

**The University of Texas at San Antonio  
Office of Environmental Health, Safety and Risk Management**

**Part B**

**Chemical Waste Management Safety Plan**

**i: SIGNATURE PAGE**

This Chemical Waste Management Safety Plan has been reviewed for regulatory compliance and best management practices by the undersigned individuals and is hereby adopted for use and compliance by all employees at The University of Texas at San Antonio.

PRINTED NAME	SIGNATURE	TITLE	DATE
J. Brian Moroney		Director, EHSRM	8/19/2011
Richard M. Garza		Environmental and Construction Safety Manager	8/19/2011

Original: 11/12/2008

**This plan was reviewed/revised on 8/19/2011 and replaces the 11/12/2008 version.**

**Changes to this plan have been highlighted in "gray" and are summarized below:**

Revised: 8/19/2011

**Section iii E. page 6: Emergency Contact Personnel:**

**Change David Hernandez to Steven Barrera.**

**Change Title for Richard Garza to Environmental and Construction Safety Manager**

**Change Title for Wendy McCoy to Laboratory Safety Manager**

**Change RSO to Curtis Nesbit , Radiation and Laser Safety Coordinator**

**Section VI B 2 page 9: Add sentence regarding Chemical Swap Program**

**Section VII E: Add "may"**

## ii: Table of Contents

i.	Signature Page.....	2
ii.	Table of Contents.....	3
iii.	Emergency Procedures & Controls.....	4
I.	Overview and Purpose.....	7
II.	Scope.....	7
III.	Responsibilities.....	7
IV.	Periodic Review.....	8
V.	Waste Generator Status.....	8
VI.	Chemical Waste Disposal.....	8
VII.	Special Consideration.....	11
	Attachment 1 .....	14

### iii. Emergency Procedures & Contacts

UTSA's emergency preparedness plan ([http://utsa.edu/oep/OEP\\_Plan.htm](http://utsa.edu/oep/OEP_Plan.htm)) outlines various scenarios which UTSA personnel could encounter at any UTSA facility. It is imperative that all faculty, staff and students become familiar with this plan. Familiarity and knowing what immediate actions to take could help prevent serious bodily injury or facility damage.

#### A. Emergency VS Non-Emergency Situations

##### 1. Emergency

Release of hazardous substances that pose a significant threat to health and safety or that, by their very nature, require an emergency response regardless of the circumstances surrounding the release or the mitigating factors are emergency situations. The following definitions designate an emergency situation:

- a. The situation is unclear to the person causing or discovering the spill.
- b. The release requires evacuation of persons.
- c. The release involves or poses a threat
- d. Fire, suspected fire, explosion or other imminent danger
- e. Conditions that are Immediately Dangerous to Life and Health (IDLH)
- f. High levels of exposure to toxic substances.
- g. The person(s) in the work area is uncertain they can handle the severity of the hazard with the personal protective equipment (PPE) and response equipment that has been provided and/or the exposure limit could easily be exceeded.

##### 2. Non-Emergency

Conversely, releases that do not pose significant safety or health hazards to person(s) in the immediate vicinity or to the person(s) cleaning releases, and do not have the potential to become emergencies within a short time frame are not emergency situations. The following situations are Not emergency situations:

- a. The person causing or discovering the release understands the properties and can make an informed decision as to the exposure level.
- b. The release can be appropriately cleaned up by the lab personnel using authorized (certified) spill kits.
- c. The materials are limited in quantity, exposure potential, or toxicity and present minor safety or health hazards to persons in the immediate work area or those assigned to clean up the activity.
- d. Incidental releases of hazardous substances that are routinely cleaned up by EHSRM or trained custodians from outside the immediate release area need not be considered an emergency.

## B. Emergency Situation - Fire.

The following steps are basic protocol for handling a fire or fire-related emergency in the laboratory:

1. Pull the fire alarm
2. Call 4-9-1-1 (UTSA Police Department) from a safe location
3. Verbally notify all personnel in the affected or immediate area
4. Evacuate

## C. Emergency Situation - Spill.

If the spill is of high toxicity or flammability, you are unsure of how to proceed or is more than one can easily contain, execute the following:

1. Call 4-9-1-1
2. Evacuate personnel from the spill area and alert neighbors to the spill
3. Isolate the spill area and close doors to the room where the spill occurred
4. Remove ignition sources and shut down equipment
5. Establish exhaust ventilation to the outside of the building only
6. Turn on exhaust equipment
7. Open windows

## D. Emergency Situation – Personnel Contamination

If a person becomes contaminated due to an accidental splash or by a reaction which causes an explosion, quick action can minimize the damage caused by hazardous chemicals. It is important that the following actions be initiated:

1. Remove person(s) from spill area to fresh air only if an attempt to rescue victim(s) does not present a danger to the rescuers.
2. Remove contaminated clothing while under an emergency shower.
3. Flood affected area with cold water for at least 15 minutes or longer if pain persists.
4. Wash skin with mild soap and water - do not use neutralizing chemicals, unguents, creams or lotions.
5. Contact emergency response personnel and assure they know the chemical(s) involved.
6. Evacuation of the building is mandatory if chemicals or contaminants could enter the air circulation system of a building.

E. Emergency Contact Personnel include:

Steven Barrera, Director of Public Safety/Chief of Police 458-4242

Brian Moroney, Director Environmental Health, Safety and Risk Management 458-5250

Richard Garza, Environmental & Construction Safety Manager, EHSRM 458-5808

Wendy McCoy, Lab Safety Manager 458-6101

Curtis Nesbit, Radiation and Laser Safety Coordinator 458-6697

## I. UTSA Overview & Purpose

It is the policy of the University of Texas at San Antonio (UTSA) to comply with all regulated hazardous waste disposal in accordance with the Environmental Protection Agency (EPA) 40 Code of Federal Regulation Part 260 through 265 and 268, the Texas Commission on Environmental Quality (TCEQ) 30 Texas Administrative Code 335 and Department of Transportation (DOT) 49 Code of Federal Regulation Part 171-180. 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.

## II. Scope

This hazardous waste management safety plan applies to all UTSA owned, leased, or operated facilities where hazardous waste is generated. All faculty, staff and students are required to comply with all aspects of this program as well as all federal, state and local regulations.

## III. Responsibilities

### A. Environmental Health Safety and Risk Management

1. Responsible for maintaining accurate documentation for proper classification of generator status with TCEQ.
2. Responsible for properly classifying waste based on process knowledge or by analytical sampling.
3. Responsible for maintaining all documentation associated with the chemical waste. This includes hazardous waste requests forms submitted for pick-up, monthly waste pick-up volume with generator's name, and annual waste generation volume.
4. Ensure that all waste collected is properly segregated based on hazard characteristics, compatibility, and in appropriate waste container.
5. Report annual waste summary to TCEQ under the STEERS program.

### B. Faculty, Staff and Students

1. Responsible for segregating hazardous waste and properly collecting in compatible containers. Ensure location of storage is approved by EHSM before usage.
2. Responsible for properly labeling waste containers with name of the waste, start date of waste collection, and initials of responsible person.

3. Responsible for keeping all containers properly closed except for adding or removing chemicals.
4. Responsible for filling out the on-line hazardous waste form <http://www.utsa.edu/safety/HazWaste/hazwaste.htm> and submitting to EHSRM for pick-up.
5. Ensure each person generating hazardous waste attends the Hazardous Waste Generator training provided by EHSRM. Class schedules are found in the Training and Development Newsletter. Training is also offered on-line via the Learning Source on the Human Resources web site.

#### IV. Periodic Review

This Plan will be reviewed periodically, but at least every 3 years for compliance with the most recent applicable federal, state and local rules and regulations.

#### V. Waste Generator Status

UTSA maintains a Small Quantity Generator status and, as such, opts. the 180-day rule for accumulating (store) hazardous waste anywhere on site, without a RCRA TSDF permit. The accumulation storage site for UTSA is located on West Campus behind Central Receiving. There are three facilities, which have been registered through UTSA Notice of Registration with the Texas Commission on Environmental Quality. Each facility is detailed of its contents in the Operating Procedures document on Waste Management.

There are conditions which must be adhered to in order to comply with 40 CFR 262.34(d):

1. Accumulate "on-site" for up to 180 days
2. Never exceed 6,000 kg of hazardous waste on site at any time
3. Store the waste in containers compatible with the waste
4. Mark the accumulation start date on each container
5. Each container must be clearly marked with the words "Hazardous Waste"
6. Have an emergency preparedness plan
7. Have a waste analysis plan

#### VI. Chemical Waste Disposal

- A. Request for chemical or biological waste pick-up can be found at the following site: (<http://www.utsa.edu/safety/HazWaste/hazwaste.htm>). The waste pick-up will be accomplished within three working days by EHSRM. However, if circumstances warrant immediate pick up, EHSRM will respond as soon as possible. Generators must insure that all waste is properly tagged with the



hazardous waste disposal form. Waste will be picked up from designated locations. Procedures for waste pick up are as follows:

1. Submit pick up request on EHSRM website.
2. Place the waste in the designated location with a completely filled waste form
3. Ensure waste is stored in a compatible waste container to prevent leaks or damage
4. No unknowns will be picked up without prior coordination
5. Attach the form to the container.

**NOTE:** Chemicals will not be picked up if these forms are not filled out properly. However, if there is a need for an emergency pick-up, contact EHSRM at ext. 5250.

B. Prior to requesting hazardous waste disposal from the Environmental Health, Safety and Risk Management (EHSRM), university personnel must comply with the following requirements:

1. Empty containers must be defaced of all hazardous symbols and warnings prior to disposal. EHSRM will remove empty containers for proper disposal. Ensure no hazardous residue is present.
2. 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 EHSRM website. Principle Investigators can view the chemical listing by logging on to the website and requesting a Chem Swap.
3. UTSA will not tolerate hazardous waste disposal down sanitary or storm drains. Disposal of chemicals should be facilitated by the EHSRM

**Note:** All waste subject to disposal must be submitted to EHSRM via the form found at (<http://www.utsa.edu/safety/HazWaste/hazwaste.htm>). It is important that the form be filled out in its entirety to expedite transfer of the waste.

C. Identification and Storage

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

**Note:** EHSRM will not accept unknown/unlabeled chemicals. The expense for analysis/identification, when the identity of a material cannot be determined, will be the responsibility of the department.

Waste subject to disposal must be properly labeled at all times starting from the time the accumulation process starts. In accordance with our federal rules (40 CFR §261) and state rules (30 TAC 355), all containers used to store hazardous waste, at a minimum, must comply with the following information:

1. Write the words "Hazardous Waste" on the container
2. Complete names of the chemical waste (no abbreviations or chemical symbols) must be written
3. Date accumulation begin
4. Initials of the person generating the waste
5. The containers must be in good condition and be compatible with the waste

#### D. Segregation

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

Waste Stream #2 Lab Pack (non-bulkable)

Waste Stream #5 Inorganic Acids/Bases

Waste Stream #7 Non-halogenated flammable organic solvents

Waste Stream#8 Paint Thinner

Waste Stream #9 Halogenated organic solvent

Waste Stream #10 Photo Fixer

Waste Stream #11 Aqueous w/trace non-halogenated organic solvent

Waste Stream #12 Aqueous w/trace toxic heavy metals

Waste Stream #13 Paint

Waste Stream #14 Waste Oil

Waste Stream #15 Formalin

Waste Stream #16 Ethidium Bromide

Waste Stream #22 Mercuric Iodide

Waste Stream #23 Solid Filters contaminated w/Halogen-Non Halogenated Organic & Mercuric Iodide

Waste Stream #24 Broken thermometers/Equip. W/Mercury

Waste Stream #25 Soil spiked with arsenic in laboratory

Waste Stream #26 Contaminated soils with hydrocarbon

Waste Stream #27 Soil contaminated with inorganic chemicals

If hazardous waste cannot be segregated, a complete description of its contents must be provided in the hazardous waste disposal form (see section 2.5). This will include the name of each constituent, its percentage, and the volume of each.

Halogenated solvents should not be combined for disposal with solvents that do not contain halogens because of the differences in handling and disposal methods. Corrosives should also not be combined with organic solvents.

#### E. Labeling

Ensure each individual item (bottle, bag, box etc...) is clearly labeled with the chemical name, contaminant and concentration if known. Do not write common names. List all components by their specific, non-abbreviated chemical names. Hazardous waste must be labeled with the words "Hazardous Waste". If multiple chemicals are placed inside the waste container, then each chemical must be listed with percentage and volume.

### VII. Special Consideration

- A. Some chemicals will require special handling due to the volume of waste or explosive characteristic. If you have any chemicals requiring special handling, contact EHS&RM. Shock-sensitive compounds that are 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 (i.e. ethers, picric acid, etc...) Use extreme caution when handling air, water, and other reactive and dangerous substances.

#### 1. Non-Flammable Liquid Waste

For large generators of non-regulated waste such as Ethidium Bromide, Formalin, Compressor Oil, etc... they can be accumulated in a 20 liter plastic container with a wide mouth. 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 attached to them.

## 2 Flammable Solvent Waste

Flammable solvents can be collected in 4-liter glass bottles. For large generators, the use of 20-liter metal containers is another option provided that it is filled only to 90% capacity. These containers must be labeled with its contents as described in section 2.3..

## 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.

## 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

## 5. Photographic Developer and Fixer

All Fixer should be collected in either 4-liter plastic bottles or 20-liter plastic container. Make sure that if you generate 20-liter containers that your name, building, and room number are stenciled on the container for prompt return. Hold containers for disposal until they are 90% full.

## B. Used Light Bulb Waste

1. 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 qualify for handling as universal waste are:

- a. Fluorescent lamps
- b. Mercury vapor lamps
- c. High-pressure sodium vapor lamps
- d. Low-pressure sodium vapor lamps
- e. Metal halide lamps
- f. Incandescent lamps

## 2. Disposing of universal waste 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 Campus and The Institute of Texans Culture).

### 3. Accumulation Time Limits for Universal Waste Lamps

UTSA, as a universal waste handler, may accumulate universal waste lamps for no longer than one year from the date that the 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.

### 4. Accumulation marking

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

- a. "Universal Waste—Lamp(s)"
- b. "Waste Lamp(s)"
- c. "Used Lamp(s)"

### 5. Storage

On-site storage at UTSA is accomplished by EHS&RM. The storage location is located on West Campus inside a portable building behind Central Receiving. Universal waste lamps are stored in the original container.

## C. 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 EHSRM 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 EHSRM.

## D. Batteries

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

All batteries, including Alkaline, should be turned in to EHSRM for recycling. Any large Lead acid batteries removed from emergency generators or vehicles should be processed through EHSRM.

Remove batteries from battery-operated equipment and recycle them before disposing of the equipment. See attachment 2 for types of batteries and disposal methods.

#### E. Paint

Latex paint cans, **may** be disposed of through normal trash provided the cans have been allowed to dry and no liquid paint residue is present. EHSRM will collect all other paint.

## Attachment 1: Type of Batteries and Disposal Methods

Battery Type	Common Name	Size Available	Examples of Use	Proper Disposal
Alkaline Manganese	Coppertop, Alkaline	AAA, AA, C, D, 6V, 9V	Flashlights, calculators, toys, clocks, smoke alarms, remote controls	Turn in to EHS&RM
Button	Mercuric Oxide, Silver Oxide, Lithium, Alkaline, Zinc-Air	Sizes vary	Watches, hearing aids, toys, greeting cards, remote controls	Turn in to EHS&RM <a href="#">(Environment, Health and Safety Online)</a>
Carbon Zinc	"Classic", Heavy Duty, General Purpose, All Purpose, Power Cell	AAA, AA, C, D 6V, 9V	Flashlights, calculators, toys, clocks, smoke alarms, remote controls, transistor radios, garage door openers	Turn in to EHS&RM
Lithium	Usually has "lithium" label on the battery	3V, 6V, 3V button	Cameras, calculators, computer memory back-up, tennis shoes	Turn in to EHS&RM
Nickel-Cadmium (Rechargeable)	Either unlabeled or labeled "Ni-Cd"	AAA, AA, C, D, 6V, 9V	Flashlights, toys, cellular phones, power tools, computer packs	Turn in to EHS&RM <a href="#">(Environment, Health and Safety Online)</a>
Reusable Alkaline Manganese (Rechargeable)	Renewal	AAA, AA, C, D	Flashlights, calculators, toys, clocks, radios, remote controls	Turn in EHS&RM
Sealed Lead Acid (Rechargeable)	"Gel," VRB, AGM, Cyclone, El Power, Dynasty, Gates, Lithonia, Saft, Panasonic, Yuasa	Multiples of 2 Volts: 2V, 6V, 12V	Video cameras, power tools, wheelchairs, ATV's, metal detectors, clocks, cameras	Turn in to EHS&RM
Lead Acid Vehicle Batteries	Autozone, Sears Die Hard, Yuasa	12V	Cars, trucks, motorcycles	Turn in to EHS&RM