



Hazmat 101
The Basics of Hazardous Materials Management
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Executive Summary

Hazardous materials management, including identification, storage, transport and disposal, is an ever-growing responsibility for retailers and manufacturers. Any failure, by any trading partner, to fully comply with existing “hazmat” regulations and requirements poses a potentially serious threat to both commerce and the community. Therefore, it is imperative that all parties conform to the policies and procedures necessary to meet all statutory prescriptions currently in place. Given the complexities and costs related to hazardous materials management, Inmar has developed the expertise required to help trading partners achieve and maintain regulatory compliance.

Specifically, this white paper addresses:

- **Regulatory Environment:** The origins and current state of federal regulations relating to hazardous materials management.
- **Definitions:** Formalized descriptions of waste generators and denotation of material types.
- **Hazardous Materials in the Retail Environment:** A partial, but representative list of consumer goods and products that may be considered hazardous material.
- **Transportation Requirements:** An overview of the regulations regarding transport of hazardous materials.
- **Regulatory Challenges:** Identification of common issues faced by hazardous waste generators.
- **Considerations:** General guidelines for developing a hazmat management program.

Regulatory Environment

While pundits and politicians alike continue to call for a reduction in government regulation to help businesses operate more efficiently, the reality is that, in certain sectors, regulatory controls will remain firmly fixed, evermore complex and costly if violated. No more so is this the case than with hazardous waste management. Most often perceived as primarily a manufacturing issue, hazardous waste management is very much a consideration for retailers as the U.S. Environmental Protection Agency (EPA) has stepped up hazmat code enforcement efforts targeting distribution centers and point-of-sale locations.

Recent efforts by the EPA to ensure compliance, and address non-compliance, with the federal and state statutes governing hazardous waste management have resulted in three retailers receiving well-publicized fines totaling more than \$39 million for failing to comply with new landfill requirements. And, another two retailers were fined more than \$2 million – in just one state – for maintaining expired product in their inventory. (The expired product having become characterized as “hazardous material.”)

Without a thorough understanding of hazmat regulations and the related responsibilities for the management, transport and disposition of hazardous material, trading partners can find themselves very much at risk both physically and financially.

The regulations governing the handling and disposal of hazardous waste are included in the Resource Conservation and Recovery Act (RCRA). Signed into law in 1976, the RCRA comprises the Solid Waste Disposal Act of 1965 and subsequent amendments to the original Act. Included among the more important amendments is the Hazardous and Solid Waste Amendments of 1984 which includes the Hazardous Waste Program – establishing the requirements for controlling hazardous waste from the time it is generated through its ultimate disposal.

Definitions

Hazardous waste is waste that is dangerous or potentially harmful to human health or the environment. Before a material can be classified as a hazardous waste, it must first be a solid waste as defined under RCRA. *However, a solid waste is not necessarily a hazardous waste.* Hazardous wastes can be liquids, solids, gases or sludges. They can be discarded commercial products, e.g. cleaning fluids, pesticides, etc., non-viable consumer commodities or the by-products of manufacturing processes.

By definition, the EPA has determined that some specific wastes are hazardous. Waste that has not been specifically listed as such by the agency may still be considered hazardous waste if it exhibits any one of these four characteristics: ignitability, corrosivity, reactivity or toxicity. The significance for retailers is that any number of products currently on the shelves either exhibit one or more of these hazardous properties in their viable state or have the potential to develop these characteristics over the duration of their life cycle. “Viable” is one stage of the product life cycle outlined below:

Viable: A product is considered viable if it can be liquidated/remarketed, returned with reasonable expectation of credit or donated. Viable products are not damaged, nor are they leaking and are in-date.

Non-Viable: A non-viable product is one that has no value (cannot be sold) or cannot be used for its original intended purpose. This may be due to damage, the presence of a leak or, in some instances, expiration of the “use by” period. *A good example is an aerosol can. If the actuator has been broken and the product cannot be sprayed from the can, it can not used for its original purpose and the product becomes non-viable.*

Waste: A product becomes waste when a decision is made to discard or abandon the product. This is normally after a product is no longer “viable.” At this point, the determination must be made as to whether or not this “non-viable” product is hazardous waste.

Several credentials are needed to handle “viable” and “non-viable” product. With viable product, retailers and manufacturers must identify a service provider who is properly licensed and insured and has the systems in place to comply with applicable state and federal requirements. In the case of non-viable product processing, the provider must be fully capable of meeting the even more stringent requirements regarding registration, recordkeeping, storage, handling and training for all those involved.

Waste Generators

Under RCRA, the waste generator (the entity that creates the waste) is at the very core of the federal “cradle-to-grave” hazardous waste management system. Hazardous waste generators are divided into categories based on the amount of waste they generate in a calendar month. There are three categories of hazardous waste generators as specified by federal statute:

- **Large quantity generators (LQG):** Generating 1,000 kg or more of hazardous waste per calendar month.
- **Small quantity generators (SQG):** Generating between 100 kg and 1,000 kg of hazardous waste per calendar month *and* accumulating less than 6,000 kg of hazardous waste at any time.
- **Conditionally exempt small quantity generators (CESQG):** Generating less than 100 kg of hazardous waste per calendar month *and* accumulating less than 1,000 kg of hazardous waste at any time.

It is important to note that state classifications for waste generators may be different from the federal categories outlined above. For instance, some states classify generators by type of waste rather than by volume generated. Therefore, generators must determine if applicable state regulations differ from federal requirements.

While different regulations apply to each generator category, all generators must determine if their waste is hazardous and must oversee the ultimate disposition of the waste. The RCRA requires generators to ensure and fully document that the hazardous waste they produce is properly identified, managed and treated prior to recycling or disposal. In order to be compliant, generators of waste must make the following determinations:

- Is the waste a solid waste as defined under RCRA?
- Is the waste excluded? Is the waste an EPA-listed hazardous waste?
- Is the waste a characteristic hazardous waste, exhibiting one or more of the four hazardous properties of ignitability, corrosivity, reactivity or toxicity?

The hazardous waste identification process is the crucial first step in the hazardous waste management system. Proper characterization -- correctly determining whether a waste meets the RCRA definition of hazardous waste -- is essential to determining how the waste must be managed and will play a role in determining the generator status (LQG, SQG or CESQG).

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all generators must determine if their waste is hazardous
and must oversee the ultimate disposition of the waste.**

Hazardous Materials Listing

A partial, but representative, list of potentially hazardous materials found in the retail environment.

CLEANING SUPPLIES

Corrosive Acids Toilet Cleaners	Corrosive Solids Toilet Tablets	Corrosive Liquids Bleach	Flammable Aerosols Foam Scrubs
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BEAUTY ESSENTIALS

Flammable Liquids Nail Polish Perfumes Nail Polish Remover	Flammable Solids Waterproof Mascara Some Foundations Some Lipsticks	Flammable Aerosols Hair Spray Sunless Tans	Oxidizing Liquids Hair Color
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HEALTH

Toxic Vitamins* Lice Treatment Dandruff Shampoo	Mercury Liquids Thermometers *containing selenium or chromium	Batteries Glucose Meters Pregnancy Tests	Oxidizing Liquids Hydrogen Peroxide
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ENTERTAINMENT

Batteries Toys	Lead Computers
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HOUSEHOLD

Lead / Mercury Light Bulbs	Aerosols w/ Batteries Air Fresheners
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AUTOMOTIVE

Flammable Liquids Car Wash Fuel Injectors	Flammable Aerosols Tire Cleaners	Toxic Liquids Windshield Wiper Fluid Other Auto Fluids
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HARDWARE

Toxic Weed Killer	Flammable Aerosols Insect Sprays Spray Paint Lubricants	Flammable Liquids Paint Remover/Thinners Paint Varnish, Stains, Sealants	Mercury Liquids Thermometers
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FOOD

Non-Flammable Aerosols Cheese Spreads Dessert Toppings	Flammable Aerosols Non-stick Cooking Spray
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Transportation Requirements

While the considerations and requirements regarding characterization, management, etc. originate with the EPA, it is the U.S. Department of Transportation’s Pipeline and Hazardous Materials Safety Administration (PHMSA) that regulates the transport of hazardous materials; hazardous waste being a subset of hazardous materials. Under the Federal Hazardous Materials Transportation Law, transporters of certain quantities and types of hazardous materials, including hazardous wastes, are required to file an annual registration statement with the Department of Transportation (DOT) and to pay a fee.

Regulatory and Compliance Environment					
DEA / PDMA	DOT	EPA	FDA	OSHA	USDA
Controlled Substances & Listed Chemicals	Training SOPs Record keeping	Waste Characterization Destruction Reporting Licensing Training SOPs Record keeping Vendor Audits	Reporting Training SOPs Record keeping Food Safety Food Security Registration	Reporting Training SOPs Record keeping	Food Safety Food Security Licensing Reporting Training SOPs Record keeping
Reporting Security Licensing Destruction Pedigree Training SOPs Record keeping					

The result of this “overlapping oversight” is differences among agencies regarding regulations for the same product or material. For instance, while the DOT considers an aerosol spray with a cap to be a “hazardous material,” the EPA considers the item as still a “product.” Additionally, DOT regulations prohibit shipment of an aerosol spray without a cap, or if it is leaking.

At the same time, a damaged aerosol container is, according to the EPA, a “hazardous item,” but not “hazardous waste.” The result of this inconsistency is that, if the cap is broken in transit, the aerosol spray cannot ship and it must be managed as hazardous material at the point of generation

The responsibilities of those transporting hazardous waste are extensive. Hazardous waste cannot be shipped to a liquidation site, salvaged or be reversed to distributors. It must also be properly labeled, packaged and stored. And, it must be manifested and transported in accordance with all applicable DOT regulations.

Requirements for transporters of hazardous waste include, but are not limited to:

- Determining the hazard class of a hazardous material
- Employing appropriate hazardous materials packaging
- Properly labeling a package to indicate that it contains a hazardous material
- Preparing the required manifest
- Providing and maintaining emergency response information
- Certifying that hazardous material is in proper condition for transportation
- Segregating hazardous materials from incompatible cargo
- Affixing placards to a freight container or transport vehicle to indicate that it contains hazardous material

Federal hazmat law also mandates that employers develop appropriate training programs for employees and implement plans to address packaging, handling and security risks related to the transportation of hazardous materials in commerce.

As with the EPA, DOT is demonstrating similar zeal in its enforcement efforts. The PHMSA recently announced that agency inspectors will now be able to investigate shipments of hazardous materials during transport and take tougher enforcement action against companies shipping in an unsafe manner. That action, when taken in response to a significant safety problem with a package in transit, includes ordering restrictions, bans or immediate recalls of faulty packages.

These regulatory requirements make it imperative that retailers, as well as manufacturers, have in place the procedures and processes necessary to ensure the proper handling of returns that could include items characterized as hazardous material.

Regulatory Challenges

Those trading partners who have not fully addressed their responsibilities as hazardous waste generators may experience the more common regulatory “challenges” including:

- Insufficient storage space and containment capacity
- Inadequate fire suppression system
- Improper segregation
- Spills
- Improper classification, transportation and disposal of waste materials
- Lack of emergency preparedness and response procedures
- Failure to complete training at the store level
- Incomplete manifest retention/filing
- Inaccurate record keeping

Considerations

Retailers and manufacturers wishing to avoid or minimize these challenges must establish a program targeted at prevention as well as response. These programs should start with employee training for all those who “touch” these materials. Training should be updated continuously in order for employees to remain current on the appropriate regulations and guidelines. Training and other program materials must be kept up-to-date as well and be available to all affected employees. The program must be managed closely with all compliance reporting completed and filed as required.

A well-planned and executed compliance program has many positive benefits:

- Protects product brand and store image
- Enhances/creates sustainability programs and green initiatives
- Protects the environment and promotes employee safety
- Contributes to a fiscally responsible strategy for the company
- Mitigates the risk of citations and fines resulting from non-compliance

The regulations governing the proper handling of product – at all stages of the life cycle – continue to be amended as new discoveries are made, environmental and public health concerns grow and media attention intensifies. The increasing scrutiny, enhanced enforcement of existing statutes and the resultant fines, bans and recalls are creating greater potential risk for all trading partners and further complicating an already constricted business environment. Managing this risk effectively while protecting brand image is placing a significant additional burden on trading partner resources committed to meeting their core responsibility -- getting product into consumers' hands.

Even as supporters lobby for a lessening of restrictions, there is no indication that the emerging challenge will be reversing. Therefore, the proper interpretation and correct application of regulatory compliance standards related to hazardous materials management is “non-negotiable” for both

retailers and manufacturers. The proper waste characterization of non-viable product, its effective removal from the supply chain – and its appropriate disposition – requires expert knowledge, resource commitment and focused attention. Ultimately, in order for trading partners to ensure their compliance, protect their brands and mitigate risk, they will need to collaborate closely with one another and cooperatively engage with other qualified partners who can deliver the information, provide the insight and manage the processes required by law.