

WHITE PAPER

UNDERSTANDING **HAZMAT**

TRANSPORTATION MANAGEMENT

LANDSTAR 

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UNDERSTANDING HAZMAT Transportation Management

Whether the goal is to prevent accidents, preserve human lives, minimize adverse consequences, or ensure timely emergency response, the rules and regulations outlined by laws governing the transportation of hazardous materials (hazmat) are complex and apply directly to shippers and carriers. That means, whether shipping hazmat by highway, rail, air or water, any company whose goods fall into the hazmat category must adhere to these rules or risk fines, penalties, bad publicity and other potential exposure.

Sometimes a company's hazmat shipping papers contain incomplete or inaccurate information, meaning that there's potential that shipments are non-compliant with hazardous materials regulations. These discrepancies may range from minor issues such as no package type or unit of measure listed for each hazmat entry on the shipping paper, up to more concerning violations such as incorrect or no shipping descriptions listed, missing or incorrect hazmat placards offered and improper load securement—all of which are violations of U.S. Department of Transportation (DOT) regulations.

Moreover, violations listing both the shipper of goods and the carrier are recorded within the DOT database. To further complicate things, not all hazardous materials regulations are congruent or aligned with one another. For example, according to the National Conference of State Legislatures (NCSL), state laws address some or all of the following key benchmarks within the hazmat supply chain:

- Registration and permit programs
- Routing requirements
- Notification
- Financial liability
- Emergency response planning and training
- Inspection
- Enforcement
- Shipment restrictions

Hazmat transportation's multifaceted nature makes logistics particularly complicated, especially when carriers don't realize that they're transporting such goods. "Even though a manufacturer may be an expert at producing goods," says Mike Cobb, Landstar's vice president of safety and compliance, "it may not be as well-versed in the intricacies of transporting those materials, including unknowingly offering carriers non-compliant hazmat shipments."





What are Hazardous Materials?

Any company working with hazardous materials of any type must understand the nature of hazardous materials and the steps that must be taken to ship such goods in the safest possible manner.

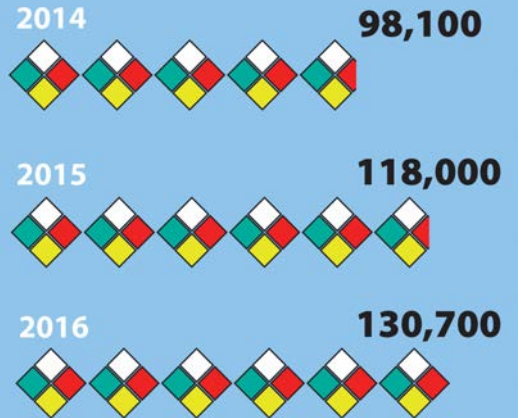
By definition, a hazardous material is a substance or material that the Secretary of Transportation has determined is “capable of posing an unreasonable risk to health, safety, and property when transported in commerce and has been designated as hazardous under the federal hazardous materials transportation law.” The term includes substances, hazardous waste, marine pollutants, elevated temperature materials, and other materials designated as hazardous.

It’s important to note that there’s a distinction between the obvious hazardous materials (liquid gasoline, ammunition, explosives) and less obvious hazmat, like in the case of Class 9 commodities (lithium batteries, dry ice) that don’t require the transport vehicle to be placarded for domestic transport.

When a company understands whether or not its goods meet the definition of hazardous materials, it can then initiate, use and continuously monitor the appropriate hazmat management programs. “By having a hazmat program in place,” says Wes Pace, Landstar’s director of hazardous materials compliance, “a company limits its risk and potential liability.”

An established hazmat management program also helps companies adjust when there are changes to state or federal regulations. For example, the program manager should review Federal Register notices available online on a daily basis to identify any changes or proposed changes that could or would impact the company’s business practices.

Number of hazmat loads hauled by Landstar



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—Wes Pace, Landstar’s director of hazardous materials compliance

“While the process for regulation changes is lengthy,” Pace explains, “it provides ample time—for the most part—for businesses to ensure they can and do have measures in place to meet the regulation changes and requirements.”

Most recently, for example, classification revisions have been made for the transportation of lithium batteries—a point made very public in connection with the controversy over the Samsung Note 7. “Due to the safety concerns associated with transporting lithium batteries, particularly by air,” says Pace, “the government has made ongoing revisions to the regulations on lithium batteries to ensure safe transport and to protect the public.”

Measuring the Risks

The risks of shipping hazardous materials without following the proper procedures are many, and they include:

RISK FOR MANUFACTURERS/SHIPPERS:

- 1 The principal risk when transporting hazardous materials is always the potential of personal injury and property damage due to mishandling;
- 2 Regulatory risks include exposure to potential civil penalties imposed by the US DOT, such as by the Pipeline and Hazardous Materials Safety Administration (PHMSA);
- 3 Individual state violations can also occur; and
- 4 Based on incident circumstances, other government agencies such as Occupational Safety and Health Administration (OSHA) and the Environmental Protection Agency (EPA) can be involved.

Other risks include the potential for negative impact viewed by the general public, potential loss of authority to ship hazardous materials, and potential loss of business. The DOT has established guidelines for minimum and maximum civil penalties of not more than \$78,376 for each violation, except for the maximum civil penalty of \$182,877 if the violation results in death, serious illness, or severe injury to any person or substantial destruction of property. (Individual states can and often impose fines, which vary by state.)

RISK FOR CARRIERS: All of the above, plus Compliance, Safety, Accountability (CSA) points, which are points assigned to a carrier by DOT based on violations received during roadside inspections.

RISK FOR TRUCK OWNER-OPERATORS AND DRIVERS: Operators face the same monetary penalties as shippers and carriers, plus potential of suspension from transporting hazardous materials or loss of truck lease or employment.



RISK TO THE GENERAL PUBLIC: The general public could encounter risk associated with an incident/accident involving a shipment of hazardous materials if in close proximity to a release of certain hazardous commodities.

While there are many risks associated with mishandling hazardous materials in the supply chain, the biggest challenge is that shippers may be unknowingly offering such materials to carriers. There are nine different hazard classes/divisions of hazardous materials. All hazard classes pose equal risk of fine, penalty and violation, from paint that falls under Class 3 Flammable Liquids to Helium and Oxygen that fall under Class 2.2 Non-Flammable Gas.

“Most Class 2.2 Non-Flammable Gas meets the definition of a hazardous material because the commodity is under pressure,” Pace explains. “By the same token, some hazard classes pose severe risk as is the case with some Class 1 Explosives, Class 2.3 Poisonous Gasses, and Class 6.1 Poisonous Liquids that pose an inhalation hazard, where there is no room for error.”

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In many cases, it's the companies that don't regularly handle hazmat that find themselves operating on the wrong side of state and federal regulations. "Even companies that offer hazmat to carriers for transport and are on top of their game don't always operate in a safe and compliant manner," Pace points out. "As well, those companies that rarely handle hazmat may not be up-to-date with the ever-changing regulations and wind up offering non-compliant shipments to carriers."

It's important to understand that regulations require that a company shipping hazardous materials must offer compliant shipments to carriers and that carriers should only accept compliant shipments. Companies should vet the hazmat carriers they utilize on items ranging from financial stability to appropriate insurance to experienced personnel and only use reputable carriers that are knowledgeable in hazardous materials. For example, a site

visit and discussion with a carrier's key hazmat professionals will provide insight into their processes around training, monitoring and communication.

When evaluating which hazmat carrier to work with, shippers should verify whether the carrier is:

- 1 Registered and permitted to transport hazmat;**
- 2 Financially stable; and**
- 3 Properly insured with appropriate levels and coverages applicable to hazmat transportation.**

And, look into whether the hazmat carrier has:

- 1 An understanding of which classes of hazmat they are able to transport;**
- 2 Dedicated and experienced personnel to monitor regulatory changes and assist a shipper with hazmat questions;**
- 3 The ability and willingness to review and understand a shipper's product, shipping papers, applicable placarding and first-responder requirements; and**
- 4 Capacity management capabilities to ensure compatibility between shipper, commodity and capacity.**

Using carriers that scrutinize the hazmat shipments they accept can and does catch shipment discrepancies that could otherwise result in unsafe situations or violations at roadside DOT inspections. Such carriers minimize potential risk and liability of non-compliant shipments to the company.

Risk at Shipper/Company Facility

For example, a company or manufacturer not normally involved with hazmat could run into a situation where a chemical that has been released in its facility must now be properly disposed of. The simple transport of those materials to a waste facility for disposal can throw the company unwittingly into the role of "hazmat shipper," literally overnight.



To avoid potential securement violations, unlike in this photo, totes must be blocked or braced to prevent left and right motion, and buckles should be placed so they do not rub against tanks.

Another example would be a chemical—hazardous or otherwise—that may have exceeded its shelf life and that now has to be disposed of. “These types of situations—and the potential risk and liability associated with them—can often be avoided by simply having a strong Environmental Health, Safety & Security (EHS&S) program in place,” says Cobb, “or by having a knowledgeable regulatory compliance member on the team.”

How One Company Overcame its Hazmat Challenges

While working with a large, national customer several years ago, Landstar discovered several issues with the hazmat descriptions listed on the customer’s shipping documentation.

“Because those bills were computer-generated,” says Pace, “we knew that the issues would continue both for us and for other carriers transporting the firm’s hazmat shipments.”

When the customer was alerted about the problem, it questioned Landstar. After all, the company had been “doing it this way for years with no issues,” what could be wrong with that established process? “We explained that federal regulations required that specific information be listed with each hazmat entry on the bill,” Pace recalls, “and that by accepting and moving the load, we’d also be at risk for violations, fines, and potential out-of-service orders during roadside DOT inspections.”

The problem continued, namely because the customer was reluctant to make the necessary corrections. “Landstar capacity providers made the necessary corrections on each shipment, to ensure compliance,” says Pace.

Safety Education is a Must

At Landstar, safety comes first. That's why Landstar developed **M.U.S.T.–Mutual Understanding of Safety Together**—a unique program that brings Landstar representatives and customers together to ensure their freight is delivered safely, on time, damage free and in a professional manner.

This program can be customized specifically to address hazardous materials, allowing a manufacturing customer to participate in the fundamentals directly related to its business.

Through a mutual understanding of each other's perspectives – shipper and carrier – safety awareness can be raised to new heights.

The M.U.S.T. program includes analysis and methodologies to:

- Provide safety statistics to better evaluate carriers
- Help identify proper ways of securing freight, including hazmat
- Eliminate potential accidents at loading and unloading facilities, especially customer or manufacturer locations
- Identify cargo damage causes
- Understand various regulations and best practices for transporting hazmat

And while this process worked, the root cause was not fixed. That was until Pace met with the appropriate customer representative who agreed to review 50+ shipping documents that had been itemized by violation and regulation reference number. Agreeing that there was a problem that needed mitigating, the customer upgraded its computer system while at the same time informing all of its facility managers of the need to comply with hazmat regulations.

"I'll never forget coming in early one morning and finding all of that customers' hazmat shipping descriptions correct and shipping documentation compliant," Pace recalls. "We continue to service this customer, which now understands and appreciates what we're trying to accomplish, which is to protect both them and us from roadside violations. Together we were able to find a solution," Pace added.

Hazmat 101: Steps to Success

For companies that regularly or occasionally transport hazardous materials, maintaining hazmat authority (either with an EHS&S expert or an outside consultant), securing

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—Mike Cobb, Landstar's vice president of safety and compliance

qualified carriers with hazmat certified drivers, and ensuring that only qualified and trained employees have access to any part of the hazmat operation are all "must haves."

Staying abreast of changing regulations is equally as important, as is maintaining constant vigilance over exactly what is being shipped, how it's being shipped, and what entities are handling those shipments.

"Any business that uses, stores, or offers chemicals of any kind, hazardous or otherwise, that doesn't have an EHS&S/regulatory person on staff should consider bringing in a consultant to evaluate their processes and what chemicals

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are being used,” Cobb states. “The risk, liability and exposure are too great to not have a clear understanding of the products they’re handling, and to ensure their processes are both safe and compliant,” Cobb added.

When selecting a carrier, Pace says companies should seek out one that has a hazmat department that offers high levels of service and either meets or exceeds safety and compliance standards. Owner-operators leased to Landstar, for example, are hazmat certified and Landstar is one of the few carriers that requires all of its owner-operators to maintain certification.

For insurance and regulatory reasons, many general commodity carriers have moved away from hauling hazmat over the last few years. This has opened an opportunity for Landstar, but it also means that companies should not assume that all carriers will haul hazmat or that the carriers they select will look after their best interests by ensuring shipments are compliant.

At Landstar, the company utilizes stringent compliance programs that go beyond what state and federal laws require. “Customers should really vet the carriers they’re working with,” Pace advises. “This includes requesting proof of operating authority, permits, safety rating, and years in business providing hazardous materials transportation services.”

Finally, it’s important to note that owner-operators and other drivers have a responsibility to validate that the hazmat shipment they’re transporting is compliant. That includes ensuring packages are properly marked and labeled, free of damage/leaks, shipping paper documentation is compliant, freight is properly secured to prevent relative motion, and that the transport vehicle properly displays hazmat placards.

Types of hazmat trailer equipment used by Landstar

straight truck



van



flatbed



“By taking the few minutes required to check a shipment,” says Pace, “drivers can focus more on driving and less on worrying about violations at roadside inspections and potential fines.”

Compliance is a team effort and customers, carriers and drivers play a major role in ensuring hazmat shipments are transported safely and compliantly. ■

About Landstar

Landstar is a worldwide, asset-light provider of integrated transportation management solutions that delivers safe, specialized transportation services to a broad range of customers by using a network of agents, third-party capacity owners and employees. Companies turn to us for the expertise needed to transport highly regulated freight, complex oversize heavy haul loads, routine truckload shipments, and everything in between. For more information about how Landstar can help move your freight, visit www.landstar.com.

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