September 1, 2023

University of Texas at San Antonio
Hazardous Waste Disposal Procedures Plan

1.0 UTSA Policy

It is the policy of the University of Texas at San Antonio to comply with all regulated hazardous waste disposal in accordance with the Environmental Protection Agency (EPA) and the Texas Commission on Environmental Quality (TCEQ) regulations. An important aspect of this program is the proper handling, storage, and disposal of all hazardous waste generated on campus. Failure to comply with waste management regulations such as labeling and storage requirements can result in criminal and civil liability.

2.0 Chemical Waste Disposal Instructions

Prior to requesting hazardous waste disposal from the Hazardous Materials Management (HMM), university personnel must comply with the following requirements:

- Empty containers must be defaced of all hazardous symbols and warnings prior to disposal. Update ChemTracker to reflect the disposal and use of inventoried chemicals. HMM will remove empty containers to ensure no hazardous residue is present
- Determine if another person or lab could use any unused or unopened chemicals. This can be done by listing the chemical on our Chem Swap page on our HMM website. Principle Investigators can view the chemical listing by logging on to the website and requesting a Chem Swap
- UTSA will not tolerate hazardous waste disposal down sanitary or storm drains. Disposal of chemicals should be facilitated by the HMM.

2.1 Identification

All chemical waste subject to disposal must have a complete and accurate identification prior to disposal using hazardous waste labels provided by HMM. This provides an important aspect of a safe and environmentally sound hazardous waste management program. The use of the Safety Data Sheet (SDS) will help provide sufficient information for disposal procedures. Laboratory Safety (LS) maintains a copy of most SDSs used on campus. If you need a copy, submit your request to LS.

NOTE: HMM **will not** accept unknown/unlabeled chemicals. When the identity of a material cannot be determined, the expense for analysis/identification will be the responsibility of the department.

Ensure each individual item (bottle, bag, box, etc…) is clearly labeled using the hazardous waste label provided by HMM. List all constituents by their specific, non-abbreviated chemical names. Hazardous waste labels must be filled out completely and correctly. If multiple compatible chemicals are placed inside the waste container, then each chemical must be listed with percentage using process knowledge.

2.2 Segregation

UTSA has various waste streams identified through the TCEQ. In order to reduce hazardous waste disposal cost, in as much as possible, the HMM requires that users store and segregate their waste in accordance with the following segregation scheme:

Waste Stream	Description	Tx Waste Code
# 2	Lab Pack (non-bulked; solids, reactive, poisons)	0002003H
# 5	Inorganic Acids/Bases	0005104H
# 6	Non-halogenated/Halogenated organic solvents	0006204H
# 7	Non-halogenated flammable organic solvents	0007203H
# 8	Paint Thinner	0008211H
# 9	Halogenated organic solvent	0009202H
# 10	Photo Fixer	0010119H
# 11	Aqueous w/trace non-halogenated organic solvent	0011101H
# 12	Aqueous w/trace toxic heavy metals	0012113H
# 13	Paint	0013209H
# 14	Waste Oil	00142061
# 15	Formalin	00151021
# 16	Ethidium Bromide	00161021
# 22	Mercuric Iodide	0022119H
# 23	Solid Filters contaminated w/Halogen- Non-Halogenated Organic & Mercuric Iodide	0023310H
# 24	Broken thermometers/Equip. w/Mercury	0024319H
# 25	Soil spiked with arsenic in laboratory	0025302H
# 26	Contaminated soils with hydrocarbon	00263011
# 27	Soil contaminated with inorganic chemicals	0027302H

If hazardous waste cannot be segregated, a complete description of its contents must be provided in the hazardous waste disposal form (see section 2.3). This will include the name of each constituent and its percentage. Halogenated solvents should not be combined for disposal with non-halogen solvents because of the differences in management and disposal methods. Corrosives should not be combined with organic solvents.

Some chemicals will require special handling due to their explosive characteristic. If you have any chemicals requiring special handling, contact HMM. Shock-sensitive compounds suspected to contain unstable PEROXIDES should be considered extremely dangerous and must be handled very carefully. To avoid the chance of explosion, **DO NOT** attempt to open containers which may contain peroxides (i.e. ethers, picric acid, etc…). Use extreme caution when handling chemicals that are reactive with air, water, and other substances.

2.3 Hazardous Waste Disposal Forms

These forms can be viewed and filled out in BioRAFT at the following link:

https://utsa.bioraft.com/

Sign in with MyUTSA ID and PassPhrase. Fill out all information on the form as detailed as possible, with constituents and percentages matching the hazardous waste labels. The form and hazardous waste box must indicate the hazard associated with the waste.

Upon completion and submittal to HMM, write the request# from BioRAFT in the upper right-hand corner of the hazardous waste label provided by HMM.

Update ChemTracker to reflect the disposal and use of inventoried chemicals.

Chemicals will not be pick-up if these forms are not fill properly, or they are missing hazardous waste labels. Most pick-ups are accomplished within three workdays. However, if there is a need for an emergency pick-up contact HMM at ext. 5808.

3.0 Disposal Instructions for Other Hazardous Wastes

3.1 Non-Flammable Liquid Waste

For large generators of non-regulated waste such as Ethidium Bromide, Formalin, Compressor Oil, etc… they can accumulated in 2 ½ gallon plastic container with a wide mouth, provided by HMM. The container must be clean and clearly labeled with the researchers' name and department so a return location can be determined. Hold containers until they are 90% full. They will also require the hazardous waste disposal form submitted and attached to them.

3.2 Flammable Solvent Waste

2 ½ gallon high density polyethylene plastic containers are provided to all waste generators. Ensure that it is filled only to 90% capacity. These containers must be labeled with its contents as described in section 2.3.

3.3 Corrosive Waste

Corrosive waste must be kept in PVC coated containers. Do not mix organic and inorganic acid/bases. Small volumes of inorganic acids/bases generated during teaching labs or research can be neutralized and flushed down the sanitary drain with copious amount of water. Label the containers with waste contents as describe in section 2.3.

3.4 Toxic/Reactive/Oxidizer Waste

Most solid waste can be left in its original container for disposal. Do not deface these containers if they are holding its original contents. Extra precautions should be taken during storage awaiting disposal. Liquid waste must be properly labeled with contents including percentage if mixed in aqueous solution. Label the containers with waste contents as describe in section 2.3.

4.0 Polychlorinated Biphenyls (PCBs)

Most PCBs on campus are found in transformers and light ballasts. Light ballasts containing PCBs, and subject to replacement, must be turned in to HMM for disposal. Transformers must have the oil drained prior to disposal. This PCB oil drained from the transformers will be treated as hazardous waste and disposed of by HMM.

5.0 Batteries

Waste batteries may be considered hazardous waste because of their corrosivity, reactivity, or toxicity. The main environmental concerns of batteries are the harmful materials they contain, such as Mercury (Hg), Cadmium (Cd), and Lead. Lead acid batteries are considered corrosive as well as toxic.

All batteries, except Alkaline, should be turned in to HMM for recycling. Any large Lead acid batteries removed from emergency generators should be processed through HMM. Vehicle lead acid batteries are turned in to Auto Shop in Facilities. Alkaline batteries are disposed of as normal trash as long as they are not accumulated in large volume.

Remove batteries from battery-operated equipment and recycle them before disposing of the equipment.

6.0 Paint

Empty latex paint cans can be disposed of through normal trash; provided the cans have been allowed to dry and no liquid paint residue is present. HMM will collect all other types of paint cans if not empty.

7.0 Photographic Developer and Fixer

Photo Fixer is collected and recycled under the silver recovery program through a contract company. All Fixer should be collected 2 ½ gallon polyethylene plastic container. Make sure that your name, building, and room number are stenciled on the container for prompt return. Hold containers for disposal until they are 90% full.

8.0 Biohazardous Waste

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Biohazardous waste includes but is not limited to the following discarded items:

- Cultures and stocks
- Pathological waste. **NOTE: human remains must be doubled bagged with red bags provided by HMM.**
- Human blood and blood products
- Contaminated sharps
- Contaminated animal carcasses, body parts, and bedding
- Wastes from Student Health Services
- Patient isolation wastes, unless determined to be non-infectious by the infection control committee at the Student Health Care facility.
- Any other contaminated equipment or material which, in the determination of the Institutional Biosafety Committee, presents a significant risk of infection because it is contaminated with, or may reasonably be expected to be contaminated with, pathological agents.

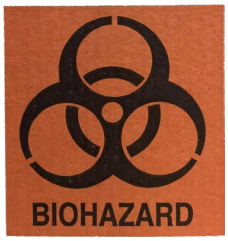
Biological waste to be Incinerated

- Infectious/non-infectious pathological waste
- Body parts, tissues, organs, anatomical remains.
- Infectious microbiological waste
- Cultures and culture dishes, stocks, disposable devices used for transfer, etc.
- BSL – 3 biological waste (after autoclaving)
- Genetically modified organisms
- Nano particles
- Waste from Clinics (Student Health Services)

NOTE: all other biological waste that does not meet the above criteria will be submitted as autoclave.

Biohazardous Waste Bags and Containers

HMM provides biological waste boxes and biological waste red bags that meet all requirements for proper biological waste disposal and transportation. The biological waste bags and boxes are both labeled with the proper signage and verbiage pictured below.



Laboratory Biohazardous Waste Containers

Biological waste box must be lined with biological waste red bags before adding the waste. The labels on the box must be visible once a red bag is added.

Biological waste box needs to be placed in the laboratories near the point of generation. Biological waste must be segregated from other wastes that are not contaminated, no trash should be in the biological waste box. Avoid, if possible, mixing biohazardous waste with chemical or radioactive materials. Biological waste must be free from radioactive and chemical contamination to be classified and disposed as biohazardous waste.

Biohazardous Waste Box Pickup

The following process will be used by HMM to collect and dispose of biological waste and sharps containers throughout campus.

- Pick-up will occur as requested by generators through https://utsa.bioraft.com/.
- All biological waste boxes and sharps containers must remain inside the laboratory or designated storage location until pick up by HMM.
- No container will be placed in the hallway outside the labs.
- The following markings must be attached or written in permanent marker on the outside of each container:
    - Name of Principal Investigator
    - Building and Room Number
    - Date Container was sealed
    - Request# from BioRAFT
- All contents of must be properly sealed in the bag by double tying the bag or using a tie wrap.
- Sharps container lid must be locked, with a piece of tape over the lid to secure.
- The boxes should not exceed 20 pounds, and should not be bent, crushed, or show any damage to the integrity of the biological waste box.
- Once all biological waste has been collected, HMM staff will affix the control number label, provided to UTSA by the approved waste contractor to each box.

Several facilities have common shared biological waste freezers that HMM services weekly. They are located in:

- SAL 1.103
- BSB 3.03.24

8.1 Sharp Container

Hypodermic syringes and needles are considered regulated medical waste, and must be disposed of according to state and federal regulations. All syringes, needles and other “sharps” should be placed in an approved rigid, leak-proof, and puncture-resistance container provided by HMM or from an approved vendor. Sharp containers should be closed and lids properly secured when

ready for disposal. To prevent accidental opening during the collection and transportation, make sure the containers are not over-filled and have proper functioning secure lids.

Sharp containers will be submitted through BioRAFT in the same manner as biological waste boxes. Please see "Biohazardous Waste Box Pickup" above.

Sharp containers are provided by HMM on an emergency need. However, for those departments not requiring constant need, HMM will provided them free of charge.

9.1 Used Light Bulb Waste

On a recurring basis UTSA personnel generate used light bulbs. Many lamps and bulbs contain toxic substances, such as lead and mercury that pose a threat to public health. These hazardous lamps are regulated under the universal waste rule (30 TAC §335.261). Lamps that may quality for handling as universal waste are:

- Fluorescent lamps
- Mercury vapor lamps
- High-pressure sodium vapor lamps
- Low-pressure sodium vapor lamps
- Metal halide lamps
- Incandescent lamps

Disposing of UW lamps

There are two options for disposing of universal waste lamps: (1) permitted hazardous waste landfill or (2) recycling. State regulations prohibit disposal of hazardous waste lamps and light bulbs in municipal solid waste landfills. One exception is for Conditionally Exempt Small Quantity Generators (i.e. Downtown Campuses) However, UTSA should comply with state regulations at all sites for environmental reasons.

Accumulation Time Limits

UTSA, as a small quantity UW handler, may accumulate UW lamps for no longer than one year from the date that the UW lamps are generated. One exemption to this rule is if we can prove that the extension is necessary to facilitate proper recovery, treatment, or disposal.

Lamps being accumulated must be clearly marked with the date that accumulation started. These containers must be marked with the following phrases:

- "Universal Waste—Lamp(s)"
- "Waste Lamp(s)"
- "Used Lamp(s)

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Storage

On-site storage at UTSA is accomplished by HMM. The storage location is located on West Campus inside a portable buildings behind Central Receiving. UW lamps are stored in the original container.