



Facility Safety

Manufacturers Guide: How to Handle Industrial Waste Safely

Matt Morgan | Aug 22, 2024

In many manufacturing facilities, the goal is making products quickly and efficiently and getting them out the door. An important part of the process, however, with implications on the business is what's left behind: waste.

Handling and disposing of waste are critical components of manufacturing that go beyond simply keeping the facility clean. Waste management is about maintaining compliance, operating efficiently, protecting workers and contributing to environmental sustainability.

Here's an overview of the regulations you need to know, the types of waste to focus on, and tips for managing waste.

Overview of Regulatory Requirements

Manufacturing managers need to know the regulations that govern waste handling, especially when they have limited resources and specialized compliance personnel to oversee the process.

In 1994, the Environmental Protection Agency (EPA) established the universal waste program under the Resource Conservation and Recovery Act (RCRA). It sought to "greatly facilitate the environmentally sound collection and increase the proper recycling or treatment of hazardous waste nickel cadmium and other batteries, certain hazardous waste pesticides, and mercury-containing thermostats."

In general, universal waste handlers are responsible for notifying the EPA about their waste activities, labeling containers, storing materials on-site, training personnel, and tracking and transporting waste.

In the years since, the federal program has expanded to include other materials, and states can add materials that qualify as universal waste to their programs.

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Manufacturers that produce these types of wastes are considered handlers and are subject to the EPA's waste handling regulations, which differ depending on how much hazardous waste is generated per month.

- Very small quantity generators produce 100 kilograms or less.
- Small quantity generators produce more than 100 kilograms but less than 1,000 kilograms.
- Large quantity generators produce 1,000 kilograms or more.

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The Occupational Safety and Health Administration also has several regulations that may apply to universal waste handling:

- The general duty clause (**29 USC 654**) is an overarching requirement that employers provide a safe working environment for employees.
- The hazard communication standard (**29 CFR 1910.1200**) requires that employers provide workers with information about the identity of hazardous chemicals, such as labels, safety data sheets and training.
- The personal protective equipment standard (**29 CFR 1910.132**) says that employers must provide PPE to protect against contact with hazards including chemical hazards and other irritants.
- Toxic and hazardous substances standards, such as for asbestos (**29 CFR 1910.1001**) and lead (**29 CFR 1910.1025**), are designed to limit a worker's exposure to hazardous elements in waste.
- The recordkeeping standard (**29 CFR 1904**) should be followed for any work-related injuries due to universal waste.

Common Types of Manufacturing Waste

The EPA's universal waste program applies to five types of waste. Their management is described in detail in **40 CFR 273.13**.

Batteries: These devices can contain corrosive materials such as cadmium, nickel, lithium and silver ion. Used batteries become waste when they are discarded, and unused batteries become waste when the handler decides to discard them. Spent lead-acid batteries are managed under separate regulations.

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Pesticides: These products are considered universal waste only when they are recalled, suspended or canceled stock.

Mercury-containing equipment: Anything that contains mercury, such as thermostats, are covered by this regulation. Used mercury-containing equipment becomes waste when it is discarded, and unused equipment becomes waste when the handler decides to discard it. Batteries and lamps each have their own regulations.

Lamps: These become universal waste only when they are discarded and contain hazardous waste. The EPA's definition of universal waste lamps includes "fluorescent, high-intensity discharge, neon, mercury vapor, high-pressure sodium and metal-halide."

Aerosol cans: These "frequently contain flammable propellants such as propane or butane, which can cause the aerosol can to demonstrate the hazardous characteristic for ignitability," the EPA says. **Empty cans** are not considered universal waste.

Your state may have more universal wastes than these in its program. Refer to the *EPA's list of state regulations*.

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Beyond the categories covered by the federal universal waste program, metalworking and manufacturing companies generate waste such as metal shavings and used *coolant and cutting fluids* that pose unique disposal challenges.

Tips for Waste Handling and Disposal

A good waste handling program requires a well-rounded approach that includes training people, providing equipment and working with partners.

For training, employees should understand the nature of the waste they handle and how to safely dispose of it. Training sessions should cover:

- **Identification of hazardous waste:** Employees need to recognize the different types of hazardous waste at your facility and the importance of proper classification.
- **Safe handling procedures:** Make sure that employees know how to safely handle waste, including the use of personal protective equipment (PPE), what to do in case of exposure and *how to dispose of or recycle PPE*.
- **Disposal protocols:** Provide clear guidelines on the use of *disposal containers*, labeling and documentation to comply with regulations.

A key piece of equipment for universal waste handling is the container. Proper containment helps to prevent leaks, spills and contamination, and requirements vary based on the type of waste. Generally, containers for universal waste must be closed and structurally sound, be made of a material that won't react to the waste inside, and show no damage or leakage. The most common container for hazardous waste is a 55-gallon drum, according to the EPA.

Containers must be labeled with the length of time the universal waste has been inside. Waste can't be accumulated for more than a year, although there are some exceptions.

As for waste disposal, your company may benefit from working with a vendor that has expertise in handling universal waste. A vendor may also be able to assist with compliance and provide other specialized services, such as container selection and waste sorting and storing.

Manufacturers that choose to manage universal waste on their own must be prepared to assume the full scope of responsibilities, including meeting all regulatory requirements and ensuring the safety of employees and the environment.

Doing so may offer more control of the process and open up opportunities; for example, hazardous wastes can be neutralized on-site for safer disposal, metal shavings can be collected and melted down to be repurposed, or solvents can be distilled and used again. In some cases, such as transporting waste directly to a disposal facility, additional regulations will apply.

Managing Waste: Finding Success

Navigating the complexities of waste management can be daunting, but it's an essential part of running a successful manufacturing operation. By taking proactive steps to comply with regulations, investing in employee training and selecting appropriate equipment, your facility can avoid costly fines and ensure a safer work environment.

Ultimately, effective waste management is not just about meeting legal obligations; it's about safeguarding your business, your employees and the environment for the long term.

What tips do you have for handling and disposing of wastes at your facility? Let us know in the comments below.

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