

HAZARDOUS MATERIAL/CHEMICAL INVENTORY AND CONTROL

A. Introduction:

1. This chapter provides University Faculty, Staff, and Students with guidelines on ordering chemicals, adding and removing chemicals from the inventory system, and proper storage and handling of hazardous materials and chemicals. It is essential for all hazardous materials and chemicals to be strictly controlled to ensure a safe working environment, prevent exposures, and reduce waste generation.

B. Responsibilities:

1. Environmental Health and Safety Department (EHS):

- a. Keeps an accurate database of all chemicals on campus with a web based chemical inventory module called the Vertere Chemical Inventory Management System.
- b. Works with the UNE Shipping and CHO's and Department Heads to ensure that all chemicals receive a barcode upon arrival and that current Safety Data Sheet(s) are onsite, available, and kept on file.
- c. Controls hazardous substances on campus and applies for special licenses or government notifications as required.
- d. Quarterly completes a chemical reconciliation on all labs' chemicals.

2. Chemical Hygiene Officers/Biosafety Officers/Department Heads:

- a. Collaborates with EHS on the ordering of chemicals and quantities that their department requires.
- b. Ensures all chemicals/biological agents are stored properly and are accounted for at all times.
- c. Controls who has access to chemicals/biological agents and who is authorized to use them.

b. Notifies EHS if there are any chemicals that have leaked or spilled through their packaging.

c. Delivers the chemicals/hazardous materials to the appropriate departments on campus.

C. Policies, Practices, and Procedures:

1. Classification of Hazardous Materials/ Chemicals: In order to safely and properly handle and store hazardous materials/ chemicals, it is important to know the hazards of those materials. Hazardous materials/chemicals may generally be assigned to one or more of the following classifications:

a. Flammable liquid: A liquid having a flash point of not more than 93 °C.

Table 1: GHS Flammable (and Combustible) Liquid Criteria

Criteria	GHS Category	Transport Class/Packing Group
Flash point < 73°F(23°C) and initial boiling point < 95°F(35°C)	1	3, I
Flash point < 73°F(23°C) and initial boiling point > 95°F(35°C)	2	3, II
Flash point 73°F(23°C) and < 140°F(60.5°C)	3	3, III
Flash point > 140°F(60.5°C) and < 199.4°F(93°C)	4	Combustible Liquid, PG III [DOT uses <200°F(93°C)]

b.

of animal tests) to be so toxic to humans that they are a hazard to health during transportation.

- g. Explosive: A chemical that causes a sudden, almost instantaneous release of pressure, gas, and heat when subjected to sudden shock, pressure, or high temperature.
 - h. Compressed Gas: A gas which when packaged under pressure is entirely gaseous at -50 °C; including all gases with a critical temperature -50 °C. (See Chapter 10 of the Safety Manual for more information on compressed gas cylinders).
 - i. Cryogenics: Substances which are extremely cold such as liquid nitrogen, liquid helium and dry ice. These substances may also become asphyxiation hazards if spilled in non-ventilated areas.
2. Ordering Hazardous Materials/Chemicals: There are specific guidelines that must be followed when ordering hazardous materials and chemicals. It is essential to determine how materials will be stored and used in order to avoid ordering materials that we do not have the capability of maintaining or disposing. In addition, there are some chemicals that require special training.

Before ordering any materials (biological/radioactive/chemical):

- a. Search for least hazardous option or consider substituting a hazardous chemical for something less hazardous or non-hazardous. Always look for the safest alternative.
- b. Consider checking with other departments that use similar chemicals before placing an order to see if they have excess of the same chemical that you may be able to use.
- c. Only order the quantity of the substance that you are going to use. Do not order excess or bulk if it is not needed.
- d. When ordering biological materials, prior approval to order biological materials must be obtained from the department's Biological Safety Officer, EHS, and the Institutional Biosafety Committee (IBC).
- e. Radioactive materials require prior approval from the Radiation Safety Officer.
- f. Highly toxic materials or those requiring special treatment (storage conditions, containment, and disposal) must be approved by EHS or the Chemical Hygiene Officer. EHS must be contacted prior to ordering any Class A carcinogens such as:
 - i. Arsenic and arsenic compounds
 - ii. Asbestos
 - iii. Benzene
 - iv. Benzidine
 - v. Chloromethyl methyl ether
 - vi. Chromium and chromium compounds

- vii. Diethylstilbestrol
 - viii. 2-Naphthylamine
 - ix. Vinyl chloride
- g. The following chemicals have specific OSHA regulations which include required personal protective equipment, monitoring and training. EHS must be notified of their use.
- i. 2-Acetylaminofluorene
 - ii. Acrylonitrile
 - iii. alpha-Naphthylamine
 - iv. 4-Aminodiphenyl
 - v. Asbestos
 - vi. Benzene
 - vii. Benzidine
 - viii. Benzine
 - ix. beta-Naphthylamine
 - x. beta-Propiolactone
 - xi. bis-Chloromethyl ether
 - xii. 1, 3-Butadiene
 - xiii. Cadmium
 - xiv. 1,2 Dibromo-3-chloropropane (DBCP)
 - xv. 3,3'-Dichlorobenzidine (and its salts)
 - xvi. 4-Dimethylaminoazobenzene
 - xvii. thyleneimine
 - xviii. Ethylene oxide
 - xix. Formaldehyde
 - xx. Inorganic Arsenic
 - xxi. Lead
 - xxii. Methyl chloromethyl ether

xxiii. Methylene chloride

xxiv. Methylenedianiline

xxv. N-Nitrosodimethylamine

xxvi. Vinyl chloride

3. Shipping/Transporting Hazardous Materials/Chemicals:

- a. Absolutely no hazardous materials or chemicals may be brought from home to UNE.
- b. Absolutely no hazardous materials or chemicals may be brought from UNE to home.
- c. Transportation of hazardous materials is strictly prohibited. If a hazardous substance or chemical must be transported between the Biddeford and Portland campuses, you must contact EHS.
- d. Shipping of chemicals/biohazardous materials and dangerous goods from UNE is strictly regulated and **MUST** be done through the EHS Department or by an

- b. Hazardous substances should be stored in an orderly manner with older products most accessible and the newer products least accessible.
- c. Good housekeeping must be practiced in areas where hazardous products are stored.
- d. All hazardous materials/chemicals from the manufacturer must be properly labeled, including:
 - i. Product Identifier
 - ii. Pictogram (GHS system)
 - iii. Signal Word
 - iv.

by notifying EHS to post it in the UNE Lab Newsletter. Once the chemical is posted, other labs can email EHS to obtain the chemical on a first come, first serve basis. If no one would like the chemical, it will be deleted from the chemical inventory and sent out as hazardous waste.

****Please note it is important to notify EHS before donating your substance to another department or individual so that the chemical inventory is accurate. ****

- f. Chemical Reconciliations: Quarterly chemical reconciliations will be performed by EHS for each lab to ensure an accurate and up-to-date record of all chemicals on campus.
8. Contractor Owned Chemicals: According to OSHA's Hazard Communication Standard Guidelines, "employers are responsible for protecting their employees from all hazardous chemicals known to be present, including those brought on-site by contractors." Contractors who bring materials on-site are required to notify and provide a list of materials and quantities to EHS. A decision will be made as to whether the material(s) will be allowed on-site.
 - a. Any spills or accidental discharges of hazardous materials are to be immediately reported to the University's Director of Environmental Health and Safety or alternate EHS staff member, if the director is not available.
 - b. If it becomes necessary for the contractor to dispose of any chemicals, paint, or other waste materials, the University, through its Director of Environmental Health and Safety, will assist in arranging for such disposal, but the contractor is responsible for all expenses associated with disposal of Contractor generated wastes.

9. Spill Procedures: All spill response and spill cleanup procedures can be found in the UNE

- b. SDS' will be maintained by the chemical user of the chemical.
 - c. SDS' for substances no longer utilized at UNE will be maintained for a period of 30 years by EHS.
2. The University Chemical Inventory is maintained by EHS
- a. All applicable departments must provide an inventory of the hazardous chemicals that are in use.