Chemical Safety CO-LS-PR3

Responsible Officer: Vice President for Administration and Campus Operations
Sponsoring Department: Environmental Health & Safety
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Errors or changes to: aim@uta.edu

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PROCEDURE OBJECTIVE

The purpose of this procedure is to:

- prevent personal injury from exposure to chemical hazards;
- prevent damage to The University of Texas at Arlington (UT Arlington) property;
- prevent chemicals and chemical waste from polluting the environment;
- comply with applicable federal, state, and local guidelines and requirements; and
- establish efficient and effective use of chemicals.

SCOPE

This procedure applies to all faculty, staff, students and other individuals working with hazardous chemicals on UT Arlington campus.

RESPONSIBILITIES

Environmental Health and Safety Office (EH&S)

- Perform inspections of all chemical laboratories and shop areas
- Provide consultation services
- Maintain laboratory safety manuals
- Remove chemical waste when needed
- Test safety equipment
- Provide employees with information and training
- Approve all chemical donations prior to acceptance
- Approve requests to retain expired chemicals

Principal Investigators (PIs) of Laboratories and Shop Supervisors of Departments that Utilize Chemicals

- Ensure that employees and students comply with rules and procedures
- Provide Site-specific training as part of the Hazard Communication Program
- Submit requests for chemical waste removal
- Submit requests to retain expired chemicals
- Conduct physical count of chemical inventory and locations every 12 months

UT Arlington Police Department (UTAPD)

- Provide information about chemicals to first responders when needed

PROCEDURES

Chemical safety is the effective management of chemical hazards through the proper application of engineering and administrative controls. Chemical safety at UT Arlington is a team effort involving all stakeholders.

Section I. Maintenance of Laboratory Safety Manual

EH&S provides support in an effort to protect UT Arlington students, employees, and property from chemical hazards. The UT Arlington Laboratory Safety Manual (Chemical Hygiene Plan) was created in accordance with the Texas Commission on Environmental Quality (TCEQ), the Texas Hazard Communication Act, and the Environmental Protection Agency (EPA). It is a guide to promote safe practices in laboratories and shops. Topics covered in the laboratory safety manual include: emergency procedures, safety equipment, the Hazard Communication Act, chemical hazards and control, personal protective equipment, controlled substances, chemical waste, disposal of chemical waste, chemical inventory, etc.

Section II. Laboratory Evaluation Program

EH&S evaluates all laboratories and shops that use hazardous chemicals and/or generate hazardous waste. Laboratory evaluations are conducted per the SOP-UT Arlington Laboratory Evaluations.

These evaluations ensure that:

- proper laboratory safety practices and procedures are being utilized;
- chemicals are being stored and labeled correctly;
- chemical inventory is being maintained, hazardous waste is being collected and disposed of properly;
- safety equipment (fume hoods, eyewashes, safety showers) has been tested;
- proper personal protective equipment (PPE) is being worn; and
- good housekeeping practices are being followed.

The inspection is based on the UT Arlington Laboratory Safety Evaluation Checklist (Form 8-36), Biological Lab Safety Evaluation Checklist (Form 8-26), and Shop Safety Evaluation Checklist (Form 8-75).

Section III. Chemical-Free Areas in Campus Laboratories

Eating, drinking, handling contact lenses, applying cosmetics, and storing of food for human consumption is not permitted in University laboratory work areas. In cases where the need is justified and it can be demonstrated that proposed locations are sufficiently separated from actual laboratory work areas, EH&S will consider and review for approval a designated

Chemical-free Area where laboratory staff may eat, drink, apply cosmetics, and conduct other personal activities not related to laboratory operations. Chemical-free areas in campus laboratories will be determined as described in SOP - Chemical-free Areas in UT Arlington Laboratories, and can be requested by submitting Form 8-106, Chemical-free Area Designation Application to EH&S for approval.

Section IV. Hazardous Waste Disposal (Regulated and Universal)

A hazardous waste is a waste that can, by U.S. Environmental Protection Agency (EPA) definition, pose a substantial threat or potential hazard to human health or the environment. Types of regulated hazardous wastes, as defined by 40 CFR Part 261 of the Resource Conservation and Recovery Act (RCRA), include certain listed wastes, as well as wastes that exhibit the characteristics of ignitability, corrosivity, reactivity, or toxicity. Types of universal hazardous waste, as defined by 40 CFR Part 273 of RCRA and 30 TAC Rule 335.262 of the Texas Administrative Code, include batteries, pesticides, mercury-containing thermostats, lamps, and paint and paint-related waste.

Each individual laboratory or shop has a designated hazardous waste satellite accumulation area (SAA). Instructions for proper accumulating, labeling, and storage of hazardous waste can be found in the Laboratory Safety Manual (Chemical Hygiene Plan). EH&S removes the waste from the laboratory or shop upon receiving a request for chemical waste removal via the Chemical Environmental Management System (CEMS). Instructions for submitting a chemical waste removal request via CEMS can be found in the Standard Operating Procedure (SOP) - Request for Chemical Waste Removal on CEMS, or see Section 14 of the Laboratory Safety Manual (Chemical Hygiene Plan). Contact EH&S at 817-272-2185 with any questions or concerns regarding hazardous waste disposal.

Section V. Chemical Spill Response and Reporting

In the event of a chemical spill, refer to Emergency Procedures and Equipment, Section 4 in the Laboratory Safety Manual (Chemical Hygiene Plan). Additional guidance for chemical spills can be found in the SOP - Laboratory Chemical Spills. UT Arlington laboratories/shops are equipped with a chemical spill kit if appropriate. Contact EH&S at 817-272-2185 to request a chemical spill kit or if refill supplies are required for an existing chemical spill kit.

Section VI. Safety Equipment Requirements and Testing (Fume Hoods, Safety Showers, Eye Washes)

It is important to have properly functioning safety equipment (fume hoods, safety showers, and eye washes) in the laboratories and shops. EH&S tests safety equipment semi-annually. A fume hood can protect laboratory personnel from inhaling chemical fumes or other airborne substances by constantly pulling in air and exhausting it out of the building. EH&S checks that the fume hood has a flow rate of at least 100 ft/min, the sash is moving properly, and the light is operational. The safety shower can decontaminate a person who has been exposed to a hazardous chemical and the eye wash can flush chemicals from the eye. For both the safety

shower and eye wash, EH&S ensures that there is sufficient water flow and that the equipment is functioning properly. Contact EH&S at 817-272-2185 if safety equipment is damaged or is in need of repair.

Section VII. Compliance with the Hazard Communication (HazCom) / Resource Conservation and Recovery Act (RCRA)

The 69th Legislature of the State of Texas in 1985 enacted the Texas Hazard Communication Act. The law became effective January 1, 1986, and was most recently revised in 1993. The purpose of this law is to inform workers and the general public about chemical hazards in the workplace and in the community. The Act requires public employers, such as UT Arlington, to provide their employees with information and training about hazardous chemicals which they may be exposed to at work. UT Arlington provides a Hazard Communication Manual for guidance. The Resource Conservation and Recovery Act (RCRA), enacted in 1976, is the principal federal law in the United States governing the disposal of solid waste and hazardous waste. Additional information can be found in the Laboratory Safety Manual (Chemical Hygiene Plan).

In addition to the mandatory EH&S Compliance training, new employees must also complete the online Hazard Communication and Waste Management (Academic/research) or Hazard Communication Non-Academictraining prior to working with or being exposed to chemicals. The training includes information on the Globally Harmonized System of Classification and Labeling of Chemicals (GHS). Employees must also complete site-specific training prior to working with or being exposed to chemicals for their individual workplaces. This training must be provided by the laboratory PI or shop supervisor. The PI or shop supervisor must document using the Laboratory Site-Specific Training Sign-in Sheet or Non-Laboratory Site-Specific Training Sign-in Sheet.

Section VIII. Approval and Acceptance of Chemical Donations

Laboratories and Shops may accept chemical donations from private/commercial companies. EH&S must approve all chemical donations prior to acceptance. CEMS PIs/chemical owners must submit a *Chemical Donation Approval Request* (Form 8-103) to EH&S at ehsafety@uta.edu. Chemicals must be new, not expired, arrive in unopened containers, and be accompanied by a safety data sheet. Contact EH&S at 817-272-2185 if receiving a donated chemical.

Section IX. Management of Chemical Inventory

UT Arlington utilizes the Chemical Environmental Management System (CEMS), a barcode-based system, to record and manage information about the quantity, location, and properties of chemical stock, biological agents, and hazardous waste disposal requests. This system has the capability to automate recordkeeping and waste removal requests, allow campus laboratories to share materials, and send email messages, etc.

A. **Accessing CEMSTo have access to CEMS an account must be created. To request an account, go to the**SOP - Request New CEMS Account.

B. **Adding Chemical Containers to InventoryRequests to have a new chemical container bar coded and added to the existing inventory can be submitted via**CEMS. The instructions for requesting adding chemical containers can be found in the SOP - Request to Inventory New Chemicals on CEMS.

C. **Updating Inventory of ChemicalsInstructions to update chemical container record can be found in**SOP - Update Inventory on CEMS.

D. **Periodic Physical Inventory of ChemicalsEach CEMS PI/chemical owner, or their appointed delegate, must conduct a physical count of the chemical inventory in their respective labs, shops and stockrooms every 12 months, then reconcile to the CEMS inventory listing noting and reporting any discrepancies. All necessary corrections shall be made and any remaining discrepancies, such as missing chemical containers, must be reported to EH&S on***CEMS Inventory Discrepancy* (Form 8-102).

E. **Waste Removal Requests**

A request to have hazardous waste removed from a laboratory or shop can be submitted via CEMS. The instructions for submitting a request can be found in the SOP - Request for Chemical Waste Removal on CEMS. Please contact EH&S at 817-272-2185 if any questions arise regarding this process.

F. **Expired Chemicals**

Each CEMS PI/chemical owner shall request the disposal of expired chemicals according to the manufacturer's expiration date by submitting a waste removal request or extension request (if it is necessary to retain the expired chemical) via CEMS per Standard Operating Procedure for Expired Chemicals.

G. **Safety Data SheetsCEMS users can search the database for a chemical Safety Data Sheet (SDS), formerly known as Material Safety Data Sheet (MSDS). Instructions on how to search for a chemical SDS can be found at**SOP - Search for Safety Data Sheet/Material Safety Data Sheet.

H. **Emergency Response Use with UT Arlington Police DispatchTo assist first responders during emergency situations, UT Arlington Police Department (UTAPD) Dispatch and City of Arlington Fire Department have access to CEMS. UTAPD Dispatch can communicate which chemicals are present in buildings and the properties/dangers of those chemicals to first responders. Due to the use of CEMS for emergency response it is important to ensure that all laboratories and shops maintain accurate chemical inventory.**

Section X. Promotion of Safety of Minors in the Laboratory

UT Arlington is committed to introducing minors to interesting and challenging scientific, scholarly, or artistic pursuits at a young age. These experiences should be handled in ways

that will promote the safety of the minors and will not impair the normal functions of the University. *Minors in Laboratories or Similar Facilities* (Policy 5-308) establishes restrictions and conditions under which certain minors are permitted to be in UT Arlington laboratories and other UT Arlington facilities that could pose a risk to their health. Contact EH&S at 817-272-2185 if any questions arise regarding this policy.

FORMS AND TOOLS/ONLINE PROCESSES

Forms

Laboratory Safety Evaluation Checklist (Form 8-36)

*Chemical Donation Approval Request (*Form 8-103)

Biological Lab Safety Evaluation Checklist (Form 8-26)

Shop Safety Evaluation Checklist (Form 8-75)

CEMS Inventory Discrepancy (Form 8-102)

Justification to Retain Expired Chemicals (Form 8-100)

*Chemical-free Area Designation Application (*Form 8-106)

EH&S Manuals and Documents

Hazard Communication Manual

Laboratory Site-Specific Training Sign-in Sheet

Non-Laboratory Site-Specific Training Sign-in Sheet

Minors in Laboratories or Similar Facilities (Policy 5-308)

SOP - UT Arlington Laboratory Evaluations

SOP - Chemical-free Areas in UT Arlington Laboratories

SOP - Laboratory Chemical Spills

SOP - Request for Chemical Waste Removal on CEMS

SOP - Search for Safety Data Sheets/Material Safety Data Sheets

Laboratory Safety Manual (Chemical Hygiene Plan)

Helpful Links

Chemical Environmental Management System (CEMS)

Environmental Health and Safety (EH&S)

Environmental Protection Agency (EPA)

Texas Commission on Environmental Quality (TCEQ)

Texas Hazard Communication Act

UT Arlington Emergency Management Plans

DEFINITIONS

Laboratory:

For the purposes of this Procedure, the term laboratory means all facilities covered by the EH&S Laboratory Evaluation Program at UT Arlington, which include the following:

- Research and teaching laboratories such as chemistry, biology, engineering, physics, geology, biomedical engineering, kinesiology etc.
- Animal and plant facilities such as animal holding rooms, surgical suites, greenhouses, etc.
- Environmental laboratories such as ecology outdoor nature laboratory, etc.
- Other facilities posing similar risks that are routinely surveyed by EH&S, such as ceramics and art studios, academic shops, and non-academic shops.

RATIONALE

This procedure was prepared by EH&S as a guideline for the safe use of chemicals at UT Arlington. It is crucial to provide safe methods, facilities, and equipment to manage chemicals safely in UT Arlington laboratories and shops. Safe laboratory practices and proper chemical waste management reduces the potential for injury and environmental release.

RELATED STATUTES, POLICIES, REQUIREMENTS OR STANDARDS

UT System Administration Policies and Standards	Other Policies and Standards

University Environmental Health & Safety Policy (Procedure 8-1)
Biological Safety (Procedure 8-10)
Use of Radiation Sources (Procedure 8-5)
Minors in Laboratories or Similar Facilities(HOP ADM 5-308)

APPENDICES

N/A

CONTACTS

If you have any questions about this procedure, contact the following departments:

Subject	Office Name	Telephone Number	Email/URL
All topics in procedure	Environmental Health & Safety	817-272-2185	ehsafety@uta.edu
Website access	Administrative Information Management	817-272-0222	aim@uta.edu http://www.uta.edu/aim

WEBSITE ADDRESS FOR THIS PROCEDURE

https://www.uta.edu/policy/procedure/8-11