One way your company helps protect the environment is by following the rules and guidelines outlined in the Resource Conservation Recovery Act, also known as RCRA. RCRA is a federal law enacted in 1976 to address the treatment, storage and disposal of hazardous waste. This program provides an overview of the responsibilities of hazardous waste generators and their employees as required by RCRA.

Topics include characteristic hazardous wastes, definitions of small and large quantity generators, satellite accumulation areas, safe handling of storage containers, container storage area requirements, the Uniform Hazardous Waste Manifest and waste minimization procedures.

WHAT IS RCRA?
- Our environment—it’s a source of natural resources, beauty, and recreation. The quality of our environment affects our health, our quality of life, and that of our family and community.
- One way our company helps protect the environment is by following the rules and guidelines outlined in the Resource Conservation Recovery Act, also known as RCRA. RCRA is a federal law enacted in 1976 to address the treatment, storage and disposal of hazardous waste.
- One of the first and most important tasks which must be performed when complying with the Resource Conservation Recovery Act is to determine which substances on site are regulated hazardous wastes.

LISTS OF HAZARDOUS WASTES
The EPA lists specific substances in the RCRA regulation, which are by definition hazardous waste. Known as the F-List, K-List, P-List, and U-List, these lists of hazardous wastes can be found in 40 CFR 261.31 – 261.33(f).
- If the material in question is on one of these lists, it is often called a “listed waste.”
- Listed wastes are assigned a EPA hazardous waste number, often called a waste code. The waste code is used to identify hazardous waste on container labels, manifests and other documents.
- The wastes listed in the EPA’s P-List are considered acutely hazardous. Acutely hazardous waste is waste that presents a substantial hazard and has been shown to be fatal to humans in low doses.
- It’s important to understand that any substance derived from or mixed with any amount of these listed wastes is by definition a regulated hazardous waste.
- This is why you should never mix hazardous waste with non-hazardous waste. Mixing a listed hazardous waste with a non-hazardous waste only makes more hazardous waste; you can not dilute a listed hazardous waste and make it non-hazardous.

CHARACTERISTICS HAZARDOUS WASTES
- Another method to determine if a substance is a hazardous waste is to determine if the material in question exhibits one of the following characteristics of hazardous waste.
- If the material is ignitable, it is considered a hazardous waste. Ignitable materials have a flashpoint less than 140 degrees Fahrenheit.
- If the material is corrosive, it is considered a hazardous waste. Corrosives have a pH less than or equal to 2, or greater than or equal to 12.5.
- If the material is reactive, it is considered a hazardous waste. Reactive materials are unstable and can undergo rapid or violent chemical reactions with water or other materials.
- Finally, if the material is toxic, it is considered a hazardous waste. RCRA considers a material to be toxic if the results of a Toxic Characteristic Leaching Procedure or TCLP indicates that the material would leach into groundwater at levels exceeding its defined regulatory threshold.
- When a material, or mixture exhibits one or more of these characteristics it is said to be a “characteristic hazardous waste.” When you hear the term characteristic hazardous waste, it simply means the material is ignitable, corrosive, reactive, or toxic.
- Characteristic hazardous wastes are assigned a code. Ignitable wastes are coded D001; corrosive wastes are coded D002, reactive wastes are coded D003 and toxic wastes are coded D004 through D043.
- Many wastes are both listed and characteristic wastes, requiring multiple waste codes to be used on container labels and manifests.

EMPLOYEE TRAINING
- Employees who are involved in the use, handling or storage of hazardous waste will receive hazardous waste training related to their specific job.
- This training must provide employees with the information needed to ensure compliance with the RCRA regulations.
- Employees should also receive appropriate safety training, such as proper use of required protective equipment, appropriate bonding and grounding procedures, safe material handling practices to avoid spills and any potential health effects of exposure.
Finally, employees working with hazardous waste must also be trained in the key elements of the company’s contingency plan and emergency response procedures.

Most critically, employees must understand how they should respond to an emergency.

Affected employees must know who is in charge in the event of an emergency and how to sound an alarm or use the communications equipment to report the emergency.

If the contingency plan calls for onsite employees to use emergency systems or equipment, they must be trained how to inspect, use and repair this equipment.

**Definitions of Small & Large Quantity Generators**

Once you’ve determined that you are in fact handling or storing a hazardous waste as regulated by the Resource Conservation Recovery Act, it’s important that you understand whether your facility is considered a Small Quantity Generator or a Large Quantity Generator of hazardous waste.

A Small Quantity Generator is one that generates between 100 kilograms and 1,000 kilograms of hazardous waste per month.

A Large Quantity Generator may accumulate waste on site for 180 days; however, if the shipping distance for the hazardous waste to reach the disposal facility is greater than 200 miles, a Small Quantity Generator may accumulate waste on site for 270 days.

A Small Quantity Generator, the total amount of hazardous waste accumulated on site must never exceed 6,000 kilograms.

A Large Quantity Generator is one that generates 1,000 kilograms or more of hazardous waste per month or more than one kilogram of acutely hazardous waste in any month. A Large Quantity Generator may only accumulate waste on site for 90 days.

There is no limit to the amount of hazardous waste which a Large Quantity Generator may store on site.

There is another less-restrictive category of waste generator. A Conditionally Exempt Small Quantity Generator is one which generates less than 100 kilograms of hazardous waste per month. A Conditionally Exempt Small Quantity Generator may not accumulate more than 1,000 kilograms of hazardous waste at any time.

**Satellite Accumulation Areas**

Hazardous waste is often accumulated near the point of generation by workers in the immediate area. The RCRA regulation refers to this type of hazardous waste accumulation area as a satellite accumulation area.

A satellite accumulation area is a convenient way to control and store hazardous waste before it is moved to the facility’s central storage area.

RCRA includes some specific regulations for these types of satellite areas: The satellite area must be near the area of generation and under the control of the employees who generate the waste.

Keep in mind that a satellite accumulation area is not a storage area for full containers, but rather a storage area for containers that are being filled as part of the ongoing generation process.

There is no time limit on how long it takes to fill a container; however, there can only be one full container, limited to 55 gallons, in a satellite storage area at any one time.

If the waste being generated is considered to be acutely hazardous waste, the accumulation limit is one quart.

Once a container in a satellite accumulation area is filled to capacity or the accumulation limit is reached; the accumulation start date must be filled in on the container label. Failing to fill in the accumulation start date is a commonly-cited RCRA violation.

Filled containers must be removed from the satellite storage area within 72 hours of being full and taken to the facility’s hazardous waste central storage area, where it will remain until transported off site for proper treatment and disposal.

**Safe Handling of Storage Containers**

All containers used to store hazardous waste must be clearly labeled with the words, “Hazardous Waste.” Labels must be legible and any old or damaged labels must be removed.

Containers used to store hazardous waste must be in good condition. Containers with dents, rust, holes or other structural damage are not acceptable for use to store hazardous waste.

Unless a transfer is occurring, drums and other containers must be kept closed at all times. The RCRA definition of closed means “leak-proof and vapor-tight.”

Failing to keep containers properly closed is a very common RCRA violation. Keep containers properly closed by making sure drum rings are closed properly and all caps are in place and tight.

If funnels are used during a transfer, they cannot be left in place unless they are designed to be leak-proof and vapor-tight.

All hazardous waste must be placed inside the storage containers. If waste is spilled onto the top or sides of a container, it must be cleaned up immediately.

Containers with hazardous waste residue on the outside are not acceptable and will not only generate a RCRA violation and fine, but will also be rejected by the waste disposal company.

It is also extremely important that hazardous waste is compatible with the container into which it is being placed.

For example, some corrosive liquids may be incompatible with a steel drum, leading to a leak. A composite drum or plastic drum must be used instead.

**Central Storage Area Requirements**

In addition, some wastes are incompatible with other types of waste. Incompatible wastes must be kept separated by a wall, separation device or adequate distance while in an accumulation storage area.

If a storage area contains ignitable or reactive wastes, “No Smoking” signs must be posted and visible.

A hazardous waste container storage area must have adequate aisle space to allow for the unobstructed movement of personnel and emergency equipment.

If any stored waste is ignitable or reactive, RCRA regulations require it be stored at least 50 feet from any property line.

A hazardous waste container accumulation areas must be inspected weekly, paying close attention to any signs of leaking or damaged containers.

Should a leaking container be discovered its contents must either be transferred into another container or the entire container may be “over-packed” into a larger container.

If spill must be properly contained and cleaned up promptly by qualified personnel.

Emergency and spill control equipment must be available in container accumulation areas. This equipment must also be inspected monthly.

Remember that containers in a central accumulation area must not be stored longer than 90 days for a large quantity generator or 180 days for most small quantity generators.

Inspections of storage areas should be recorded in a written log and records kept for a minimum of three years.

**Treatment, Storage & Disposal Facilities (TDSF’s)**

All hazardous waste generators must eventually transport their waste to an off-site processor. These off-site processors of hazardous waste are typically referred to as Treatment, Storage and Disposal Facilities or TSDF’s.
Properly managing hazardous waste is an important responsibility; one we should all take seriously. Protecting jobs, benefits the company and protects our environment and community in the long run. Paying close attention to hazardous waste regulations and staying in compliance not only avoids fines and penalties in the short run, but more importantly it protects jobs, benefits the company and protects our environment and community in the long run. Properly managing hazardous waste is an important responsibility; one we should all take seriously.

CONCLUSION

Small Quantity Generators must certify their good faith efforts of waste minimization when signing their Uniform Hazardous Waste Manifests. Small Quantity Generators, while not required to have a written waste minimization program, must make a good faith effort to reduce the volume and toxicity of the hazardous wastes they generate. Additionally, all Large Quantity Hazardous Waste Manifests, Large Quantity Generators must certify the existence of a waste minimization program.

WASTE MINIMIZATION PROCEDURES

The Resource Conservation Recovery Act creates a cradle-to-grave management system for hazardous waste. The regulations are not only designed to ensure the proper treatment, storage, and disposal of waste, but also to protect the environment for future generations by reducing the amount of hazardous waste generated.

Minimizing the generation of hazardous waste is an essential part of protecting our environment. There are three general methods encouraged by the EPA for waste minimization: source reduction, recycling, and treatment. Changing practices and processes to reduce or eliminate the generation of hazardous wastes and materials is referred to as source reduction. Some source reduction methods include chemical substitution, process modification, and improved operating procedures. Employees are encouraged to contribute to source reduction of hazardous waste by sharing their ideas and suggestions for how to reduce the hazardous waste generated by the process in which they are involved. Recycling takes place when a waste material is used for another purpose, treated and reused in the same process, or reclaimed for another process. Recycling is another important method used to reduce the amount of hazardous waste generated.

Finally, treating hazardous wastes to render them non-hazardous or less hazardous is another method of waste minimization. Each of these types of waste minimization helps to protect the environment and makes good business sense by avoiding disposal costs and creating safer working conditions.

All hazardous waste generators should practice waste minimization; however, the Resource Conservation Recovery Act specifically requires Large Quantity Generators of hazardous waste to have a Waste Minimization Program in place to reduce the volume and toxicity of waste generated. Additionally, all Large Quantity Hazardous Waste Generators must report biennially on waste minimization activities. When signing their Uniform Hazardous Waste Manifests, Large Quantity Generators must certify the existence of a waste minimization program.

Small Quantity Generators, while not required to have a written waste minimization program, must make a good faith effort to reduce the volume and toxicity of the hazardous wastes they generate. Small Quantity Generators must certify their good faith efforts of waste minimization when signing their Uniform Hazardous Waste Manifests.

CONCLUSION

Keep in mind that responsible personnel must become familiar with all applicable parts of the entire RCRA regulation. Paying close attention to hazardous waste regulations and staying in compliance not only avoids fines and penalties in the short run, but more importantly it protects jobs, benefits the company and protects our environment and community in the long run.