24-Hr HAZWOPER Module 8

Container Labeling and Handling Drums and Containers

Section 8.1 Container Labeling

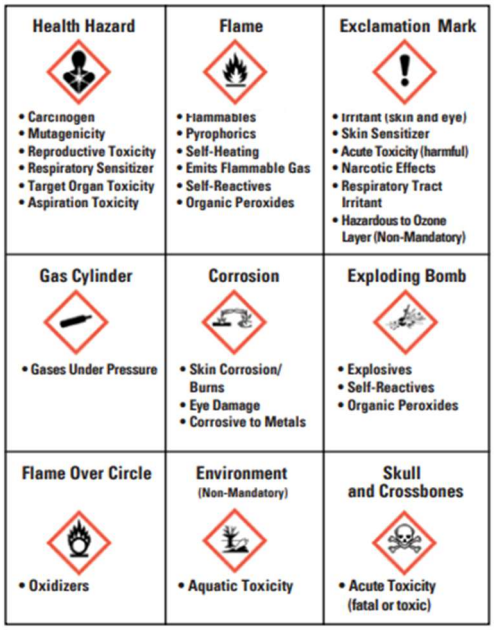
8.1.1 Shipped Container Labeling

Labels on containers shipped from manufacturers or distributors (aka primary labels) must include the following six items:

- **Product Identifier:** This identifies the product or chemical name and should match the product identifier used on the SDS.
- **Supplier/Manufacturer Information:** This identifies the manufacturer's company name, address and telephone number.
- **Precautionary Statements:** These describe general preventative, response, storage or disposal precautions.
- **Hazard Pictograms:** Pictograms feature a symbol displayed on a white background, enclosed within a red border, and represent specific hazards. There are 9 different pictograms that identify risks in three different categories including: chemical/physical, health or environmental.
- **Hazard Statements:** These describe the nature and, when appropriate, the degree of the hazard for each hazard category.
- **Signal Words:** The GHS signal words "Danger" and "Warning" indicate the relative level of severity of the hazard. "Danger" is used for more severe hazard categories.

The various pictograms that can be used are listed below:

HCS Pictographs and Hazards



8.1.2 Workplace Container Labeling

In the workplace, employers often use both the shipped primary containers they purchase and their own secondary containers, such as coffee cans or plastic jugs, to store and use chemicals. It is the responsibility of the employer to ensure that each workplace container of hazardous chemicals is properly labeled. There are two options for labeling workplace containers:

1. **Use the same information as the shipped container labels**: Employers can label the workplace containers with the same information that is required on the labels of primary containers shipped from manufacturers or distributors.
2. **Provide general hazard information**: If the workplace container does not have the same detailed information as the shipped container label, the employer must ensure that it provides at least general information regarding the hazards of the chemicals. This can be done through the use of words, pictures, symbols, or a combination thereof. The information provided on the workplace container, along with other available information such as the SDS, should give employees specific information about the physical and health hazards of the chemical.

It is important for employers to supplement the information on workplace container labels through additional training, discussions about SDS information, and the use of signs or process sheets. This ensures that employees receive all the necessary hazard information that they would have obtained from a shipping label.

8.1.3 Other Labeling Requirements

Labels must be kept in good condition and should not be removed or defaced unless the container is immediately marked with the required information. They must be legible, in English, prominently displayed on the container, and readily available in the work area throughout each work shift. Employers with non-English-speaking employees may provide additional information in their language as long as the information is also presented in English.

When chemical manufacturers, importers, distributors, or employers obtain new significant information about the hazards of a chemical, they must update the labels for that chemical within six months. It is their responsibility to ensure that containers of hazardous chemicals shipped after that time contain the updated information. If the chemical is not currently being produced or imported, the relevant party must include the new information on the label before shipping or reintroducing the chemical into the workplace.

HCS 2012 allows for the use of alternative in-plant labeling systems, such as the Hazardous Materials Information System (HMIS) or the National Fire Protection Association (NFPA) system, if they effectively convey the required hazard information. These alternative systems use color, numbers, and other information to communicate the hazards of the chemical. It is important to

ensure that employees can easily understand and correlate the visual warnings on in-plant containers with the associated chemicals and their hazard warnings. The alternative labeling system must also be readily accessible to employees throughout each work shift.

Section 8.2 Handling Drums and Containers

Hazards associated with handling drums and hazardous waste containers include detonations, fires, explosions, vapor generation, and physical injuries. There are also risks associated with moving heavy containers and working around stacked drums, heavy equipment, and deteriorated drums. Personnel should keep in mind that drums are frequently mislabeled-particularly drums that are reused. Thus, a drum's label may not accurately describe its contents.

8.2.1 Drum Safety Guidelines

By following these guidelines and safety practices, the risks associated with handling drums and hazardous waste containers can be minimized, ensuring the safety of personnel and preventing accidents.

- **Hazard Communication:** Clearly inform employees about potential hazards associated with the drums.
- **Inspection:** Carefully inspect drums for structural integrity and potential hazards before handling them. Move drums located in inaccessible areas to a location where they can be properly inspected.
- **Precautions for Handling:** Handle drums only when necessary to avoid accidents and warn personnel about potential handling hazards. Use appropriate PPE when necessary.
- **Handling:** Handle, transport, label, and dispose of hazardous substances and contaminated liquids and residues properly.
- **Handling Sequence:** Determine the most appropriate sequence for moving drums and containers to maximize safety.
- **Drum Standards:** Ensure drums and containers meet appropriate DOT, OSHA, and EPA regulations for the contained waste.
- **Training in Lifting Techniques:** Train workers and equipment operators in proper lifting and moving techniques for safe drum handling.
- **Spill Preparedness:** Keep salvage drums and absorbents readily available for immediate response to spills, leaks, or ruptures.
- **Spill Containment:** Implement a comprehensive spill containment program to effectively manage major spills. Construct containment berms for major spill incidents.
- **Safe Transfer of Contents:** In cases where drums cannot be moved without risking rupture, carefully transfer their contents into sound containers using appropriate devices.

- **Use of Overpack Containers:** Employ overpack containers for handling leaking or damaged drums. Prepare overpacks in advance before handling drums to streamline the process.
- **Use of Remote Equipment:** Use remote-operated equipment to eliminate the need for determining drum integrity before excavation. Isolate critically swollen drums until pressure can be relieved remotely.
- **Use of Detection Systems:** Apply detection systems to estimate the location and depth of buried drums, enhancing excavation safety.
- **Caution During Excavation:** Exercise caution when removing soil or covering material to avoid disturbing buried drums.
- **Fire Extinguishing Equipment:** Ensure fire extinguishing equipment is on hand to control incipient fires during handling and excavation.

8.2.2 Unlabeled Drums

Treat unlabeled drums as hazardous until their contents are identified and appropriately labeled. Prior to handling unlabeled drums, they should be visually inspected to gain information about their contents. The inspection crew should examine the following items:

- Symbols, marks, or signs indicating hazardous contents (radioactive, leaking or deteriorated, bulging, explosive or shock-sensitive)
- Signs of deterioration such as corrosion, rust, and leaks
- The configuration of the drumhead (whole lid, bung, liner)
- The type of drum (polyethylene/PVC-lined, exotic metal, single-walled)
- Air monitoring samples near drums

To get clues as to what's inside the unlabeled drums, examine the conditions in the surrounding area using instruments such as a gamma radiation survey instrument, a combustible gas meter, and an organic vapor monitor.

8.2.3 Staging Drums

Drums sometimes need to be staged, or carefully moved to a predesignated area, to facilitate characterization and remedial action, as well as to get away from potentially hazardous site conditions. This increases hazards linked with drum movement, but decreases hazards associated with the enhanced organization and accessibility of the waste materials.

The number of staging areas needed depends on site-specific circumstances such as the scope of the operation, the accessibility of drums in their original positions, and the perceived hazards. Investigation usually involves little, if any, staging, while remedial and emergency operations can involve extensive drum staging. The extent of staging should always be kept to a minimum and may include the following areas:

- **First Staging Area:** This is where drums can be organized (according to type, size, and suspected contents) and stored prior to sampling.
- **Opening and Sampling Area**: This is where drums are opened, sampled, and resealed. This area should be a safe distance from the original waste disposal or storage site and from all staging areas to prevent a chain reaction in case of fire or explosion.
- **Second Staging Area** (or Holding Area): This is where drums are temporarily stored after sampling pending characterization of their contents. Do not place unsealed drums with unknown contents in the second staging area in case they contain incompatible materials—either remove the contents or overpack the drum.
- **Final Staging Area** (or Bulking Area): This is where substances that have been characterized are bulked for transport to treatment or disposal facilities.

8.2.4 Opening Drums

Drums should be opened using the following practices:

- Utilize remote methods for opening drums that are structurally compromised.
- Employ non-sparking tools whenever possible, especially in environments with flammable substances.
- If using a supplied-air respiratory protection system, supply air to operators via airlines and have escape SCBAs ready.
- Keep employees not directly involved in drum opening at a safe distance and use shields for protection against accidental explosions.
- Position controls for opening equipment, monitoring equipment, and fire suppression behind explosion-resistant barriers.
- Utilize material handling equipment and hand tools that are designed to prevent ignition in flammable atmospheres.
- Open drums in a manner that safely relieves any excess interior pressure.
- Ensure that employees do not stand or work on drums or containers to prevent accidents.
- Perform air monitoring during drum-opening activities to detect any hazardous emissions or changes in air quality.
- Avoid using picks, chisels, and firearms when opening drums.
- Minimize worker exertion by hanging or balancing the drum opening equipment.
- Open polyethylene or polyvinyl chloride-lined (PVC-lined) drums through the bung by removal or drilling. Then, reseal open bungs and drill openings quickly with new bungs or plugs.
- Decontaminate the equipment used to open the drums after each use.

8.2.5 Sampling Drum Contents

When drum sampling, use the following safety tips:

- Sampling personnel should be kept at a safe distance when opening drums.
- Avoid leaning over or standing on drums.
- Cover drum tops to avoid excessive contact.
- Use glass rods or vacuum pumps to obtain the samples.

8.2.6 Characterization of Drum Contents

Drum characterization provides necessary data to determine safe packaging and transportation of wastes for treatment and disposal. Bulk wastes must be sufficiently characterized to determine which of them can be safely combined. Compatibility tests are used to segregate wastes into broad categories (auto-reactives, water reactives, inorganic acids, organic acids, heavy metals, pesticides, cyanides, inorganic oxidizers, and organic oxidizers) and identify compatible waste types for safe bulk storage and disposal options.

Whenever possible, use an on-site laboratory for material characterization to minimize the time before appropriate action can be taken. If off-site analysis is necessary, package samples on-site according to DOT regulations and ship them to the laboratory for analysis (49 CFR Parts 171-178).

8.2.7 Bulking and Shipping Materials

Following characterization, wastes are often mixed together and placed in bulk containers (such as tanks or vacuum trucks) for shipment to treatment or disposal facilities. This must be done at the final staging area by trained and experienced personnel. Use the following procedures when bulking wastes:

- Inspect each tank trailer and remove any residual materials prior to placing bulked items.
- To move hazardous liquids, use pumps that are properly rated by the National Fire Protection Association and that have a safety relief valve with a splash shield. Make sure the pump hoses, casings, fittings, and gaskets are compatible with the material being pumped.
- Inspect hose lines before beginning work to ensure that all lines, fittings, and valves are intact with no weak spots.
- Take special precautions when handling hoses as they could contain residual material that can splash or spill on the personnel operating the hoses.
- Store flammable liquids appropriately in approved containers.

The shipment of materials to offsite TSD facilities involves the use of waste hauling vehicles. DOT and EPA regulations for shipment of hazardous waste must be followed. Use the following procedures when shipping hazardous waste:

- Locate the Final Staging Area as close to the site exit as possible.

- Keep hauling vehicles and drivers in a safe area until loading begins.
- Give drivers appropriate PPE.
- Make sure drums are tightly sealed and overpack leaking/deteriorated drums prior to shipment.
- Cover the load with a layer of clean soil, foam, and/or tarp.
- Secure the load to prevent movement or release of hazardous waste during transportation.
- Decontaminate the tires prior to leaving the hazardous waste site.
- Weigh vehicles every so often and check that they are not releasing dust/vapor emissions.