



TEXAS TECH UNIVERSITY™

Operating Policy and Procedure

**OP 60.22: Handling and Disposal of Hazardous Waste Material**

**DATE:** December 9, 2021

**PURPOSE:** The purpose of this Operating Policy/Procedure (OP) is to establish uniform procedures for the disposal of waste material consisting of hazardous waste, biohazard wastes, waste oils and lubricants, polychlorinated biphenyl (PCBs) materials, gas cylinders, empty containers, demolition debris, fluorescent lamps, ballasts, metal components, and unknowns.

**REVIEW:** This OP will be reviewed by September 1 of every fourth year by the Assistant Vice President for Environmental Health & Safety and the Associate Vice President for Research & Innovation (Research Integrity) with substantive revisions submitted through administrative channels to the Provost and Senior Vice President by September 15.

**POLICY/PROCEDURE**

**1. References**

[Title 40 Code of Federal Regulations Part 260](#) and [Title 30 Texas Administrative Code Chapter 335](#)

**2. Definitions**

- a. Acutely Hazardous Waste – Hazardous waste listed in [40 CFR 261.33](#).
- b. Hazardous Materials – Any substance or chemical that may present a health or physical hazard to individuals when handled in the normal course of their work, or which can cause harm to people, plants, or animals when released to the environment. Hazardous materials become hazardous waste when they are discarded or no longer needed or used for their intended purpose.
- c. Hazardous Waste – Any discarded hazardous material or substance generated during a process that is deemed unusable and displays the characteristics of ignitability, corrosivity, reactivity, or toxicity, or is listed as a hazardous waste by the United States Environmental Protection Agency (EPA) in [40 CFR 261](#).
- d. Characteristics/Properties of Hazardous Waste

Inherent properties of hazardous waste determine the potential hazards. A waste is considered hazardous if it exhibits one or more of the characteristics listed below:

- (1) Corrosive – A waste is considered corrosive if it is a liquid with a pH of less than 2 or more than 12.5. This waste cannot be disposed of in the sanitary sewer. This information can be found in section 9 of most SDS sheets.

- (2) Ignitable – A waste is considered ignitable if it is a liquid with a flashpoint of less than 140 degrees Fahrenheit (60 degrees Celsius). The flashpoint of a substance is the minimum temperature at which that substance will produce enough vapors to form an ignitable mixture with air. These wastes are also classified as flammables. This waste group will usually include organic solvents such as alcohols and ethers. This information can usually be found in section 9 of most SDS sheets.
- (3) Reactive – A waste is considered reactive if it is unstable, explosive, water reactive, air reactive, or a strong oxidizer. Examples in this group include any of the group 1A metals, organo-metallics, hydrides, and any pyrophoric substance. This information can be found in section 10 of most SDS sheets.
- (4) Toxic – A waste is considered toxic if it leaches one or more constituents in concentrations at or above a hazardous threshold designated by the EPA. Toxic substances are listed if they leach listed toxic materials above a maximum concentration level. This information can be found in section 13 of most SDS sheets.

e. Special Wastes

(1) Used Oil and Lubricants

Oils or lubricants used in university operations by individuals or departments can be disposed of through recycling programs coordinated through Environmental Health & Safety (EH&S). Departments should store these appropriately and coordinate with EH&S for pickup and recycling.

(2) Polychlorinated Biphenyls (PCBs) Materials

Polychlorinated biphenyls (PCBs) are highly regulated materials that were widely manufactured but are now considered carcinogenic. Materials containing PCBs include electrical equipment and light ballasts that must be handled and disposed of according to unique regulations. Departments should store these appropriately and coordinate with EH&S for pickup and disposal.

(3) Asbestos Containing Material

Any material or product that contains more than 1.0% of any kind or combination of asbestos, as determined by the EPA recommended methods as listed in EPA/600/R-93/116, July 1993 “Method for the Determination of Asbestos in Bulk Building Materials.” This means any one material component of a structure or any layer of a material sample must be disposed of as Asbestos Containing Material.

(4) Gas Cylinders

Compressed gases present unique hazards. Depending on the gas, there is a potential for mechanical and chemical hazards. Compressed gases are contained in heavy, highly pressurized metal containers; the large amount of potential energy resulting from compression of the gas makes the cylinder a potential rocket or fragmentation bomb. Inert gases can produce conditions of oxygen depletion that could lead to asphyxiation. All cylinders should have a collar label indicating contents of the cylinder and hazards associated with the gas. Please refer all cylinders for disposal to EH&S for appropriate removal.

(5) Construction Debris

Any construction activity that causes a disturbance of soil and the associated waste due to construction (trash, demolition debris, rinsing agents, etc.) is considered hazardous if not contained and allowed to enter storm drains.

(6) Biohazardous Wastes

Biological/regulated medical waste is generated in diagnosis, treatment, and immunization of humans or animals, in research pertaining thereto, or in production and testing of biologicals. Biological waste may include animal waste, cultures and stocks, human blood, blood products, tissues, cell lines and body fluids, human pathological waste, recombinant DNA, infectious agents, isolation waste, and sharps.

(7) Unknowns

When an unknown substance is found, efforts must be made to identify it. After every effort is exhausted and the substance cannot be identified, it is then labeled as unknown hazardous waste.

f. Universal Wastes

(1) Fluorescent Lamps and Ballasts

Some fluorescent lamp tubes and light ballasts in fluorescent light fixtures may have materials like mercury or polychlorinated biphenyls (PCBs) inside them that would be classified as a hazardous waste. All lamps and ballasts must be segregated and disposed of with direction from EH&S.

(2) Paint and Paint-Related Wastes

Waste paint and commercially available paint-related materials (paint thinner, surface preparation wastes) must be treated as Universal Waste and disposed of according to state requirements.

(3) Batteries

Spent batteries are handled as Universal Waste and should be collected and submitted for pickup as a Universal Waste and disposed of through appropriate third-party vendors.

### 3. Application

This OP applies to wastes generated by all Texas Tech University departments and facilities, including, but not limited to:

- a. Teaching laboratories;
- b. Research laboratories;
- c. Animal surgery rooms;
- d. Farm operations;

- e. Field operations; and
- f. All Texas Tech maintenance and construction, remediation, or remodeling activities.

#### 4. General Provisions

##### a. Accumulation and Disposal of Hazardous Waste

###### (1) Container and Storage Requirements

Proper containers for accumulating and storing hazardous waste must be provided by the person who generates the waste. Usually, the best containers for hazardous waste are the original containers of that material. Other containers, such as 5-gallon carboys, are acceptable if the container and any residue left inside are compatible with the waste. Acids and corrosives should not be stored in metal containers. Contact EH&S for any questions on container compatibility.

All containers must have tight-fitting lids. Unacceptable containers will not be picked up by EH&S personnel, and it will be the responsibility of the generator to transfer the material to another container or to provide a proper lid for the container. All lids must be securely fastened when transfer operation or collection is being done. Prior to accumulating any waste, a proper EH&S label must be placed on the container. Consult section 4.a.(2) for instructions.

Waste that is collected must not be stored near or above drains, sinks, or any area where a spill or leak would contaminate any soils of outside areas. Waste containers should be stored in proper areas that are protected from weather, excessive heat, or areas that pose a fire hazard. No more than 55 gallons of hazardous waste or 1 quart or 1 kilogram of acutely hazardous waste may be stored in any accumulation area outside of EH&S waste management unit at any time. It is the waste generator's responsibility to call EH&S for waste pickups if the container is full.

All chemicals and waste should be segregated according to Appendix AA of the [University Laboratory Safety Manual](#). Incompatible materials should never be mixed. Incompatible materials when mixed together may cause explosions, fires, or generate flammable or toxic gases resulting in serious health injury. If in doubt, do not mix!

###### (2) Labels

All hazardous waste and waste containers must have EH&S waste labels affixed on them. Labels are provided by EH&S, and they come in three sizes to fit the appropriate container. Each section that pertains to the generator must be filled out completely. Do not use empirical formulas to list chemicals under the contents section; chemical names must be spelled out. Both building and room number must be listed. The accumulation date is the very first day accumulation begins. Under the "Hazards" section, check off all hazards and/or list any other hazards associated with the waste. For any questions regarding labeling, contact EH&S.

###### (3) Hazardous Waste Pickups

Any individual or department requiring a hazardous waste pickup should call EH&S for a pickup. Hazardous waste pickups are provided by EH&S personnel weekly. Exemptions can be made on a need and priority basis. Waste generators must complete

the online request, which will be fulfilled on a first-come, first-served basis. This form is available on the EH&S website. For any assistance, contact EH&S.

b. Accumulation and Disposal of Construction Debris

(1) Pre-Construction Waste Characterization of Demolition Debris

The owner will perform waste characterization as required to determine if constituents of paints and other coatings previously used make the debris waste stream from the proposed areas of demolition a hazardous waste. If it is determined that hazardous material is present, the contractor will segregate it during demolition and place it into Department of Transportation (DOT) appropriate containers supplied by the contractor. The containers will be stored in a location and manner to prevent spillage, tampering, or exposure to weather or other potentially detrimental conditions. Upon notification of the completion of the collection process, EH&S will coordinate the pickup and proper disposal of the segregated waste. Non-hazardous material may be disposed of by standard construction debris methods.

(2) Disposal of Fluorescent Lamps and Ballasts

Some fluorescent lamp tubes and light ballasts in fluorescent light fixtures may have materials inside them that would be classed as a hazardous waste. In light of this fact, it is necessary that the university know what disposition will be made on any fluorescent light fixtures or components removed from the university's facilities or properties. Two options are available to the contractor. The options are as follows:

- (a) If the contractor intends to retain light fixtures for reuse, or otherwise accept the fixtures as salvageable property, the contractor must inform the university of this intention, in writing, prior to the start of the project. In this case, there is no hazardous waste issue.
- (b) If the contractor does not wish to retain the light fixtures as salvageable property, they shall remove the fluorescent lamps from the light fixtures so as not to break any fluorescent lamps and place them in containers provided by the university. All light ballasts are to be removed and placed in contractor-provided DOT appropriate storage containers. The lamp containers shall be stored in a location and manner to prevent spillage, tampering, or exposure to weather or other potentially detrimental conditions. Upon notification of the completion of the collection process, the university will pick up the containers and make proper disposition of them. The remainder of the light fixture shall be recycled by the contractor as a painted metal surface.

(3) Disposal of Metal Components

Some metal components may have inherently hazardous characteristics or contain hazardous characteristics. The metals of interest are the eight listed by the [Resource Conservation and Recovery Act \(RCRA\)](#): arsenic, barium, cadmium, chromium, lead, mercury, selenium, and silver. In light of this fact, it is necessary that the university know what disposition will be made on any component composed of or containing these metals that are removed from the university's facilities or properties.

The contractor may retain the metal for reuse, or otherwise accept the metal components as salvageable property. The items may also be sent to a state-permitted metals recycler. Whichever option is chosen, the contractor must inform the university of their intention, in writing, prior to the start of the project. If the recycling option is elected, the types and quantities of materials recycled must be reported to the university by providing copies of the weight tickets from the recycler.

c. Accumulation and Disposal of Other Wastes

(1) Biohazardous Wastes

Biological hazardous wastes are potentially infectious agents presenting a risk of death, injury, or illness to employees. They include human, animal, or plant tissue or fluids that are potentially contaminated with pathogenic organisms. All biohazardous waste must be contained in a biohazard waste plastic bag and labeled with the biohazard symbol. For any questions concerning biohazardous waste, contact EH&S.

(2) Used Oils and Lubricants

Any individual or department that has used oils or lubricants should segregate and store these materials appropriately and coordinate with EH&S to identify a contracted recycling company to pick up and recycle the waste oils and lubricants.

(3) PCB Materials

Materials containing PCBs require special handling and disposal by EH&S. Any materials such as rags or gloves contaminated with PCBs are also considered hazardous waste. Contact EH&S for pickup and disposal.

(4) Gas Cylinders

Gas cylinders used at the university are rented and should be returned to the gas vendor after use. The purchase of lecture bottles or other non-returnable pressurized gas cylinders is discouraged because of the difficulty and cost of disposing of the empty cylinders. Disposal of empty or partially empty cylinders is handled by EH&S.

(5) Empty Containers

Empty containers that have held hazardous materials are considered empty if all waste has been removed and the container has been triple rinsed with the rinsate collected for disposal.