

- x Evaluating the condition and amount of hazardous waste during each monthly lab inspection, as required by the Chemical Hygiene Program (CHP).
- x Requesting the removal of hazardous waste, as needed, to Hazardous Materials Management.
- x Ensuring safe and proper procedures, including disposal, are followed in the event of a spill.
- x Ensuring the proper authorities are notified in the event of a spill. This may include notification to emergency services at 911, Campus Safety at ext. 1-3000, Hazardous Materials Management for proper disposition of the material, and the EH&S Director for personal exposure evaluation. See Spills section below.

6. Chemicals inventory

The PI or Authorized Person will maintain an accurate inventory of chemicals in the lab or work area. Hazardous Materials Management will maintain a compilation of chemical inventories for the labs and applicable work areas and provide a comprehensive list, annually, to the Denver Fire Department.

7. Chemical procurement

A **Hazardous Materials Notification List** has been compiled that includes the EPA P-List of acutely hazardous chemicals and certain toxic chemicals as identified by cancer research agencies. The purpose of the notification list is to track certain hazardous chemicals being purchased by the university and to mitigate the generation of hazardous waste. The OSHA Lab Standard requires additional employee protection for work with particularly hazardous substances. The Standard specifically lists three categories of chemicals as particularly hazardous, including select carcinogens, reproductive toxins, and substances with a high degree of acute toxicity. Select carcinogens include any substance which is:

1. Regulated by OSHA as a carcinogen.
2. Identified by the National Toxicology Program (NTP) as “known to be carcinogen”.
3. Identified by the International Agency for Research on Cancer (IARC) under Group 1 as “carcinogenic to humans.”

Prior to making a chemical purchase, the PI must evaluate the associated hazards of chemicals to be purchased and to determine if the chemical product or any of its components are identified on the Hazardous Materials Notification List. Written notification (**Hazardous Chemical Purchase Notification**) is required to be submitted to the Hazardous Material Management and the EH&S Director for the purchase of materials identified on the **Hazardous Materials Notification List**. PI's are responsible for generating as little hazardous waste as reasonably achievable and are therefore encouraged to procure chemicals only in amounts that will be used in the near future. No maximum purchase limit is established but as a general guideline five pounds or about 2200 grams may be considered to be excessive. The Certified Hazardous Materials Manager or the EH&S Director may contact the PI to discuss potential environmental issues or health and safety risks associated with the request. The cost associated with disposing of hazardous waste may be charged to the respective department if subsequent amounts of wastes are determined to be excessive.

The PI's are encouraged to seek small quantities of chemicals from other laboratories on campus. While exchanging chemicals within the labs is not always possible or feasible, this practice will

help reduce inventories. Additionally, prior to procuring a chemical the PI should have a Standard Operating Procedure (SOP) in place that describes the associated hazards, controls to be

requires that the container be properly capped between additions to the container. The University further requires that the proper chemical names and volumes of items added to a waster container be documented in the log.

Disposing hazardous waste into the building sanitary drainage and sewer systems can potentially cause system damage and may be a violation of regulations. Hazardous Material Management must be contacted for an evaluation to determine if a certain type of hazardous waste can be poured into the sink or sanitary drain. Contact the Hazardous Materials Management for disposal of waste. Waste containers should be no larger than 5 gallons.

9. Spills

The best means to control spills is the use of preventive measures, including the implementation of safe handling provisions that must be described in the applicable SOP, per the CHP. The SOP provides for proper controls, including the use of PPE, for routine use and for contingencies such as a spill. The SOP must identify the appropriate response for an accident or spill. Factors such as the chemical toxicity or flammability, the quantity involved, and the consequences of the event determine the significance of the hazard. Certain events may require emergency services (911) and Campus Safety (1-3000) to be notified or the University of Denver Critical Incident Management Plan (CIMP) to be implemented. Minor spills may only require the response of lab personnel, but personnel should thoroughly understand steps to be taken beforehand.

After a chemical spill occurs, the health and safety of personnel is paramount. For small spills a good practice is to follow the SWIM method. S-Stop; W-Warn; I-Isolate; M-Minimize.

1. Stop the spill. This may involve simply placing a tipped bottle upright or closing a valve.
2. Warn others. Call co-workers to assist you.
3. Isolate the area. Protect the area to keep personnel away.
4. Minimize exposure during cleanup.

Hazardous Materials Management, likewise, must be notified for spills that affect the environment, such as entrainment into the sanitary sewer system or soil infiltration. Hazardous Materials Management will provide assistance regarding the proper storage or disposal of the spilled chemical.

Depending on the nature of the spill hazard, i.e., duration of exposure, airborne concentration of the contaminant, the EH&S Director must be immediately notified to assess potential personal exposures and the appropriate controls to protect personnel during remediation.

10. Training

Specific, formalized training is required for LQGs and SQGs while no specified training requirements exist for VSQG. At a minimum, personnel working with chemicals must attend OSHA required lab safety training, provided by the EH&S Director

11. Documentation and Reporting

SQGs have specific requirements for keeping records of the amount of hazardous waste generated. In addition, as a matter of prudent practice, weights and volumes of hazardous waste generated will be recorded and maintained by Hazardous Materials Management on an on-going basis. Decisions regarding whether or not the contents of a container should be classified as "Hazardous Waste" should be left to Hazardous Materials Management.

12. Hazardous Material Management Plan Changes

December 5th, 2023 - Minor Revisions