



Safety Bulletin

Hazardous Materials Receiving

The requirements that regulate the transportation of hazardous materials codified by the US Department of Transportation (DOT) in 49 CFR Parts 100-185 under the authority of The Hazardous Materials Transportation Act (HMTA) place the primary burden of compliance on the shipper (or “offeror” in DOT terms) and the carrier, not the consignee. Although consignees are relieved of most HMTA compliance duties, they are not immune to consequences that may result from lax or improper acceptance and handling of hazardous materials once they are received.

For example, a permitted bio-waste incineration facility accepted and unloaded a shipment of Class 6 Infectious Substances and then found the material was packaged in non-regulation containers, which began leaking during transportation. Since the shipment had already been accepted and signed for, the carrier declined to return to the facility and unload the containers. Upon contacting the shipper, the consignee learned they were an ineligible generator of the regulated substance and by law could not accept the return of the material. The incineration facility had to hire a specialized remediation contractor to contain and clean up the contamination, which disrupted its normal operations, and then take legal action against the shipper to recover a portion of its expenses for remediation and business interruption.

This expensive lesson highlights the importance of implementing and following appropriate receiving procedures before hazardous materials are accepted.

General Procedures

The HMTA indicates that “No person may offer or accept a hazardous material for transportation...unless that person is registered in conformance [with the standard]” (i.e., 49 CFR 171.1(a)). This indicates that you as a receiver of hazardous materials **should know your shipper/supplier**. Do a background check to determine the shipper has a good reputation and the proper credentials, licenses, permits, and experience to handle a specific material. Ask for

trade references and require documented proof they are eligible and capable of shipping their products or waste in conformance with HMTA.

This regulation further indicates that “hazardous materials [must be] properly classed, described, packaged, marked, labeled, and in condition for shipment as required.” Consequently, all shipments should be expected in advance by the receiver, matched to a purchase order for materials or a service contract for waste, and **must be accompanied by acceptable shipping papers**. Acceptable shipping papers can be a bill of lading, hazardous waste manifest, or similar document as long as it is legible, is printed manually or mechanically in English, and includes the description information required by 49 CFR 172.201 and the referenced Hazardous Material Tables in 49 CFR 172.101 and 172.102.

Employees receiving hazardous materials or waste should always review the shipping papers and ensure the following required entries are present:

- **Proper Shipping Name** - This may be one or more words, such as “Chlorine” or “Sulfuric Acid” and may include a number that indicates the concentration. When a Not Otherwise Specific (NOS) shipping name is used, the technical name of the product may appear in parentheses such as “Corrosive Liquid, NOS (Capryl Chloride). For waste shipments, the word “Waste” must be part of the shipping name.
- **Hazard Class** - This may be numeric or worded, such as “Class 2 Gases” and may include subsidiary hazard classes and names such as “Ethylene Oxide 2.3”.
- **Identification Number** - A 4-digit identification number must appear on the shipping papers with the prefix “UN” (United Nations) or “NA” (North America) before the shipping name as appropriate or after the hazard class (Acetone, Flammable liquid, UN 1090). Chemicals without a UN number may be assigned an NA number by DOT.

- **Packing Group** - The packing group indicates the degree of danger presented by the material and must appear in Roman numerals. It is generally prefixed by "PG", such as PG I (great danger), PG II (medium danger), and PG III (minor danger).
- **24-Hour Emergency Response Telephone Number** - This is the number of a person with knowledge of the shipped material and the appropriate emergency response procedures.

Depending on the material, additional information may be required on the shipping papers such as concentration, weight, quantity, temperature, or warnings for poison-inhalation hazards. These further requirements are described in 49 CFR 172.203. But the shipper **must certify in writing** on the shipping papers that the materials are properly classified, described, packed, labeled, and in proper condition for transportation according to applicable DOT regulations (49 CFR 172.204).

Employees should be instructed on how to proceed if shipping papers are incomplete, erroneous, or not available. Materials should not be allowed on site and certainly **not accepted or unloaded until appropriate or corrected documentation is received**.

The next step in the receiving process should be a **thorough inspection of the shipment before unloading and prior to acceptance**. The inspection should take place in a specific, designated area designed to prevent and control release of the materials.

Employees should **check for opened, damaged, or leaking containers**. Drips, wetness, or material on the vehicle or on the ground around the vehicle are indicators of a potential release. If the material is a gas or under pressure they should look for visual signs of vapors and listen for the hissing sound of a container leak. Also have them **check for signs of tampering** or security breaches to the delivery vehicle and the shipment, and to **ensure the packages are properly labeled**.

Employees should check that the **basic package labeling** requirements consisting of the proper shipping name and identification number of the contents are present. (49 CFR 172.300 – 172.304) Package marking should be durable, in English, not obscured, and affixed to the surface of the package or container. Specific requirements vary by material hazard. For example, liquid hazardous materials must be packed with the closure upright and marked on the outside container "This End

Up" with an arrow showing the orientation. Employees should be familiar with specific labeling requirements for the types of substances they are expected to handle. Employees should not accept a package unless the appropriate labeling and markings are applied and appropriate to the material contained inside.

Employees must also **ensure that material quantities received match the consignee's order forms and the offeror's shipping documents**. Accepting more or less material than what is specified or described can lead to numerous problems and regulatory entanglements. Obviously, the **types** of materials received should be checked against, and conform to, the description provided on the shipping papers.

Lastly, employees should inspect the packaging or containers for appropriateness. It is the shipper's responsibility to use packaging "manufactured, fabricated, marked, [and] maintained...in accordance with the HMTA" (49 CFR 171.2(g) and determine that it is authorized and appropriate for the contents. But if a mis-packaged material enters the consignee's premises and the material is released due to container failure or other cause, the consignee will be left with the immediate problems of containment, clean up and, possibly, emergency response. Consequently, **employee training in identifying "performance oriented" package marking** is often desirable.

For example, the Manufacturer's Marking Requirement (49 CFR 178.503) requires a letter identifying the performance standard of the package: X meets requirements for packing group I, II, and III; Y meets requirements for packing group II and III; and Z only meets requirements for packing group III. As another example, the letter "L" indicates packaging passed a leak-proof test, and the letter "S" indicates the package is intended only for solids. Employees should have a basic understanding of the materials they are handling and the most appropriate ways to containerize and store them. They should also be **authorized to question the appropriateness of the packaging** of any hazardous materials entering the facility.

If any aspect of the inspection results in discovery of discrepancies or deficiencies, employees should have instructions on how to proceed. This may involve contacting a supervisor, the safety officer, or the facility's office of environmental compliance. But it is only prudent to **resolve any questions before the shipment is accepted and unloaded**.

Specific Procedures

Specific procedures for receiving hazardous materials will depend on the properties of the material. Hazardous materials fall into nine DOT classes:

- Class 1 Explosives
- Class 2 Gases
- Class 3 Flammable Liquids
- Class 4 Flammable Solids
- Class 5 Oxidizing Substances
- Class 6 Poisonous and Infection Substances
- Class 7 Radioactive Materials
- Class 8 Corrosives
- Class 9 Miscellaneous Dangerous Goods

These are further separated into divisions such as flammable and non-flammable gases, spontaneous combustible materials, or materials that are dangerous when wet. Each of these materials requires specialized handling by the shipper and the carrier, which will dictate the method of packaging, labeling, and mode of transportation. Consignee's should be familiar with these specific requirements because materials that are packaged or shipped incorrectly can become damaged, degraded, or unstable in transit and not show any overt signs of problems upon arrival. Consequently, additional receiving procedures may include sampling and testing, isolation, radiation scans, thermal imaging, or other specialized inspections.

Training

Training on facility-specific hazardous material inspection protocols is an essential of any firms risk management program. Training required under 49 CFR includes:

- **General awareness/familiarization:** This is intended to raise employee understanding of the Hazardous Materials Regulations and the purpose and meaning of the hazard communication requirements. All employees who work with hazardous materials must have this training

- **Function-specific training:** This is intended to teach the necessary knowledge, skills, and abilities for an individual's job function.
- **Safety training:** This training concerns the hazards posed by materials in the work place and personal protection measures to help avoid injury.
- **Modal specific requirements:** Any additional training required by 49 CFR Parts 174, 175, 176, or 177.

Hazmat training must be completed within 90 days after hiring or a change in job function. New hazmat employees may perform their job functions prior to completing training provided they are under the direct supervision of a properly trained employee

Your company's due diligence, training and preparation for receiving hazardous materials can prevent costly incidents and litigation. Just remember that once a shipment is accepted at your facility the responsibility for proper off-loading, handling, transfer, storage, or disposal falls to you.

References

This document was adapted from information provided by the U.S. Department of Transportation Federal Motor Carrier Safety Administration in a document on its website titled How to Comply with Federal Hazardous Materials Regulations <http://www.fmcsa.dot.gov/safety-security/hazmat/complyhmregs.htm#hm> and a document titled United States Hazardous Materials Instructions for Rail published by the Association of American Railroads/Bureau of Explosives June 25, 2008 http://boe.aar.com/boe/download/US_HMI_Final%202008.pdf

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