



Hazardous Waste: Introductory Training



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Requirements

Regulations: **40 CFR 262.34** (All hazardous waste generators)
40 CFR 264.16 (Treatment, storage, and disposal facilities (TSDF))
40 CFR 265.16 (Interim TSDFs and large quantity generators)

Applicability

The Resource Conservation and Recovery Act (RCRA) requires training for all workers who handle or come in contact with hazardous waste. The Environmental Protection Agency's (EPA) hazardous waste training rules specifically apply to:

- Large quantity generators (LQG), those generating more than 1 kilogram (kg), or 2.2 pounds (lb), of acutely hazardous waste or more than 1,000 kg, or 2,200 lb, of hazardous waste a month
- Owners and operators of TSDFs.

Note on small quantity generators (SQG): According to the federal regulations, SQGs are not required to have a formal written training program for their employees. However, SQGs are required to ensure that facility personnel are thoroughly familiar with proper waste handling procedures and emergency response procedures relevant to their responsibilities during normal facility operations and emergencies.

There are no formal training requirements for conditionally exempt small quantity generators (CESQG) in the federal regulations. However, some states regulate all generators and some states have more stringent training requirements. Regardless of generator status or whether your facility is governed by state or federal regulations, it is prudent management practice to ensure that all employees who manage or handle chemicals or hazardous wastes receive training commensurate with their job function.

Training Requirements

Employees must successfully complete the training program within six months of the date of their employment or assignment to a facility or to a new position at the facility. Employees must

not work in unsupervised positions until they have completed the required training. Facility personnel must also take part in an annual review of the initial required training.

Hazardous waste training programs must be directed by a person trained in hazardous waste management procedures and must include instruction that teaches facility personnel hazardous waste procedures, including hazardous waste emergency response procedures.

Recordkeeping Requirements

Training records on current personnel must be kept until closure of the facility. Training records on former employees must be kept for at least three years after the employee leaves the company. Personnel training records must accompany personnel transferred within the same company.

Avoid frequently cited recordkeeping violations. Some of the most frequently cited violations by state and federal inspectors at hazardous waste generator facilities involve recordkeeping, or lack thereof, for hazardous waste training. Violations include lack of job descriptions, incomplete documentation on the type and amount of training provided and/or records verifying that training was conducted (e.g., employee sign-in sheets and/or quizzes).

EPA requires the owner or operator of a facility to keep the following documents and records at the facility:

- Job title for each position related to hazardous waste management and name of the employee filling each job
- Written job description for each position related to hazardous waste management
- Written description of the type and amount of both introductory and refresher training given to each person filling a position related to hazardous waste management
- Records documenting such training or job experience

Background for Trainer

Various training requirements often overlap among regulations administered by the EPA, Occupational Safety and Health Administration (OSHA), and the Department of Transportation (DOT). For example, an employer may have workers managing hazardous wastes and also have the same workers preparing hazardous materials for transportation. In this situation, EPA's hazardous waste rules, OSHA's HAZWOPER requirements, and DOT's hazardous materials training standards may apply.

Before conducting hazardous waste training at a facility, a trainer may want to determine:

- What types of hazardous wastes are managed at the site?
- What past experience have the participants had in hazardous waste management?

- The number or type of any incidents concerning hazardous waste management (e.g., audit reports, regulatory inspections, or leaks or spills) at the facility?
- What specific plans or procedures does the facility have for hazardous waste management?

Using the information gained before the class, the trainer will be able to customize the training to the needs of the trainees and facility.



Training Session

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Session Objectives

By the end of this overview training session, employees will be able to:

- Understand how hazardous wastes are identified
- Understand the four characteristics for defining hazardous waste
- Describe the company's emergency procedures and systems
- Identify appropriate personal protective equipment (PPE) for any hazardous waste with which they work
- Explain the required tracking paperwork
- Understand that strict compliance with the company's environmental policies and procedures is mandatory

Suggested Materials

For a successful training session, you will want to have the following items on hand:

- Description of facility hazardous wastes, including photos of waste generation areas
- Examples of signs, labels, and manifests for hazardous wastes
- Hazardous waste disposal guidance documents
- Samples of your company's material safety data sheets (MSDS)
- A copy of the company's emergency response plans
- Sample PPE

Suggested Handouts

- Program objectives or outline
- Lists of hazardous wastes managed at the facility
- Applicable policies, procedures, or guidelines
- Sample labels
- EPA (or other) compatibility charts
- Emergency response contacts
- Handout for this module

Session Outline

Use the following outline as a guide for your training session.

<u>Topics</u>	<u>Time to Spend</u> <u>(Total Time: 1 Hour)</u>
Regulatory Overview	15 Minutes
<ul style="list-style-type: none">• Identification system• Hazardous waste management procedures• Tracking system• Ultimate disposal restriction and permitting system• Permit exemptions	
Generator Categories	15 Minutes
<ul style="list-style-type: none">• Large quantity generator• Small quantity generator• Conditionally exempt small quantity generator	
Generator Requirements	25 Minutes
<ul style="list-style-type: none">• What is a hazardous waste• Emergency procedures and systems• Emergency equipment	
Summary	5 Minutes



Pre-Quiz

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Start by asking the members of the group some or all of the questions listed below. You can test their general knowledge of the topic, which will help guide you on what points to emphasize during the session.

1. What types of hazardous waste do you handle in your position?

2. What are the procedures at your facility for identifying whether a new waste or material from a spill is a hazardous waste?

3. How can you protect yourself and others when working with hazardous wastes? (*Be aware of the proper procedures for handling, storing, disposing, and/or treating the hazardous wastes within your facility.*)

Regulatory Overview

The entire scope of hazardous waste management (generation, transportation, treatment, storage, and disposal) is governed by RCRA. RCRA regulations govern the management of hazardous wastes from “cradle to grave,” which is from their generation to their ultimate disposal.

EPA develops and enforces RCRA-mandated regulations to protect the environment from the potential dangers of waste materials. These federal regulations set the national standard. Individual states can enact additional and/or more stringent regulatory requirements. As a result, differences may exist between federal and individual state regulations. Facilities must meet state requirements when they are more stringent.

The hazardous waste regulations set basic standards for hazardous waste management that must be followed by all facilities that generate, transport, store, and dispose of hazardous wastes. The approach to controlling hazardous waste from generation to disposal has five key elements:

Identification System

The EPA requires an identification number for each generator, transporter, or TSDF. This number is site-specific.

Hazardous Waste Management Procedures

Generators must follow very specific requirements for identifying and managing their hazardous wastes before shipment for disposal, including waste minimization programs. Requirements vary based on the generator category for the facility.

Tracking System

Hazardous waste shipped to a TSDF must be accompanied by a hazardous waste manifest. A signed copy certifying that the waste arrived at its destination must be returned to the generating facility within 45 days for an LQG or 60 days for an SQG.

See the **Hazardous Waste: Manifests** training module for more information.



Training Tip: Explain to the trainees that generators are ultimately responsible for the hazardous waste generated at their site and must track all hazardous waste from the point of its creation to the point of its ultimate disposal. This is called “cradle-to-grave” management. Stress the importance of maintaining proper paperwork.

Ultimate Disposal Restrictions and Permitting System

TSDFs must obtain a permit for these activities. These permits are very detailed and cover construction, operation, and closure of the facility. Certain hazardous wastes are banned from landfills and others must meet pretreatment requirements before disposal.

Permit Exemptions

There are a few very specific exemptions from the permit treatment requirements. The two most common are the “Elementary Neutralization” and “Tank System” exemptions, which allow facilities to treat certain hazardous wastes without a permit. Wastes that meet the exemptions may not count toward the monthly waste generation volume determinations. In addition, employees who knowingly violate the law can be subject to fines and/or imprisonment.

Generator Categories

Depending on the amount of hazardous waste generated per month, a facility will fall into one of three categories of generators:

LQG—A facility that generates 1,000 kg (2,200 lb) or more of waste per month (approximately 4 ³/₄ drums per month, depending on the waste).

SQG—A facility that generates more than 100 kg (220 lb) but less than 1,000 kg (2,200 lb)

of waste per month (approximately ½ to 4 ¾ drums per month).

CESQG—A facility that generates less than 100 kg (220 lb) per month.

Certain wastes, called “acutely” hazardous wastes, have even lower 1 kg (2.2 lb) monthly generation thresholds.

Exceeding the above amounts in any month puts the facility into a higher category and subjects it to more stringent regulations. Planning and scheduling of waste generation could keep a facility from entering a higher category.

It is the generator’s responsibility to track the quantity of waste generated each month and to be sure all generator requirements for its category are met. In some instances, wastes generated by a contractor can be included in the generator’s monthly total.



Training Tip: Discuss with trainees where hazardous wastes are generated at the facility, what category of generator the facility is, and site-applicable policies and procedures. Materials such as facility waste or wastestream list, MSDSs, descriptions or pictures of waste material to be discarded (including out-of-date raw materials that are readily identifiable as a characteristic waste, aerosol containers, and nonhazardous solid wastes, etc.) may be used to give trainees a better understanding of the wastes generated on-site.

Generator Requirements

The level of detail varies on the basis of the generator category, but all generators are required to:

- Identify which wastes are hazardous
- Obtain an EPA Identification Number
- Use approved containers for accumulation
- Label all containers
- Date all full containers
- Make sure that hazardous waste is accumulated properly
- Use the hazardous waste manifest for shipping
- Train employees that handle hazardous waste
- Be prepared for emergencies
- Keep records

- Dispose of waste properly
- Report releases

What Is a Hazardous Waste?

A hazardous waste is by definition a waste that could be a threat to the health and safety of both humans and the environment if it is not handled carefully and properly.

RCRA has specific definitions for the terms “solid” and “hazardous” waste. A solid waste is any discarded material, including abandoned and some recycled wastes. Solid wastes can be solids, liquids, semisolids, or containers of gaseous materials. Hazardous waste is a special subclass of solid waste. Check the exemption lists at **40 CFR 261.4(a)**(solid waste) and **261.4(b)**(hazardous waste) to see if materials are specifically exempted from being considered waste.

To determine whether the waste generated is hazardous, first determine if the waste is excluded from regulation in **40 CFR 261.4**. If the waste is not excluded, determine if the waste is listed as a hazardous waste in **Subpart D of 40 CFR 261**. (States may have additional listed wastes.)

Even though a solid waste is not listed by EPA or the state, it can still be classified as a hazardous waste if it exhibits one or more of EPA’s defined hazardous waste characteristics based on either analytical methods or by applying knowledge of hazardous characteristics in light of the materials or process used. The following are explanations of the four types of characteristic hazardous waste:

Ignitable Waste	A substance is ignitable if it catches fire or explodes easily if exposed to heat or sparks (flash point below 140°F). Waste paint thinner or degreasing solvents are examples.
Corrosive Waste	A substance that is corrosive can damage your eyes, skin, or other body tissue on contact (pH <2 or >12.5). An example is a waste acidic cleaner used in metal parts cleaning.
Reactive Waste	A substance that is unstable and can explode, catch fire, or give off poisonous vapors on contact with air, water, or other chemicals. An example is aluminum powder, which can react explosively with many organic and inorganic chemicals.
Toxic Waste	The toxicity characteristic is designated to identify wastes that are likely to leach hazardous constituents into groundwater under improper management conditions. EPA has adopted a standardized method, Toxicity Characteristic Leaching Procedure (TCLP), for testing wastes to see if they exhibit the toxicity characteristic. Examples of toxic wastes are heavy metals like mercury, lead-based paints, nickel-cadmium batteries, and chlorinated solvents.

If a listed or characteristic hazardous waste becomes mixed with a nonhazardous solid waste, the entire mixture becomes a hazardous waste. Common ways that wastes become mixed include:

- Leaving containers open so rainwater can enter the container
- Adding trash to hazardous waste containers
- Mixing used oil and solvents

Once a waste has been classified as hazardous, the containers must be labeled, managed, and accumulated on-site for a specific time period.



Training Tip: Discuss with trainees the procedures used at the facility for identifying hazardous wastes. Explain that the company has drawn up serious policies and procedures to ensure employees' safety and the safety of others and the environment at large. Hazardous waste safety is too important for guesswork or taking chances; if a person is not sure what to do, he or she should ask a supervisor. Using a facility waste list and MSDSs, ask trainees to work as a team to determine if wastes are hazardous.

Emergency Procedures and Systems

Employees that work with or come in contact with hazardous waste need to understand how to respond to the release of a hazardous waste. Review the company's emergency response plans. Stress to the trainees that only trained, authorized individuals should attempt to handle or clean up hazardous waste.

Review with the trainees the proper contact people within the company who must be called should an incident occur. The employees need to know who is in charge of accidents and/or spills. They need to know whom to call and where they can find the appropriate contact numbers.



Training Tip: It is important to stress with the employees the potential dangers of a hazardous waste spill incident. Trainees need to know that the company's hazardous waste policies are serious and that they must follow them.

Emergency Equipment

Personnel participating in the cleanup of spills and/or accidents involving hazardous waste need to know how to select and use the proper PPE. Review the available PPE at your facility, and explain to employees that the equipment will be reviewed in-depth in a later training session.

See the **Personal Protective Equipment: For Emergency Response** module for more information.

A wide array of spill control equipment is used to contain spills. Briefly review the spill control equipment kept on-site, and explain to employees that the equipment will be reviewed in-depth in a later Emergency Response training session.



Training Tip: Take participants to an actual hazardous waste accumulation area (or show photos), and have them describe how they would respond to a release, including whom to call and the location of spill response equipment, including PPE.

Summary

At the conclusion of this training session, trainees should be able to:

- Identify hazardous wastes at the site and know how to find out if they are listed or characteristic wastes
- Understand the four characteristics for defining hazardous waste
- Describe the company's emergency procedures and systems
- Identify appropriate PPE for any hazardous waste with which they work
- Explain the required tracking paperwork
- Understand that strict compliance with the company's environmental policies and procedures is mandatory



Post-Quiz

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1. T/F An abnormally high hazardous waste volume during only one month can trigger a higher generator category.
2. In an emergency, you must know:
 - ___ a. How to handle a hazardous waste spill.
 - ___ b. Whom to call to report an emergency.
 - ___ c. How to contain a chemical fire.

- d. Where the company keeps its empty hazardous waste containers.
- 3. T/F A facility is never responsible for the hazardous waste generated by a contractor.
- 4. The term “cradle to grave” means that:
 - a. Once materials are disposed of the generator’s responsibility is ended.
 - b. Liability for waste is limited.
 - c. The generator is always responsible for the waste.
 - d. The generator must handle hazardous waste with care.
- 5. T/F A corrosive waste catches fire when exposed to heat.
- 6. T/F A facility that generates hazardous waste must have an EPA Identification Number.
- 7. PPE stands for:
 - a. Personal participation in emergency planning.
 - b. Proper procedures in an emergency.
 - c. Personal protective equipment.
 - d. Personal plan of escape.
- 8. Hazardous waste can:
 - a. Be put in any container as long as it is properly labeled.
 - b. Only be put in empty raw material containers.
 - c. Only be put in approved, properly labeled containers.
 - d. All of the above.
- 9. T/F An ignitable waste catches fire or explodes when exposed to heat or a spark.
- 10. If you are not trained to handle an emergency situation, you should:
 - a. Help anyway.
 - b. Leave the area and notify the responsible individual.
 - c. Wait for instructions.
 - d. Any of the above.

Post-Quiz Answers

- 1. (T)
- 2. (b—Whom to call to report an emergency.)
- 3. (F)

4. (c—The generator is always responsible for the waste.)
5. (F)
6. (T)
7. (c—Personal protective equipment.)
8. (c—Only be put in approved, properly labeled containers.)
9. (T)
10. (b—Leave the area and notify the responsible individual.)



Checklist

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- Are employees aware of what hazardous wastes are present on-site?
- Are employees familiar with the procedures for determining if a waste is hazardous?
- Do employees understand the four characteristics of hazardous waste:
 - Toxic?
 - Ignitable?
 - Corrosive?
 - Reactive?
- Do employees know the procedures used at the facility for handling and disposing of hazardous waste?
- Can employees read the hazardous waste labels and MSDSs to understand the particular hazards of the wastes they handle?
- Do employees know where to find the appropriate contact numbers in the event of an emergency?
- Do employees understand the importance of maintaining proper paperwork when dealing with hazardous waste?
- Do employees know the locations of emergency response-related equipment available at the facility?