated properly according to the nuclide and amount of activity in material, whether it is waste, stock vials, sealed sources, contaminated equipment, samples, etc.
5. Contact EHS to schedule a pick-up of the radioactive materials. **ALL RADIOACTIVE MATERIALS MUST BE TRANSPORTED BY EHS; TRANSFER BY THE LABORATORY STAFF IS PROHIBITED IF MOVED BY VEHICLE.**
6. After the removal of all radioactive materials, perform a survey of the entire laboratory, including all use, storage, and disposal areas. Refrigerators and freezers, community use areas, incubators, fume hoods, and any other areas and equipment which may potentially be contaminate must be included. Document the survey. If contamination is found, it must be decontaminated prior to release of the facility. **NO FURTHER USE OF RADIOACTIVE MATERIALS IN THE ROOMS IS ALLOWED UNTIL THE CLOSE OUT IS FINALIZED AND THE AREAS ARE RELEASED BY EHS.**
7. Contact the RSO to arrange for a close out survey. This must be completed, with records maintained, before new occupants may move into the area. Warning labels and postings will be removed by EHS Radiation Safety Staff.
8. Prior to moving radioactive materials into a new use area, principal investigators must obtain prior approval from the RSO. New rooms to be occupied must be approved for radioactive materials use, and facilities must be appropriate for the types and quantities of radioactive materials to be used. EHS Radiation Safety Staff will provide appropriate postings and labels.
9. Equipment used for or with radioactive materials must be surveyed and released by EHS prior to transfer to other locations or users.

## **LASERS**

Contact [EHS Laser Safety personnel](#) for information on transfer or decommissioning.

**MIXED HAZARDS**

Contact EHS for combined chemical, radioactive or biological materials.