

**TARLETON STATE UNIVERSITY
HAZARDOUS WASTE MANAGEMENT
PROGRAM**

Office of Risk Management and Safety
August 2009

1. GENERAL

The following information is provided to assist Tarleton State University in establishing procedures to meet safety requirements for Hazardous Waste Management and to protect students, employees and the environment.

2. PURPOSE

The purpose of this document is to inform faculty, staff, employees, and students at Tarleton State University regarding Federal and State hazardous waste disposal regulations and to define the Tarleton Hazardous Waste Management Program.

3. SCOPE

This Program applies to all Tarleton State University Facilities. The Program pertains to hazardous chemical waste and does not include procedures for the management of radioactive, infectious, and biological waste. The Tarleton Office of Risk Management & Safety (RMS) administers the Hazardous Waste Management Program. Compliance with the program is critical and requires full cooperation by all campus entities.

4. DEFINITIONS

- a. **Acutely Hazardous Waste** – In accordance with 40 CFR§261.11(a)(2), hazardous waste that has the following criteria:
 - i. fatal to humans in low doses
 - ii. in the absence of data on human toxicity capable of causing or significantly contributing to an increase in serious irreversible, or incapacitating reversible illness
- b. **Central Accumulation Area** - Site designated by the Office of Risk Management and Safety to be used for the storage of hazardous wastes prior to shipment to permitted disposal facilities. There are two Central Accumulation Areas on Tarleton State University campus:
 - i. Secured area behind Building 671 and across from Physical Plant
 - ii. Secured building behind Building 919 (Science Bldg)
- c. **Disposal** - The discharge, deposit, injection, dumping, spilling, or placing of any solid waste or hazardous waste (whether containerized or non-containerized) into or on any land or water so that such solid waste or any constituent thereof may enter the environment or be emitted into the air or discharged into any water, including groundwaters.
- d. **EPA Identification Number** - The number assigned by the Environmental Protection Agency to each generator, transporter, and processing, storage or disposal facility.

- e. **Facility** - Includes all contiguous land, and structures, other appurtenances, and improvements on the land used for storing, processing, or disposing of municipal hazardous waste or industrial solid waste.
- f. **Generator** - Any person, by site, who produces municipal hazardous waste or industrial solid waste; any person who possesses municipal hazardous waste or industrial solid waste to be shipped to any other person; or any person whose act first causes the solid waste to become subject to regulation.
- g. **Hazardous Material** - a substance or material, including a hazardous substance, which has been determined by the Secretary of Transportation to be capable of posing an unreasonable risk to health, safety, and property when transported in commerce, and which has been so designated.
- h. **Hazardous Waste** - Any solid waste material listed or identified in Title 40 Code of Federal Regulations, Part 261, Subpart C and D or exhibiting the characteristics of ignitability, corrosivity, reactivity, or E.P. toxicity also defined in Part 261.
- i. **Manifest** - A legal document containing required information, which must accompany shipments of Municipal Hazardous Waste or Class I-Industrial Solid Waste transported on public roads or thoroughfares.
- j. **Mixed Waste** - A radioactive waste that is also a hazardous waste.
- k. **Permit** - A written document issued by EPA or TCEQ that, by its conditions, authorizes the construction, installation, modification, or operation of a specified municipal hazardous waste or industrial solid waste storage, processing, or disposal facility in accordance with specified limitations.
- l. **Processing** - The extraction of materials, transfer, volume reduction, conversion to energy, or other separation and preparation of solid waste for reuse or disposal, including the treatment or neutralization of hazardous waste, designed to change the physical, chemical, or biological character or composition of any hazardous waste so as to neutralize such waste, or as to recover energy or material from the waste or so as to render such waste non-hazardous or less hazardous; safer to transport, store, and dispose; or amenable for recovery, amenable for storage, or reduced in volume.
- m. **Recyclable Materials** - Wastes that are recycled. Recycled material is used, reused, or reclaimed.
- n. **Reclaimed material** is processed or regenerated to recover a usable product. Examples: Recovery of lead from spent batteries, or regeneration of spent solvent.

- o. **Satellite Accumulation Area** - An area, system, or structure used for temporary accumulation of hazardous waste prior to transport to the central accumulation area. Must have a sign posted identifying the location of SAA. Examples: workspace corner, lab area, closets, etc.
- p. **Solid Waste** - Any garbage, refuse, sludge from a waste treatment plant, water treatment plant, or air pollution control facility or other discarded material, including solid, liquid, semi-solid, or contained gaseous material resulting from industrial, municipal, commercial, mining and agricultural operations, and from community and institutional activities.
- q. **Storage** - The holding of solid waste for a temporary period, at the end of which the waste is processed, disposed of, recycled, or stored elsewhere.
- r. **Texas Solid Waste Number** - The number assigned by the TCEQ to each generator, transporter, and processing, storage, or disposal facility.
- s. **Transporter** - Any person who conveys or transports municipal hazardous waste or industrial solid waste by truck, ship, pipeline or other means.
- t. **Universal Waste** – a subtype of hazardous waste subject to 40 CFR Part 273 and TAC 335.261 to include:
 - i. Batteries including lead-acid that are not managed under 40 CFR 266, Subpart G;
 - ii. Recalled pesticides that are part of a voluntary or mandatory recall under FIFRA or pesticides managed as part of a waste pesticide program; and
 - iii. Mercury-Contained Devices (i.e. thermostats, switches, thermometers, etc.)
 - iv. Spent Lamps including Fluorescent(Hg), Halogen(Hg), Metal Halide(Hg), High/Low Pressure Sodium(Hg), Mercury Vapor(Hg), Incandescent(Pb).
 - v. Paint and Paint-Related wastes – considered universal waste according to Texas and subject to 30 TAC 335.262. If this waste is shipped out of Texas it must be manifested as hazardous waste.

5. BACKGROUND

Tarleton State University is designated as a ‘Conditionally Exempt Small Quantity Generator’(CESQG) of hazardous waste. If monthly accumulation of hazardous wastes should ever exceed 220 lbs or 2.2 lbs of acutely hazardous wastes, then TSU will be designated as a ‘Small Quantity Generator’ (SQG) and must comply with the State and Federal regulations on waste disposal associated with that classification. Both the Texas Commission on Environmental Quality (TCEQ) and the Environmental Protection Agency (EPA) may inspect the Tarleton Hazardous Waste Management Program for compliance.

Tarleton is not permitted to treat or dispose of waste locally. All waste must be transported to a permitted off-site facility for further storage, treatment, and/or disposal. It is illegal to dispose of hazardous chemical waste by dilution, evaporation, or dumping into the sanitary or storm sewers or into the local landfill.

The Office of Risk Management and Safety administers the collection, transportation, and storage of hazardous chemical waste prior to final disposal. In addition, the department provides technical information and assistance to individual generators and maintains permanent records of all hazardous chemical waste movement on the main campus. For information on the transportation of hazardous materials refer to the Hazardous Materials Transportation Program or contact the Office of Risk Management and Safety.

6. HAZARDOUS WASTE DISPOSAL REGULATIONS

Since Federal and State regulations govern hazardous chemical waste disposal at Tarleton, failure to comply with any hazardous chemical waste regulation may result in substantial fines and penalties for the University; individual generators (e.g., principal investigators, employees) causing the violation may be personally liable. Violations may range from failure to properly label a container of hazardous waste to intentionally disposing of hazardous chemical waste into the air, down the drain, or in the garbage.

As a Conditionally Exempt Small Quantity Generators (CESQG) of hazardous chemical waste, Tarleton has been issued an EPA Identification Number and a Texas Solid Waste Registration Number. Before transporting or offering hazardous chemical waste for transportation to an off-site facility, all requirements of packaging, labeling, marking and placarding must be met.

A waste generator never totally loses liability for environmental damage; therefore, the selection of a reliable disposal facility is very important. In Texas, penalties for non-compliance may be civil, criminal, or administrative violations with penalties ranging from fines of up to \$25,000 per day to a 15-year prison term for individuals.

7. HAZARDOUS WASTE DISPOSAL PROGRAM

Generators are responsible for following the University disposal procedures, for assuring that their employees are trained in proper disposal procedures, and for properly identifying the hazardous chemical waste generated. The following procedures are intended to assure compliance with applicable Federal and State regulations for the proper management of hazardous chemical waste.

a. Hazardous Chemical Waste Determination

A material becomes "waste" when the individual generator determines that it is no longer useful and should be discarded. If the material is to be discarded, the Office of Risk Management and Safety must determine whether the chemical

waste is non-hazardous or hazardous. A material is "non-hazardous chemical waste" if it does not meet the definition of "hazardous chemical waste". A material is "hazardous chemical waste" if it meets one or more of the following:

- i. Is a chemical listed under 40 CFR 261
- ii. Is a mixture or solution containing a listed chemical
- iii. Meets the definition of one of the following:
 - 1) Ignitability (flashpoint $<60^{\circ}$ C or supports combustion);
 - 2) Reactivity (e.g., responds violently to air or water, cyanides, explosives, unstable chemicals);
 - 3) Corrosivity (pH <4 or >10);
 - 4) EP toxicity (e.g., pesticides, heavy metals, poisons);
 - 5) Universal Waste;
 - 6) Any material not excluded from regulations.

b. General Information

- i. Non-hazardous waste may be disposed of using the sanitary sewer or regular trash.
- ii. Hazardous chemicals can be treated to reduce the hazard or the quantity of waste in the laboratory if the treatment procedure is included in the experimental protocol.
- iii. Gas cylinders should be returned to the manufacturer or distributor whenever possible. If you have non-returnable cylinders, please notify the Office of Risk Management and Safety for evaluation and proper waste classification.
- iv. Photographic wastes may be considered hazardous. If you have photographic lab waste, please notify the Office of Risk Management and Safety for evaluation and proper waste classification.
- v. "Mixed Waste" (includes both radioactive material and hazardous chemicals) should be treated as radiological waste and handled separately. Notify the Office of Risk Management and Safety.
- vi. Chemical waste that is "unknown" must be labeled as such in order to be picked up for disposal. Apply a waste disposal label to the container and write "unknown" under chemical description. Generators will be charged for the cost of analysis necessary to determine the chemical identity for proper disposal.
- vii. Lab clean-outs require advance notice to the Office of Risk Management and Safety. It is recommended to plan on at least three weeks from the time all paperwork is received to the actual time of removal. Once the Lab Cleanout Form is finalized, a RMS representative will contact you to schedule a hazardous waste disposal pick-up date and time. Additional costs for a pickup that is not regularly scheduled with waste disposal may be charged to the department.

c. Classification and Segregation of Hazardous Chemical Waste

Hazardous chemical waste is categorized into the following hazard classes:

- i. Halogenated solvents
- ii. Non-halogenated solvents
- iii. Acids (inorganic or organic)
- iv. Bases (inorganic or organic)
- v. Heavy metals (silver, cadmium, lead, mercury, etc.)
- vi. Poisons (inorganic or organic)
- vii. Reactives (cyanides, sulfides, water reactive chemicals, peroxides, etc.)

Hazardous chemical wastes must be segregated as follows:

- i. Different classes of hazardous chemical waste must not to be commingled in the same waste container.
- ii. Do not combine inorganic heavy metal compounds and organic waste solvents.
- iii. Do not combine non-hazardous waste (e.g., mixture of water, dilute acetic acid, and sodium bicarbonate) with hazardous chemical waste.
- iv. Dry materials (paper, rags, towels, gloves, or Kim Wipes, etc.) contaminated with flammable or extremely toxic chemicals must be double-bagged in heavy-duty plastic bags and must be treated as hazardous chemical waste.
- v. Sharps are categorized as Biohazardous Waste, NOT hazardous waste. Refer to TSU Bloodborne Pathogens Program and Biohazardous Waste Program.

Contact RMS if you have any questions regarding hazardous waste classification and segregation.

d. Containment and Storage of Hazardous Chemical Wastes

Waste generators must follow these guidelines for hazardous waste containment and storage:

- i. Maintain custody and control of the storage areas and assure the waste is accessible to the Office of Risk Management and Safety.
- ii. Ensure that hazardous chemical wastes are accumulated in safe, transportable containers, properly labeled, and stored to prevent human exposure to or environmental release of the waste materials.
- iii. Waste containers must be compatible with the chemical contents (e.g., do not use metal containers for corrosive waste or plastic containers for organic solvent). Only compatible wastes should be stored together.
- iv. Containers must be in good condition and not leak. All containers must have suitable screw caps or other means of secure closure.
- v. For large waste containers, >10 gallons total volume, must contact the Office of Risk Management and Safety for assistance on selection/placement of appropriate container type and size.

- vi. Never overfill hazardous waste containers. Expansion and excess weight can lead to spills, explosions, and extensive environmental exposure.
 - 1) Containers of solids must not be filled beyond their weight and volume capacity.
 - 2) Jugs and bottles should not be filled above the shoulder of the container.
 - 3) Closed head cans (5 gallons or less) should have at least two inches of headspace between the liquid level and the head of the container.
 - 4) Closed head drums (larger than 5 gallons) should have at least four inches of headspace.
- vii. Containers must be closed/sealed to prevent leakage. All waste containers must be kept closed except when adding or removing material.
- viii. Generators must ensure that Satellite Accumulation Areas (SAA) have the following:
 - 1) Area is secure from "Unauthorized Entry" and emergency contacts are posted.
 - 2) Waste is stored in a designated area with visible SAA signage.
 - 3) These areas must be accessible to the Office of Risk Management and Safety.
 - 4) Hazardous waste is separated from non-waste chemicals.
 - 5) Ensure less than 55 gallons of any one hazard class of waste or less than one quart of acutely hazardous waste is being stored in an SAA.
 - 6) Spill Control Equipment is available.
- e. Labels and Labeling
 - Waste generators must ensure the following labeling guidelines:
 - i. The original chemical label on containers used for waste accumulation must be destroyed or defaced.
 - ii. EPA regulations require that waste containers be labeled to identify the chemical contents and with the words "HAZARDOUS WASTE" when the chemical waste is first added.
 - iii. Hazardous Waste Labels are available from the Office of Risk Management and Safety. These labels have an adhesive back and are placed on the container when the chemical is first added. See Figure 1 for examples of the hazardous waste labels used at Tarleton State University.
 - iv. When waste containers that are full and ready for disposal the label must include the accumulation start date. A hazardous waste label is not complete until the Accumulation Start Date is filled out.
 - v. The Office of Risk Management and Safety will not pickup containers with improper caps, leaks, outside contamination, or improper labeling.

- vi. It is illegal to dispose of hazardous chemicals in any of the following ways:
 - 1) Disposal through the sanitary drain.
 - 2) Intentional evaporation in a fume hood.
 - 3) Disposal in the regular trash.
- vii. EPA regulations set guidelines for disposal of an empty chemical container. Empty containers can be disposed of with other non-hazardous trash ONLY after the following requirements are met:
 - 1) Must NOT contain free liquid or solid residue,
 - 2) Must be triple rinsed,
 - 3) Must have the original label removed or defaced,
 - 4) Must have the lid or cap removed
 - 5) For metal or plastic containers, it must have a hole punched in the bottom

Any empty chemical containers not handled in accordance with these guidelines must be treated as hazardous chemical waste and disposed as such.

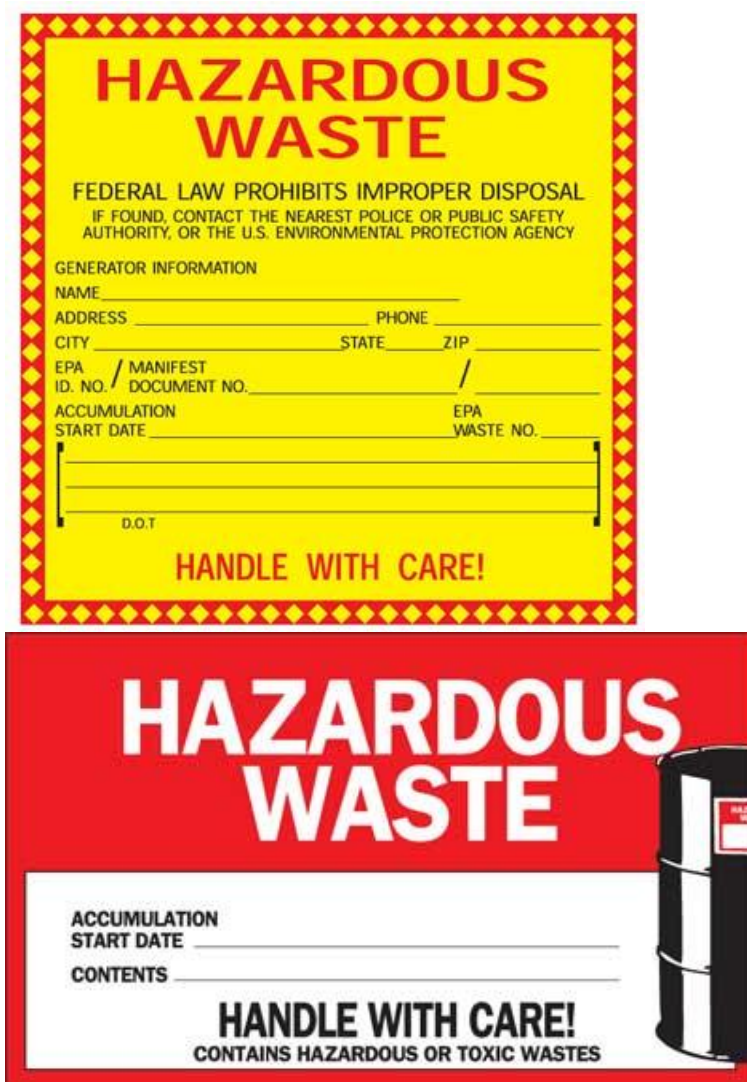


Figure 1: Examples of Hazardous Waste Labels used at TSU

8. SOURCE REDUCTION AND HAZARDOUS WASTE MINIMIZATION

Hazardous waste regulations have evolved from emphasis on reduction to the prevention of environmental pollution. The Pollution Prevention Act of 1990 (Federal Regulation) made the prevention of pollution and reduction of waste generation, a national priority. The key to source reduction is "front-end minimization". Front-end minimization means reducing overall hazardous waste production by reducing the quantities of hazardous chemicals purchased, used and by substituting for less hazardous materials. Research and teaching laboratories and other working groups (Physical Plant, TIAER, Agriculture Dept., RLL, etc.) that generate hazardous waste should review their purchasing practices and systems, chemical usage patterns, and workplace activities to identify potential points in their operations where source reduction and waste minimization can be implemented. Contact the Office of Risk Management and Safety if you have any questions.

9. EMERGENCY PROCEDURES

Tarleton's Hazard Communication Program requires that employees be informed of hazardous materials that they might use or be exposed to at work. In addition, the program includes training on handling spills and other emergencies. Material Safety Data Sheets are a source of this information and should be maintained for all chemicals used or stored within a workplace. Special cleanup supplies should be available and employees should be trained on how to use these supplies. The Tarleton Office of Risk Management and Safety can provide additional information on handling specific chemical spills. Contaminated clothing, rags, absorbent materials, or other waste from cleanup of spills or leaks must be properly disposed. All labs should post emergency numbers to be used and have a response scenario for emergencies. The Control Center will contact RMS in the event of any reported chemical spill.

Emergency telephone numbers of importance are listed below:

Campus Emergency Number	911
University Control Center (24 hours/day)	968-9265
University Police Department	968-9002
Office of Risk Management and Safety	968-9237

REFERENCES

The most recent version of the Texas Administrative Code, Industrial Solid Waste and Municipal Hazardous Waste, 30 TAC 335.

The most recent version of the Texas Administrative Code, Conditionally Exempt Small Quantity Generators, 30 TAC 335.

The most recent version of the Resource Conservation and Recovery Act (RCRA) administered by the Environmental Protection Agency regulation, Hazardous Waste Management, 40 CFR 260 – 265.

The most recent version of the Environmental Protection Agency regulation, Standards for Universal Waste Management, 40 CFR 273.

The National Pollution Prevention Policy, Pollution Prevention Act (PPA), 42 USC 13101.

TSU – Bloodborne Pathogen Program, Biohazardous Waste Program, Hazardous Materials Transportation Program, Hazard Communication Program