

# Shipping Dangerous Goods

**Complex regulations from multi-governing agencies complicate hazardous chemicals transportation.**

BY WILLIAM SPIRO

Shipping hazardous chemicals can be a very complicated business. Chemical producers must comply with a myriad of hazardous materials regulations mandated by government and non-government agencies when shipping hazmat products domestically and abroad. Considering that noncompliance can result in costly penalties, chemical shippers must be knowledgeable of the current regulations pertaining to the shipment of their particular classifications of hazardous materials when using specific modes of transportation.

Hazardous materials are designated by the Secretary of the Department of Transportation (DOT) as those posing an unreasonable threat to the public and the environment. Under the Code of Federal Regulations, Title 49, Part 173.2, chemicals transported on U.S. highways can fall into one of nine hazardous material classes including explosives, gases, flammable liquids, flammable solids, oxidizers, poisons, radioactive materials, corrosives, and other dangerous substances. A detailed description of these classifications can be found at the National Transportation Library at <http://ntl.bts.gov/DOCS/hmtg.html>.

The DOT regulates the transport of these hazmat materials in commerce by motor vehicle and railcar and has influence on regulations

pertaining to shipments by air and sea. Based on product classification, the DOT outlines specific rules for packaging, marking, documentation, labeling, hazard communication, and emergency response information of hazardous chemicals. To ensure compliance, chemical shippers must accurately identify their products and understand the rules and regulations that pertain to their classifications. It is important that products are initially properly identified as regulations differ for each classification. Noncompliance stemming from wrong product classification can result in fines for each violation.

For hazardous chemicals shipped by sea, chemical companies must adhere to International Maritime Dangerous Goods (IMDG) Codes, an international code for the transport of dangerous goods by sea covering such matters as documentation, packaging, container marking and stowage.

If shipping hazardous products by international airways, chemical producers must follow the mandates of the International Air Transport Association (IATA). Working closely with different government agencies, the IATA has developed Dangerous Goods Regulations to which shippers, forwarders and carriers must comply when shipping hazardous chemicals by international air.

As rules for shipping hazmat chemicals differ by land, air and sea, it is imperative to identify all regulations mandated by the various governing agencies pertaining to a product shipment, and then determine the best and most cost-effective way to follow them all to ensure products remain in compliance through the entire transportation cycle. Following the most restrictive rules can often ensure compliance through different modes of transportation. For example, while a hazmat chemical may be shipped by truck in containers of 40 gallons, air cargo might restrict chemical containment to two pints. Use of passenger aircraft to freight this chemical might even restrict it further. In this scenario, if chemicals are packaged in the smallest restricted containers, it can meet the regulations of different modes of transportation.

## Training is imperative

Training logistics staff to understand the rules and regulations pertaining to chemical shipment is imperative to ensure compliance



throughout the entire supply chain process. It is mandatory that personnel be trained and certified to tender and ship hazardous materials. Whether a warehouse clerk or supervisor, any logistics employee who performs any of functions related to handling hazardous materials (such as identification, classification, labeling, marking, packaging, etc.) must be trained in the regulations that apply to that function. Carefully choosing supply chain partners certified in handling hazardous chemicals is also important as compliance is ultimately the responsibility of the shipper.

Training programs for DOT and IATA are offered by a variety of organizations. IATA also provides its own training to ensure shippers have the tools and resources to ship dangerous goods safely. With DOT regulations changing often, trained personnel must be recertified every three years. In recent years, DOT hazardous materials regulations changed to bring U.S. hazardous materials regulations more in line

with international standards to better support foreign trade and maintain the competitiveness of U.S. goods.

Even if personnel are trained, however, chemical providers may want to use the services of a consultant to ensure compliance in one or multiple areas. The responsibilities of the chemical shipper, as defined by the DOT, are vast and include:

- Product classification
- Proper shipping name
- Class division
- ID number
- Hazardous warning and handling labels
- Packaging
- Marking
- Employee training
- Placarding
- Compatibility
- Shipping papers
- Emergency response info & phone number
- Security plan
- Certification

## **Noncompliance is expensive**

Noncompliance to DOT regulations can result in civil penalties from as little as \$275 to \$32,000 per incident. Criminal penalties can be as high as \$500,000 and include possible jail time. While the DOT has specific limits on violations, the IATA does not and can impose even higher fines at its discretion.

Each year, over 26,000 hazmat incidents are reported to the National Response Center. Over 100,000 leaks or spills occur each year. To avoid high penalties and damage to the environment, it is important to follow the mandated rules of our transportation agencies. Their ultimate goal is to get your products to their final destination safely without doing harm to the environment and human kind. **wt**

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