

3.1.11

EMS Aspect: Research Activities, Office of Research, Chemical Hazardous Waste

Aspect Ranking: 9

The University of Texas Health Science Center at Houston (UTHSC-H) conducts biomedical research throughout campus. This document focuses on both, solid and liquid chemical wastes, which are generated from the laboratory research activities.

Environmental Compliance of Laboratory Chemical Waste

To comply with the hazardous waste regulations set forth in 40 CFR 261, specifically generation and storage requirements, the Environmental Health and Safety's (EHS) Environmental Protection Program (EPP) manages the disposal of all hazardous wastes generated in UHTHSC-H laboratories. The Environmental Protection Program provides guidance to faculty, staff and student for the collection and storage of hazardous waste and procedures for removal of wastes from laboratories.

Task/Activity Description:

Satellite Accumulation Areas (SAA's)

Laboratories generating and storing chemical waste during research procedures are called Satellite Accumulation Area's. The Environmental Protection Program provides compatible containers for the collection of the chemical wastes. Laboratory personnel are instructed to place a label on waste containers indicating its contents, date full, and lab room number. Researchers generating waste make the determination if waste hazardous. The Environmental Protection Program is available to assist researcher make hazardous waste determinations and has documented hazardous waste determinations for common waste streams.

If the contents of the container are hazardous the label must include the words "Hazardous Waste". The Environmental Protection Program removes chemical wastes from the SAA's within 72 hours once the container is full and the laboratory request a pickup through the hazardous waste line.

Central Accumulation Area's (CAA'S)

After chemical wastes are collected from SAA's they are moved to a Central Accumulation Area. Procedures for management of hazardous wastes in the central accumulation areas are detailed in Environmental Aspect 3.1.12.

Key Control Points:

- *Orientation Training* - All UTHSC-H employees and staff that work in research laboratories are instructed to attend the “*Basic Laboratory and Clinical Safety*” (BLCS) prior to their first day of employment. This portion is led by an EHS representative
- *Monthly BLCS Training* - Laboratory personnel who need refresher training for chemical waste procedures may attend the monthly BLCS Training
- *Hazardous Waste Line* - This voicemail system allows laboratory personnel to leave a voice message indicating that a waste container is ready for pick up
- *Environmental Health & Safety Web Page* - Chemical waste procedures and an online version of the BLCS Training are available online

Related Forms, Records, SOPs

- [Guidance Document- Disposal of ETBR waste](#)
- [Guidance Document- Collection of Chemical Waste](#)
- [Guidance Document- Hazardous Waste Determination](#)
- [Environmental Health & Safety Web Page](#)
- [ChemLog](#)

Personnel Responsible

Principal Investigators and Lab Personnel (campus-wide)

- At the point of generation, responsible for proper containment, labeling, storage and requesting collection of research waste

Safety Specialist, EPP

- Conduct RCRA hazardous waste management procedures
- Collection of chemical research waste
- Supply lab personnel with appropriate and compatible waste containers and labels
- Prepare hazardous waste for transportation and disposal

Safety Manager, EPP

- Oversight and review of hazardous waste programs

Director, EHS

- Provide management overview liaison with VP of the Office of Research

Environmental Compliance (Chemical Wastes) Program

Task/Activity Description:

Chemical or Biological Survey, inclusive of Hazardous Wastes

Schedule: Annual

To assist research staff in complying with the requirements for management of hazardous wastes, EHS conducts annual inspections of research laboratories utilizing infectious agents or chemicals identified as requiring approval through UTHSC-H's Chemical Safety Committee due to toxicity.

Inspections are performed by EHS staff utilizing a checklist survey form. Deficiencies are noted on the form by checking the "yes, no, or not applicable" boxes or by adding items to an additional comments section on the survey form. Once the survey is complete, a memo listing any noted deficiencies and corrective actions is sent to the principal investigator.

Deficiencies noted during the survey are tracked for resolution utilizing Environmental Health and Safety Assistant (EHSA). As part of the deficiency tracking process, at least thirty days are given to correct any deficiencies, before potentially escalating enforcement actions.

Key Control Points:

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- Identify potential mismanagement of hazardous and universal wastes
- Communicate environmental compliance requirements to personnel who generate hazardous and universal wastes

Related Forms, Records, SOPs:

- Biological Safety Program Survey
- Chemical Safety Program Survey

Personnel Responsible:

Principal Investigators and Lab Personnel (campus-wide)

- At the point of generation, responsible for proper containment, labeling, storage and requesting collection of research waste

Safety Manager/Safety Specialists, EPP

- Assist EHS staff performing surveys to correct deficiencies noted

Director, EHS

- Provides oversight and appropriate actions on the compliance process
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Environmental Management Systems and Environmental Awareness Training

Task/Activity Description:

For the communication of environmental programs and environmental management systems, Environmental Health & Safety provides initial training to research and clinical staff. This training introduces and reinforces environmental management system principles, chemical waste disposal, bloodborne pathogens, waste management practices specific to laboratory and clinical operations, and environmental concerns and compliance requirements for chemical waste management. The training is lead by an instructor and is incorporated into new employee orientation training and is also offered on a monthly basis to current employees. Additionally, the training materials are available on the EH&S web page.

Key Control Points:

- Communicate environmental compliance requirements, environmental management concepts, and emergency procedures to personnel who generate chemical wastes.

Related Forms, Records, SOPs:

- Basic Clinical and Laboratory Safety Training

Personnel Responsible:

Principal Investigator

- Ensure staff attends training

Manager/Safety Specialists, EHS

- Present training materials to laboratory and clinical staff
- Document training by obtaining a sign in sheet with all participants listed, deliver sign in sheet to EH&S administrative assistant who will enter names of personnel trained into a training data base

Director, EHS

- Provide management review, liaison with Principle Investigators (PI) if necessary
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Routine Management of Hazardous Waste to meet regulations:

Hazardous Waste Characterization (30 TAC 335.511)

Existing knowledge about the research processes and materials are utilized to classify hazardous, universal, and recyclable wastes. Material safety data sheets, manufacturers' literature, and other documentation generated in conjunction with a particular process or item are used to demonstrate process knowledge.

Universal Waste (40 CFR 273, 30 TAC §335.261)

"Small Quantity Handler of Universal Waste" means a universal waste handler who does not accumulate at any time 5,000 kilograms or more total of universal waste calculated collectively. "Universal Waste" means any of the following hazardous wastes that are subject to the universal waste requirements to include batteries, pesticides, mercury containing articles and thermostats, paint and paint-related waste, and spent lamps.

Emergency Response for Hazardous Materials (40 CFR 262.34(d)(5))

Incidents reported to EHS are entered into an incident database. The database is built into the EMS to enter in incidents as they occur and allowing for tracking, documentation, follow-up, and corrective action. Employees handling hazardous waste are trained annually at an appropriate level on emergency response procedures.