College of Forestry 330: Laboratory Chemicals

Safety Policy & Procedure Manual
Section 300: Laboratory Safety
Effective: 01 January 2007
Revised: August 2014

PURPOSE

The purpose of this section is to ensure that all persons involved in laboratory activities are properly trained in safe working practices and procedures for the handling and use of all laboratory chemicals

Background Information

Laboratory chemicals are regulated under Oregon Administrative Rules Oregon Occupational Safety and Health Division, Division 2, subdivision D (437-007-0300).

Applicability

All academic, research, students, and visitors in the College of Forestry.

Procedure

Purchasing

The decision to purchase a chemical shall be a commitment to handle and use the chemical properly from receipt to disposal. Purchase the smallest quantity that fits your needs. Avoid stocking up on chemicals to save money on the hazardous shipping costs.

Storage and Transport

1. Chemical storage areas must have a standard OSU "CAUTION" sign that identifies emergency contact personnel. Call EH&S at 7-2273 for signs. (Reference 28)
2. Glass containers that contain more than 4 liters of flammable liquids are prohibited.
3. Segregate chemicals by hazard classification and compatibility.
    a. Separate oxidizers from flammable, combustible, or any organic material.
    b. Separate acids from acid-sensitive materials such as cyanides and sulfides.
4. Place acid-resistant trays under bottles of mineral acids.
5. Minimize storage of chemicals at the lab bench, in hoods, and at other work areas.
6. An inventory of chemicals in the laboratory must be maintained and updated at least annually. The University has a web-based system for this. Contact EH&S at 7-2273 for a login and password.
7. Stored chemicals shall be inspected at least annually by the Laboratory Chemical Hygiene Officer for deterioration and container integrity. The inspection should detect corrosion, deterioration, or damage to the storage facility as a result of leaking chemicals.
8. Unneeded chemicals shall be discarded through EH&S (call 7-4552).

Handling

Exposure to all chemicals should be minimized because all chemicals inherently present hazards in certain conditions and concentrations. General precautions that shall be followed for the handling and use of all chemicals are:

1. Use a container size of the minimum convenient volume for the task at hand. Quantities of chemicals at the lab bench should be as small as practical.
2. Avoid skin contact with all chemicals.
3. Wash all skin which came in contact with chemicals before leaving the laboratory.

4. Treat substances of unknown toxicity as toxic. Any chemical mixture must be assumed to be as toxic as its most toxic component.
5. Laboratory employees must be familiar with the symptoms of exposure for the chemicals with which they work and the precautions necessary to prevent exposure.
6. In all cases of chemical exposure, the OSHA Permissible Exposure Limit (PEL) is not to be exceeded.

Disposal

1. EH&S provides a chemical waste disposal program for the campus. (Reference 8). In most cases this service is provided at no cost to the generating department. The exception to this are major lab clean outs and handling some unknowns. To request chemical waste disposal go to http://oregonstate.edu/ehs/waste.
2. With only a few exceptions, all chemical waste must be disposed of through the chemical waste disposal program. Some non-hazardous chemical waste can be disposed of by pouring it down the sewer. However, EH&S should be consulted prior to any sewer disposal.
3. All chemical waste containers must be labeled "chemical waste" and have a tight-fitting lid.
4. Waste must be stored in and picked up from the room in which it was generated.

Spills

1. Each laboratory is expected to maintain appropriate material to contain and clean up minor chemical spills (see Laboratory Chemical Hygiene Officer for determination of need or call EH&S at 7-2273 for purchasing information). Workers should tend to minor spills only in their own labs and should not assist neighbors except to call EH&S for assistance.
2. Major chemical spills, or spills which migrate off the bench top or beyond the laboratory of origin are to be cleaned up by trained individuals. EH&S has individuals who are trained and equipped for hazardous material spill management.
3. In the event of a major spill, or a spill of highly toxic chemicals, call EH&S (call 7-2273 or 7-7000 after hours.) A sign warning of the spill must be posted at all entrances to the area unless personnel are on duty to provide adequate warning.

Glassware and Containers

1. All labs using glassware will have a clearly labeled broken glass container. Broken glassware will be immediately disposed of in this container. Full containers should be tightly closed and disposed of in the dumpster.
2. High-vacuum evacuated glass apparatus will be shielded to contain chemicals and glass fragments should implosion occur.
3. All containers of chemicals shall be labeled.
    a. Labels shall be informative, durable, and, at a minimum, will identify contents.
    b. The chemical name is preferable over the chemical formula.

The chemical source, receipt date, storage location, and initials/identifier of person who prepared the container should also be placed on the label.