Hazardous Waste Basics for the First Time Generator

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Introduction

The laws and regulatory climate surrounding hazardous waste and materials are tough to make sense of, and they're immeasurably more difficult to navigate if you're doing it for the first time. If you are newly generating hazardous waste or encountering hazardous waste issues for the first time, this guide is for you. We hope to help you expand upon the knowledge you've built so far, and equip you with the information you need to move forward with your business in a fully compliant (and totally safe) manner.

Please note that this guide is meant to assist you to understand regulations and is not intended to replace or supersede any written rules or regulations of the federal, state, or local authorities.

Let's get started.

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State and Federal Regulations Primer

The governing body of the Environmental Protection Agency (EPA) and its comprehensive Resource Conservation and Recovery Act (RCRA) legislation regulates all hazardous materials, from the time of its generation to its eventual disposal (or “cradle to grave”). All generators and facilities that manage hazardous waste must be acquainted with these regulations in order to ensure compliance with federal law.

This is especially true for first time generators, who may not fully know these rules, and therefore not know when they could possibly be breaking them.

The EPA provides a wealth of information regarding the proper requirements for treating, storing, disposing, and handling hazardous waste. But it doesn’t always make for the most easily digestible of reading material.

To further complicate matters, some states have their own regulatory requirements, appending further legal guidelines on how waste is to be governed in addition to federal laws. What is most important, however, is that these regulations are followed to ensure safety, legality, sustainability, and maximum profitability.

If you are a first time generator of hazardous waste, then some or all of this information may be new to you. But that’s no problem, as we will provide you with all of the resources you will need to help guide you on your way. But even if you’re an older, more seasoned waste company, it doesn’t hurt to brush up on some of the rules to make sure your operations are up-to-date.

Federal Regulations

Let’s start first with the federal guidelines. These are the basic rules that will matter regardless of which state your company is incorporated in. For example, North Dakota has no additional regulations on hazardous materials treatment, but still sticks to the federal RCRA minimum. While, on the other hand, some states that also mirror the federal system may have more supplementary rules.

Cradle-to-Grave

As mentioned, “cradle-to-grave” responsibility means that a business is responsible for its waste from generation to ultimate disposal. Nothing will relinquish you of this responsibility—there’s not an expiration date or time limit on it, and hiring someone else to transport and dispose of your waste does not transfer responsibility.

This is why it’s so important to do things “by the book.” If something goes awry with your hazardous waste at any point in its lifecycle, you can be held responsible. You might also be obligated to pay for any or all costs associated with a cleanup or response. You should always keep this “cradle-to-grave” responsibility top of mind.

Hazardous Waste Substances and Characteristics

You will need to be able to identify what is hazardous waste and what is not. The full list of current hazardous substances can be found on the “Listed Wastes” section of the EPA’s website.

Also, some wastes that may not be explicitly listed by the EPA might also be deemed hazardous if they have one of the following characteristics, including,

- Ignitability,
- Corrosivity,
- Reactivity, and
- Toxicity.

For more details on the exact meaning of each classification, jump to the chapter titled, “Understanding the Four Characteristics of Hazardous Waste.”

Types of Generators

Now that you know what where your waste falls under RCRA’s waste class system, you can begin to calculate what type of generator you are based on the three levels provided by the EPA.

Your level will vary upon the monthly amount of waste your company produces overall, such as:

- A **Conditionally Exempt Small Quantity Generator** (CESQG) may only generate up to 220 pounds (100 kilograms) of waste per month.
- A **Small Quantity Generator** (SQG) produces up to 2,200 pounds (1,000 kilograms), but no less than 220 pounds (100 kilograms), of hazardous waste per month.
- A **Large Quantity Generator** (LQG) generates more than 2,200 pounds (1,000 kilograms) of waste per month.

You can read more in-depth coverage of the generator topic in the chapter, “CESQGs vs. SQGs vs. LQGs: What’s the Difference?”

Land Disposal Restrictions

The Land Disposal Restriction (LDR) program was created to ensure that land-disposed hazardous waste (meaning waste disposed of by landfill, injection well, or other land-based unit) does not threaten human or environmental health. The LDR program is comprised of three major components:

- **The Disposal Prohibition**, which mandates that hazardous waste must meet treatment standards (specific to the waste material) before it can be disposed of by land;
- **The Dilution Prohibition**, which mandates that hazardous waste must be properly treated and not merely diluted by adding large amounts of water, sand, or non-hazardous waste; and
- **The Storage Prohibition**, which mandates that hazardous waste must eventually be treated and cannot be stored continually.

These restrictions apply to hazardous waste from the point of generation forward.

EPA ID Numbers

Now that you have these crucial pieces of information out of the way, you will need to get an EPA ID number.

If you are at least a SQG (meaning your company produces up to, but no more than, 220 pounds of hazardous waste per month) or a Treatment, Storage, and Disposal Facility (TSDF), simply download and fill out EPA form 8700-12 and send it off to your local EPA regional office. They will send you

back your unique ID number, which will legally enable you to store, transport, dispose, treat, and handle your hazardous materials.

Your number will most likely stay the same (unless your waste clean up is a one-off operation) and will be site-specific, so you won't have to worry about updating it unless you move facilities. Again, you can learn more about this topic in the chapter, "Making Sense of EPA ID Numbers."

EPA Manifests

Once you have an EPA ID number, you can now transport your waste to an off-site facility (or receive waste from an on-site generator). The proper procedure for keeping track of the passage of your waste from hand to hand is the EPA's Uniform Hazardous Waste Manifest system.

The Uniform Manifest is a series of multiple-copy forms that each party involved in the transportation, storage, disposal, or treatment of hazardous material must sign off on. From the company that generates the waste to its final disposal facility, each party must have their own signed copy of the manifest for their records. These records must be kept in a safe place, as they will be needed later on.

The National Biennial Report

The National Biennial Report is the sum total of all the copies of your manifests, plus any data you've accumulated on the "nature, quantities, and disposition" of the hazardous waste that has been generated from the prior two years. The report must be submitted at least every even-numbered year, in accordance with federal law (although some states may require annual reporting).

The next report will be due March 1st, 2016 and must be filled out on EPA Form 8700-13A and turned in to your EPA regional office.

Large Quantity Generators (meaning your company generated more than 2,200 pounds of hazardous waste or 2.2 pounds of acute hazardous waste at least once within in a two-year period) and all Treatment, Storage and, Disposal facilities (regardless of generator status) must submit the report.

Your National Biennial Report should include the following information:

- EPA ID number,
- All transporters, storage facilities, disposal companies, or recyclers that have handled your waste, and
- Total volume and descriptions of waste.

State Regulations

States may have their own specific waste regulations as long as they are equivalent to or go above the layer of protection provided by federal regulations. According to the EPA, they may adopt general provisions, and also—provisions for batteries, lamps, mercury, and pesticides.

States may also require annual or biennial reporting of hazardous waste activities for all levels of generators and TSDFs. Some states may also choose to consider an item hazardous, which may not otherwise be listed federally as hazardous waste—such as aerosol cans in California and Colorado.

A comprehensive list of which states require different regulatory requirements, and what those requirements are, can be found here.

Understanding the Four Characteristics of Hazardous Waste

When categorizing hazardous waste, the EPA breaks it down by four characteristics:

- Ignitability, or something flammable
- Corrosivity, or something that can rust or decompose
- Reactivity, or something explosive
- Toxicity, or something poisonous

These high level categories each have their own characteristics that further help you as a generator define with what your are dealing.

Ignitability

There are three types of ignitable forms:

- Liquids with a flash point–the lowest temperature at which fumes above waste ignite–of 60 degrees Celsius or 140 degrees Fahrenheit (examples include paint thinner, gasoline, and acetone),
- Solids that spontaneously combust, and
- Compressed flammable gases.

Corrosivity

Corrosive substances, such as hydrochloric acid, nitric acid, and sulfuric acid, have the ability eat through containers, causing the leakage of harmful materials. A corrosive is anything liquid with a pH of less than or equal to 2 or greater than or equal to 12.5, or has the ability to corrode steel. Everyday examples of corrosives include battery acid and rust removers.

Reactivity

Given their instability, reactive wastes can be very dangerous. The EPA recognizes that there are too many conditions and situations to identify all types of reactive materials. However, they use the following as guidelines to assist generators:

- Unstable, and routinely experiences violent change without detonating;
- Potential for explosive mixture or violent reaction when combined with water;
- Toxic gases are released when mixed with water.

Toxicity

Poisonous materials pose a threat to our groundwater, which can have long term effects to human health and the environment. This is different from the first three characteristic groups, which the EPA views as containing immediate and firsthand dangers. There are 60 contaminants on the toxicity characteristics list. These contaminants are identified solely through a test method called Toxicity Characteristic Leaching Procedure or TCLP.

CESQG vs. SQG vs. LQG: What's the Difference?

The EPA has three distinct categories for generators of hazardous waste, each category being differentiated by the amount of waste a generator produces or manages.

According to the EPA, the three categories which separate hazardous waste generators, and the regulations for these three kinds of generators, are as follows:

Conditionally Exempt Small Quantity Generators (CESQGs)

- CESQGs generate 220 pounds (100 kilograms) or less of hazardous waste per month, or 2.2 pounds (1 kilogram) or less per month of acutely hazardous (highly toxic) waste;
- They may not accumulate above 2,200 pounds (1,000 kilograms) of waste at any period of time;
- CESQGs must identify all generated hazardous waste; and
- CESQGs must ensure, along with all other generators, that the hazardous waste they accumulate is delivered to a facility that is expressly permitted to handle it.

Small Quantity Generators (SQGs)

- SQGs generate in between 220 pounds (100 kilograms) and 2,220 pounds (1,000 kilograms) per month;
- SQGs quantity of hazardous waste held on site can never exceed 6,000 kilograms;
- They may accumulate waste, without a permit, on site for up to 180 days (and up to 270 days if shipping the hazardous waste a distance which exceeds 200 miles); and
- SQGs must always have at least one employee, acting in an emergency coordinator capacity, available in case of an emergency. Written contingency plans, with detailed response measures, must be readied by SQGs beforehand for handling such emergencies.

Large Quantity Generators (LQGs)

- LQGs can generate more than a 2,200 pounds (1,000 kilograms) of hazardous waste per month, or more than 1 kilogram per month of highly-toxic or acutely toxic hazardous waste;
- LQGs have no limit on the amount of hazardous waste they may accumulate on site;
- LQGs may only store or accumulate waste on site for a period of 90 days, although some exceptions may apply;

- LQGs must submit a hazardous waste report every two years; and
- LQGs must also always have at least one employee acting in an emergency coordinator capacity in case of an emergency. They must also have written contingency plans with detailed response measures to be ready beforehand for handling emergencies.

Please also note that while these federal classifications hold true for most states, some have their own set limits on the amount of waste that a generator may produce or store that may differ from or conflict with EPA requirements and categories. You can find your state's waste quantity limits on a list provided by the EPA.

Some specific states may even have wholly discrete categories along with regulations that make up these definitions. For example, Massachusetts has what they refer to as a Very Small Quantity Generator (VSQG) classification, which can be thought of as fitting in between the federal definition of a Conditionally Exempt Small Quantity Generator (CESQG) and a Small Quantity Generator (SQG). Accordingly, each state may have their own stipulations on storage and transportation as well.

Making Sense of EPA ID Numbers

The purpose of an EPA ID number is to ensure that hazardous waste can be tracked from “cradle-to-grave”, or from its point of generation to its ultimate disposal. Generators are responsible for their waste even after it leaves their facility, and this paper trail is what makes accountability possible.

In most cases, EPA ID numbers are both permanent (unless you’ve been given a provisional number for an emergency or singular cleanup operation) and site-specific (unless you are a transporter).

If you or your business generates or transports hazardous waste, or if you run a facility that is responsible for recycling, storing, treating, or disposing of hazardous waste, these activities need to be disclosed to your regional Environmental Protection Agency office or authorized state waste management department. If you generate over 220 pounds of hazardous waste or 2.2 pounds of acutely hazardous waste in the course of any calendar month, you will need an EPA ID number.

To do this, you will need to file EPA Form 8700-12, Notification of Regulated Waste Activity (available here). If your business generates hazardous waste from more than one facility, you will need to fill out a form for each (remembering that the numbers are tied to locations, not businesses).

Once you have your EPA ID number, you will need it for shipping manifests for transporting hazardous waste, hazardous waste disposal, hazardous waste management reports, and applications for federal hazardous waste permits. You may also be asked for it by other businesses you deal with.

If you decide to move to a new location after you’ve been given an EPA ID number, you will need to file for a new one. The number will not follow you, even if you’re moving somewhere in the same neighborhood.

Department of Transportation Hazardous Waste Guidelines

All generators, transporters, and commercial handlers of hazardous waste should be aware of the Department of Transportation's (DOT) rules on the containerization and storage of toxic waste. Transporters, along with generators, must comply with the rules or face legal consequences.

DOT regulations are meant to ensure safety and accountability when handling hazardous materials. And they also coincide and work in conjunction with the Environmental Protection Agency, via RCRA and its guidelines.

But once you are familiar with these regulations, you will be better suited to make the best choices for your business, including who you want to truck or ship your waste (are they compliant with DOT's rules?), and other decisions that can affect the bottom-line of your business (making sure to keep within legal boundaries when dealing with hazardous waste so as not to incur a fine, for one).

Hazardous waste labeling and marking isn't as complex as it sounds. According to regulations, generators must simply place and—keep in good condition—the following information on each container from the moment waste is introduced.

Labeling

Labels are diamond-shaped warning placards designed to convey the associated hazard of the contained waste by the DOT. Examples include "flammable liquid," "poison," and "corrosive." These labels must be:

- At least 4" x 4" in size,
- The appropriate print style, color, and border, and
- Entirely visible (never partially hidden by another object or sign, or placed on parts of a container not easily seen).

If more than one label is necessary, the labels should be placed next to each other with six inches of space in between, and the label describing the primary hazard should be placed above and to the left of labels describing secondary hazards.

Marking

DOT regulations also require proper "marking" (which by DOT's definition, is different than labeling). All markings must be durable in nature, not obscured by other labels, and in English. Basic marking requirements mandate that a package should read as follows:

> **HAZARDOUS WASTE – Federal Law Prohibits Improper Disposal.**
> **If found, contact the nearest public safety authority or the Environmental Protection Agency.**
> **Generators name and address:** [write in the business name and address]
> **Manifest Document Number:** [write in the manifest number]

Additionally, depending on the situation and type of hazardous material, there may be more information necessary, including,

- A United Nations substance (UN) number or North American (NA) identification number, with a four-digit number which identifies the exact type and class of waste inside (read: not required for limited quantities),
- A description of the waste (for non-bulk packaging),
- Technical name (for non-bulk packaging), and
- The shipper's name and address (if the waste is being transported).

Multiple Containers and Duplicate Labels

If you're shipping of several containers of consonant hazardous waste (unlike or incompatible waste types should under no circumstances be stored together in the same container), then a label must be affixed to the packaging to represent every class of hazardous waste that is to be stored overnight for transport. Duplicate labeling may be required at times (and when this is so, labels must be placed on at least two sides of the container), including when,

- A package's volume exceeds 480 gallons,
- Any non-bulk package contains radioactive substances,
- A portable tank is less than a 1,000 gallon-capacity, and
- Freight containers or aircraft unit load devices have a volume of approximately 480 gallons.

On-Site Hazardous Waste Storage and Containerization

Generators commonly store hazardous waste on-site before transferring their waste to another facility. It's easier than shipping off the waste immediately and gives a newer company time to find the right facility for their waste. But knowing the EPA-recommended units of containerization is key for proper storage.

The storage vessels that are sanctioned for use by the EPA include:

Containers

Containers are any storage device meant for transportation and mobility, the most common of which being the 55-gallon drum. But a container by definition can be as sundry as a bucket, bag or test tube, or as large as a tanker truck or a railroad car.

Tanks

Tanks are stationary units which may be either open-topped or closed-topped, and are usually constructed to hold large amounts of waste on-site.

Containment Buildings

These hazardous waste buildings are self-supporting, completely closed-off structures meant to house non-containerized waste.

Waste Piles

Waste piles are open-aired accumulations of hazardous waste that must contain a double-layered liner or filtrate to ensure the waste does not leach into surface water or groundwater.

Drip Pads

Pertaining specifically to the lumber preserving industry, a drip pad is a curbed drainage square made of concrete or another non-earthen material, and is designed to catch wood-preservative waste.

Surface Impoundments

Much like landfills, surface impoundments are depressions in natural land, and therefore “made” of earthen material like soil, but may be lined with a manmade covering. The main difference between a surface impoundment and a landfill is that a landfill is usually the final destination for waste, while an impoundment is for temporary storage of HAZMAT substances.

These are just the types of storage containers that are meant for hazardous waste, but there are also rules regarding safe storing as well. A few EPA stipulations on storage include:

- Containers must be properly marked with the amount and type of hazardous waste they hold.
- Ignitable or reactive wastes that are held in containers must be at least 50 feet from the perimeter of your facility and all surface water.

How long hazardous waste may be held in containers on-site depends on the classification of generator and other factors, including:

- Hazardous waste containers weighing less than 55 gallons may only be held at the site of actual waste generation, or the “satellite accumulation” zone, for 3 days before it must be moved into a proper container.
- A Large Quantity Generator (LQG) may store waste in a container for up to 90 days.
- A Small Quantity Generator (SQG) may store hazardous substances for up to 180 days.

EPA Reporting Basics

Only Large Quantity Generators (LQGs) need to worry about federal reporting guidelines. As you know, this would mean that your company overall generates more than 2,200 pounds (1,000 kilograms) of waste each month, or 2.2 pounds (1 kilogram) of acutely toxic waste.

Conditionally Exempt Small Quantity Generators (CESQGs) are not required to submit any reports, yet Small Quantity Generators (SQGs) may have to keep manifests or reports of their generated hazardous waste depending on which state the company is in.

To first be able to be recognized as a hazardous waste generator, you must get an EPA ID number. If you're unfamiliar with that process, reference the relevant sections of this eBook for more information.

Be sure to keep documentation of all your interactions with the EPA, other generators, and Treatment, Storage, and Disposal Facilities (TSDFs) going forward.

Next, you must start keeping EPA manifests, in which you will document the involvement with your hazardous waste "cradle-to-grave," meaning from the time it is generated to when (and to whom) it is shipped off or transported to. More information about the manifest process and where to find the proper form is to be found here.

The Environmental Protection Agency, under its Resource Recovery and Conservation Act (RCRA) legislation, mandates that LQGs and off-site Treatment, Storage, and Disposal Facilities (TSDFs) must submit a report to the government about their waste activities every two years. Called the National Biennial Hazardous Waste Report, it is due on March 1st of every even-numbered year.

Although this is the federal rule, many states may require annual reporting. The full list of the states that do require this yearly report, along with other helpful information, can be found here.

All generators classified as LQGs (even if they have only produced over 2,200 pounds of waste one month out of the year) must compile all their records from the two preceding years and submit them, via either the traditional form or electronically (PDF for electronic submission here), to your EPA regional office.

EPA Inspections: Being Prepared

With today's intense focus on environmental regulation and compliance, it's standard practice to find yourself dealing with federal regulatory inspections. Sometimes these inspections will be a surprise. The Environmental Protection Agency (EPA) might show up unexpectedly and ask to tour your facility, review monitoring data, and interview employees.

Most companies have longstanding and respectful relationships with state and federal regulators, and certainly never intend to be uncooperative or evasive. A lack of preparation, however, can suggest otherwise. Perhaps not surprisingly, preparation for a surprise inspection is much more important than the proper response to one, and should be treated accordingly.

Here are some essential points for consideration:

1.) **Make sure your emergency information is accurate and up to date.** This may be one of the first things an inspector delves into upon arrival at your facility.
2.) **Keep your Main Accumulation Area (MAA) maintained and compliant, and your weekly MAA inspection logs complete and up to date.** Deficiencies during this portion of an EPA inspection will most likely lead to a higher level of scrutiny during the remainder of the inspection. Be sure that you are completely in compliance with MAA regulations and that the space is as clean and organized as possible.
3.) **Train and prepare all relevant personnel and staff ahead of time.** On-site, an inspector will most likely "interview" staff. Questions might focus on hazardous waste management, safety procedures, or even chemical compatibility issues in your chemical storage cabinets.

    Staff members should begin every inspection with a request to view the inspectors' official agency credentials and copies of business cards that identify each inspector, job title, and affiliation. They can also use this opportunity to ask questions, try to determine what prompted the inspection, and understand its nature and scope. Don't underestimate the value of a professional and courteous demeanor.

4.) **Conduct a mock inspection.** Nothing helps to prepare a facility like a mock inspection—conducted under the direction of legal counsel. It is far better to flag the tough questions in advance than to face them for the first time during an inspection. A mock inspection will help identify if permits, approvals, or other documents required to be maintained on-site and available for inspection are accessible, clearly labeled, and well organized.

5.) **Always treat inspectors like ordinary visitors, and offer basic safety training before walking the site.** When all is said and done, it's time for a thorough self-evaluation. Far too often, a facility will wait until the EPA gives them formal notification of a problem. This is a mistake. If you're aware of problems, correct them. If something couldn't be located, locate it. If a drum was uncovered, cover it.

If the EPA follows up on an unannounced inspection, finds a violation, and then learns the violation has not been corrected, that violation is likely to result in a penalty. On the other hand, if an inspector comes across an issue that you rectify before the end of the inspection, it will likely not be included in the final audit.

Solid preparation for EPA inspections will bring you peace of mind, and dramatically increase your chance of success when one finally comes about. Do yourself and your business a favor and do something about it now.

Dealing Directly With Hazardous Waste

Protecting yourself and your employees from contact with harmful substances is of vital importance when working with any kind of hazardous materials.

The Environmental Protection Agency (EPA) and the Occupation Health & Safety Act (OSHA) proscribe that when one is dealing with hazardous waste firsthand, it is necessary to wear Personal Protective Equipment (PPE).

How much or how little PPE is needed can vary on the situation and type of chemicals that you may be handling with, but may include protective eyewear, hard hats, chemical resistant gloves and boots, respirators, or even a full pressurized body suit.

According to these agencies, before attempting to work with hazardous substances, a thorough inspection of all current PPE is good procedure for all employees who manage hazardous to follow. Particularly, make sure to check for rips, tears, punctures, or cuts in any of the equipment.

The EPA outlines four levels of proper PPE-wear depending on the nature and type of hazardous waste that is being dealt with, from first-line responders and large-scale hazardous waste emergencies to cleaning up errant waste around the office or plant.

Level A Protection

Level A is the highest grade and is necessary at the greatest risk of exposure in general, but specifically, exposure to the skin, respiratory tract, and eyes.

According to the EPA, Level A protection includes:

- A positive-pressure, full face-piece Self Contained Breathing Apparatus (SCBA) or positive-pressure supplied air respirator with escape SCBA;
- A full vapor and chemical protective suit, completely encapsulated;
- Chemical-resistant gloves (inner and outer); and
- Disposable outer protective suit, gloves, and boots.

Level B Protection

This level would be most useful at an abandoned hazardous waste site, where vapors and gases haven't reached concentrations high enough to warrant level A protection. Level B protection can include:

- A positive-pressure, full face-piece, Self Contained Breathing Apparatus (SCBA) or positive-pressure supplied air respirator with escape SCBA;
- Face shield/splash guard;
- Chemical-resistant gloves (inner and outer);
- Coveralls;
- Hooded chemical resistant clothing; and
- Outer chemical-resistant boots.

Level C Protection

The third level is required when dealing with airborne substances and the level or concentration of the toxin(s) is known. Usual Level C equipment includes:

- Full face-piece air purifying respirator;
- Escape mask;
- Hard hat;
- Chemical-resistant gloves (inner and outer); and
- Disposable, chemical-resistant outer boots.

Level D Protection

Level D is the of minimum of required protection and may be sufficient when no known contaminants are present or when usual work procedures do not include the possibility of splashes, inhalation, or contact with hazardous levels of chemicals. Appropriate Level D protective equipment are:

- Safety goggles;
- Face shield/splash guard;
- Gloves;
- Coveralls; and
- Steel-toe and chemical-resistant boots.

After handling toxic waste, it is best to subject all equipment that has been in contact with any toxic materials to a full decontamination. This is especially crucial for Personal Protective Equipment (PPE), which may be worn daily by those whose job is to handle hazardous waste. As when these toxic chemicals permeate the equipment, they render the special body-wear no more safe than the chemicals themselves.

Different types of contaminants may require specific methods of decontamination. For instance, if dealing with volatile liquids, the best method for decontamination is evaporation, aided by steam jets, followed by a water rinse, while adhering contaminants might be better removed by scraping, wiping or freezing with dry ice.

If the contaminant cannot be removed from the PPE, the equipment is then regulated under the contained-in policy and must be treated under land disposal restrictions as hazardous waste.

It’s also wise to remember that, in the eyes of an inspector, out of date or improperly maintained equipment can be equivalent to the total absence of equipment. This incorrect type of equipment will not adequately provide protection for anyone who may need it. Keep inventory lists on hand, and check them periodically to ensure that all Personal Protective Equipment is in good condition.

Spill Prevention Basics

Spills come in all different shapes and forms—they can occur in laboratories or garages, indoors or outdoors, can be associated with medical or contamination emergencies, and come big or small. But no matter what kind of hazardous material spill you're dealing with, there are some rules of thumb that apply to all scenarios.

So whether your spill is radioactive, bio-hazardous, or something else altogether, keep these five things in mind to maximize your efficiency in handling it:

1.) **Education:**
Prior to conducting any work, all employees need to become familiar with the hazards of the chemicals they will be using. Everyone that will eventually come into contact with these chemicals and associated equipment (even minimal contact) needs to be thoroughly trained, and all questions and concerns should be addressed promptly. Emphasizing both the scope of the danger and the efficacy of education encourages employees to be careful and lessens the likelihood of spills.

2.) **Preparedness:**
Spill response procedures are important, but they're not worth much if workers haven't seen them until it's already too late. Develop these procedures well ahead of time, and be sure to include things like staff responsibilities, equipment instructions, cleanup expectations, communication methods, and disposal protocols for residue.

Once you've written them down, don't just forget about them; spill response procedures should be reviewed and updated often. Once you have procedures in place that you feel comfortable with, include them as a mandatory training segment. Conduct drills and practice runs to ensure that your workers know them backwards and forwards.

3.) **Safety:**
In the event of a spill, there's no greater priority than the safety of yourself and your workers. Chemical spills and releases can cause fires, explosions, and fumes and can come into contact with a worker's skin or be ingested and inhaled. If such a threat exists, or if you are unsure of the toxicity, you will need to contact emergency responders.

4.) Containment:

Once you've done everything in your power to protect human health, you need to start thinking about environmental and property damage. Confining contamination will help to eliminate these risks, but it's wise to remember that if the spill threatens to damage your property, it's likely it would also threaten your workers.

A threat to the environment can easily translate into a threat to the public. Simple containment suggestions include closing doors, building dikes around the edges of a spill, adding absorbents, or neutralizing acids and bases. Containment should certainly be your goal, but only once you have carefully evaluated the risks.

You will probably be capable of cleaning up a small spill on your own, but trained professionals should handle a more complex job.

5.) Notification:

Depending on the kind of spill you have experienced, you might be required to notify different authorities. For example, "sudden threats" to human health and emergencies will need to be reported to both the EPA and local authorities. Include notification expectations in your response procedures.

Conclusion

We hope you've learned something valuable that will be useful to your business. There are many things to consider when you're generating hazardous waste for the first time, and though it can be a little overwhelming, we're here to help. If you have further questions, or if you would like additional information on any topic we've covered in this eBook (or any topic we haven't), please let us know.

Hazardous Waste Experts can also assist you with the disposal of all your waste types. To request a quote for services, give us a call at (888) 994-5341 or simply visit this link and fill out the form.

You can also reach us at inquiries@hazardouswasteexperts.com.

ABOUT HAZARDOUS WASTE EXPERTS

Hazardous Waste Experts is a subsidiary of Pegasus Sustainability Solutions, Inc., a national provider of environmental, waste management, and sustainability services to businesses. If you would like more information, or waste disposal services, give us a call at (888) 994-5341.

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