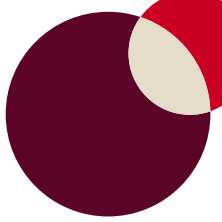


Key Considerations for Retail Hazardous Materials Management Programs

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August 2024

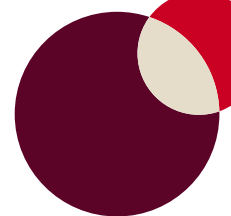




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Introduction

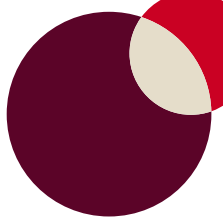
Managing hazardous materials (hazmat) is complicated. Retailers must remain in compliance with continuously evolving rules, regulations and ordinances. One way retailers can stay up-to-date or ahead of the dynamic regulatory landscape is by implementing a robust hazmat management program.

A hazmat management program should address all aspects of hazmat handling, including:

- Transportation
- Storage
- Disposal

This white paper aims to assist retailers in understanding and implementing effective hazmat management programs, including how to take all applicable exemptions to reduce the costs of their programs.

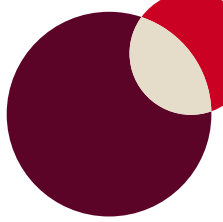




Common exceptions to hazmat regulations

- **Limited quantity** exceptions provide relief from many requirements when shipping small amounts of certain dangerous goods, including marking, labeling, shipping papers for ground transport, placarding and specification packaging.¹
- **Retail products containing ethanol** are excepted from numerous requirements of the Hazardous Materials Regulations (HMR) provided their ethanol concentration does not exceed 70% and their packaging is within specified limits.²
- **Universal waste** regulations provide alternative standards for managing certain types of hazardous waste generated by a wide variety of industries. Universal wastes are excluded from several hazardous waste requirements, such as those pertaining to hazardous waste generator status, land disposal by generators of hazardous waste, and hazardous waste manifests.³





Establishing and maintaining hazmat management programs

Establishing and maintaining programs for managing hazmat is important for retailers. Retailers across North America are increasingly subject to complex challenges arising from supply chain and logistical issues. Having a hazmat management program in place helps retailers adapt and respond to such challenges, which are often beyond their control.

Creating an effective hazmat management a program requires significant effort in terms of:

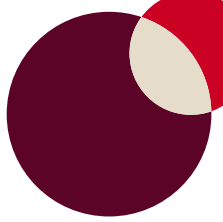
- Data sourcing
- Employee training
- Process development

Additionally, proper integration of in-house and third-party technologies and systems to support and enhance processes and procedures related to hazmat management is critical.

Retailers who successfully implement effective hazmat management programs gain several benefits:

- ☒ Risk mitigation
- ☒ Mitigation of environmental safety hazards
- ☒ Regulatory compliance
- ☒ Brand protection





Hazmat definitions and regulations

As defined by the U.S. Department of Transportation (DOT), a hazardous material is any substance determined to be capable of posing an unreasonable risk to health, safety and property when transported in commerce.

Retailers sell, transport and handle many products considered hazmat, such as:



Aerosols



Lithium batteries



Pesticides



Cleaners



Paints



Smoke detectors



Fire extinguishers



Perfumes



Swimming pool chemicals



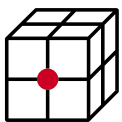
Lighters and matches

Depending on which step in hazmat management is being referred to, different regulations, codes and/or standards will apply. For example:



Transportation:

Hazardous Materials Regulations⁴



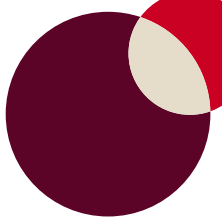
Storage:

National Fire Protection Association (NFPA)⁵



Disposal:

Resource Conservation and Recovery Act (RCRA)⁶



Transporting hazmat

Both U.S. and international rules and regulations apply to any organization involved in the transport of hazmat for commercial purposes, which includes retailers.

Transportation rules and regulations apply to any retailer that moves hazmat:

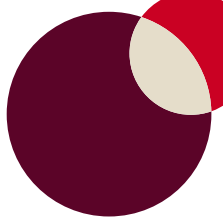
- Between distribution centers and stores
- Directly to consumers
- Via reverse logistics for returns and exchanges

In the U.S., retailers must adhere to the rules and regulations for hazmat transport put forward by the DOT. Retailers must also comply with multiple international codes and standards when shipping hazmat.

For example, here are four bodies that oversee shipping and some of their codes and standards:

U.S. Department of Transportation (DOT)	> Hazardous Materials Regulations (HMR)
International Airline Transport Association (IATA)	> Dangerous Goods Regulations (DGR)
International Maritime Organization (IMO)	> International Maritime Dangerous Goods (IMDG) Code
Transport Canada	> Transportation of Dangerous Goods (TDG)

Of note is that the HMR sets forth mandatory training requirements for all employers and employees involved in the transportation of hazmat.⁷ The training requirements include recordkeeping, frequency of training and who is/isn't qualified to deliver training.



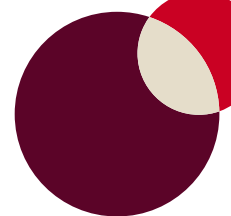
Storing hazmat

Retailers are obligated to properly store products with hazmat components in their warehouses and distribution centers according to fire codes established by the National Fire Protection Association (NFPA). Warehouse and distribution center staff must undergo training on the proper storage of products, including hazmat.

In general, compliance with hazmat rules and regulations involves meeting the following responsibilities:

- Registration and classification of hazmat
- Adequate employee training
- Packaging and labeling requirements
- Maintaining up-to-date shipping and emergency response data
- Shipping and receiving policies
- Incident reporting



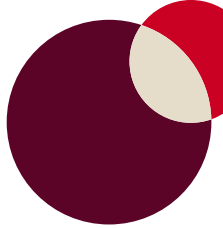


Disposing of hazmat

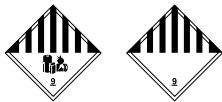
Any and all hazmat has the potential to become waste. Once hazmat becomes waste, its disposal is subject to the rules and regulations under RCRA and corresponding state laws.

To start, retailers must classify hazmat. Once hazmat has been classified, retailers can then determine proper disposal requirements for compliance purposes. There are nine classes of hazmat. Within the classes are division(s):

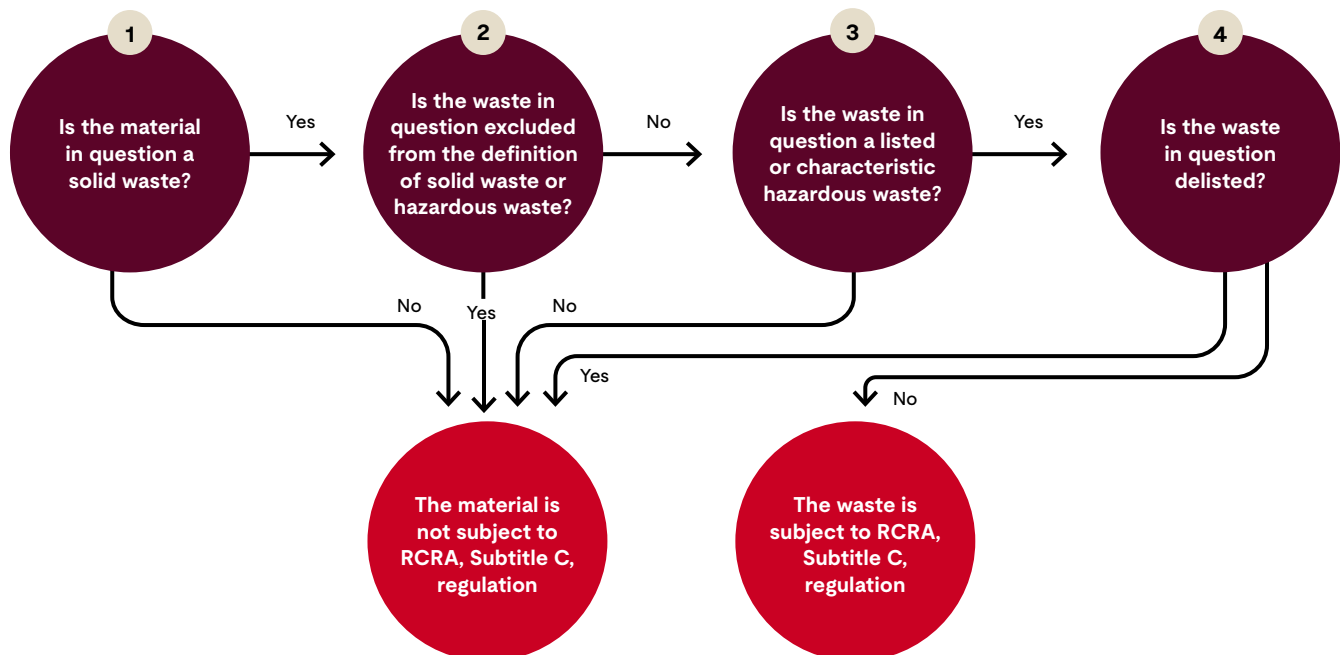
Class number	Class name	Division(s)	Labels
1	Explosives	1.1, Mass explosion hazard 1.2, Projection hazard 1.3, Fire hazard 1.4, Minor explosion hazard 1.5, Very insensitive explosives 1.6, Insensitive articles that don't have a mass explosion hazard	
2	Gases	2.1, Flammable gas 2.2, Non-flammable gas 2.3, Poison gas	
3	Flammable liquid and combustible liquid		
4	Flammable solid, spontaneously combustible, and dangerous when wet	4.1, Flammable solid 4.2, Spontaneously combustible material 4.3, Dangerous when wet	
5	Oxidizer and organic peroxide	5.1, Oxidizer 5.2, Organic peroxide	
6	Poison (toxic) and poison inhalation hazard	6.1, Poisonous inhalation hazard 6.2, Infectious substance	

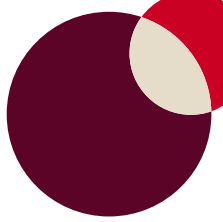


Disposing of hazmat (continued)

Class number	Class name	Division(s)	Labels
7	Radioactive		
8	Corrosive		
9	Miscellaneous		

Next, retailers must identify hazardous waste. Four yes/no questions must be answered, and the answers ultimately determine the retailer's course of action for hazmat disposal.



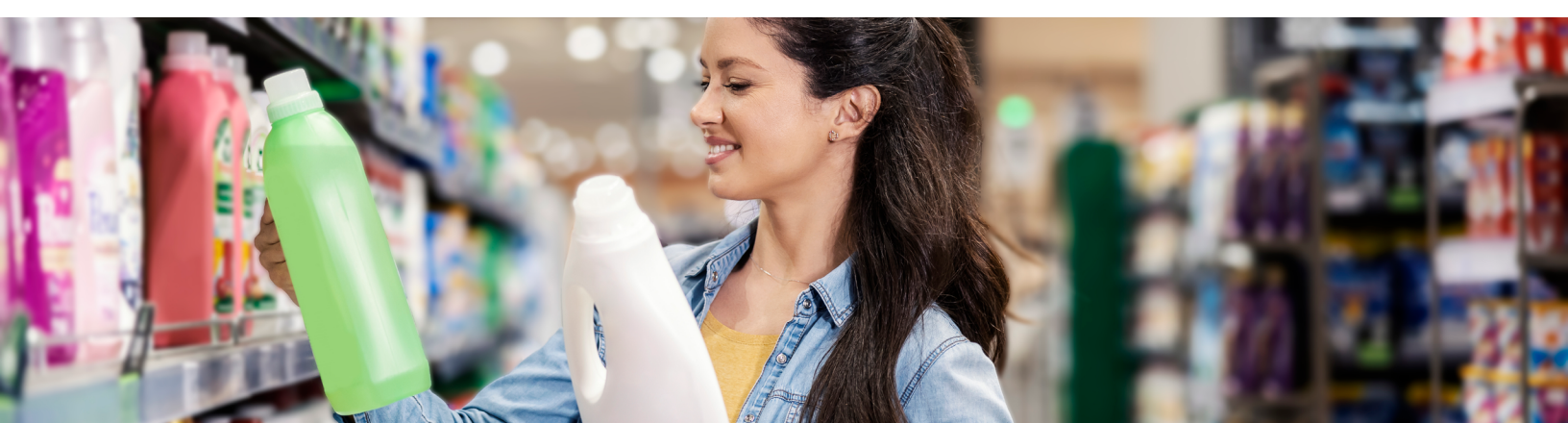


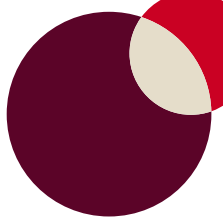
Key drivers of increased focus on hazmat

Several external factors have raised retailers' awareness of their hazmat-related obligations:

- 1 An increasing number of consumer products include substances and ingredients associated with hazmat safety risks. For example, the growing prevalence of [lithium-ion batteries in consumer electronics](#) has been linked to increased fire risks in recent years.
- 2 Regulators, including the DOT, have taken more interest in verifying retailers' and other transporters' compliance with hazmat requirements. Regulators' more rigorous surveillance can raise the risk of violations and fines if a retailer lacks adequate hazmat-related processes and documentation.
- 3 Many retailers have had to rely more frequently on third-party shipping and transportation providers instead of maintaining their own shipping fleets, resulting in more complicated logistics. Retailers must have a proper hazmat program to generate the information and paperwork that third-party providers need to safely and legally transport products.

When hazmat information is insufficient or lacking, logistics providers may go so far as to refuse shipment.



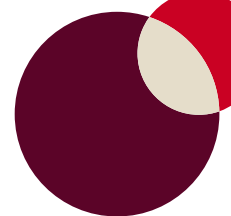


Elements of a retail hazmat management program

Although retailers may recognize both the need and the value of establishing a hazmat transportation program, they may hesitate to tackle such a complex project.

- A firm must determine which departments and personnel will be responsible for setting up and overseeing their hazmat program.
- Program managers must establish processes and accountability across multiple teams and departments as well as manage the ongoing collection, validation and dissemination of critical data across their organization.



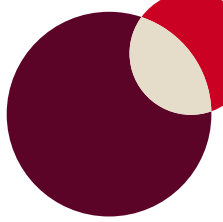


Six steps to a hazmat management program

The high-level road map below can guide retailers in setting up or expanding their hazmat management programs with the related challenges in mind:

- 1  Identify who in the organization will be responsible for managing the program.
- 2  Obtain all necessary data for identifying any and all hazmat in the organization's products and acquire the proper tools and technologies to collect that data.
- 3  Identify which departments and teams — e.g., retail, distribution, transportation — will be impacted by or play a role in the hazmat program.
- 4  Perform an audit to fully understand the program being established and to ascertain that the program's design does indeed meet the firm's requirements.
- 5  Involve program managers to modify and fine-tune processes based on their personal knowledge and experience and the hazmat data compiled.
- 6  Develop employee training and education related to the program, processes and role-based responsibilities as required.

The most crucial component of an effective hazmat management program is accurate and accessible data. In essence, retailers need to know which processes they need to build around and which products are subject to regulation as hazmat. Only first-rate data collection and analysis tools can facilitate that fundamental requirement.

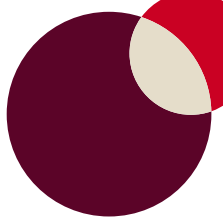


UL Solutions tools to support hazmat management programs

Retail hazmat transportation management programs require tools and software robust enough to support cross-departmental data, compliance and training processes. UL Solutions has an established track record supporting all aspects of retailers' hazmat transportation, storage and product disposal projects via the following software offerings:

ULTRUS™ software from UL Solutions helps retailers collect, validate and assess product data as well as real-time employee access to hazardous material handling to manage risk and maintain regulatory compliance at local, state and federal levels with the WERCSmart® digital platform. WERCSmart generates verified safety and compliance data for more than 1.7 million retail products across more than 20,000 brands.





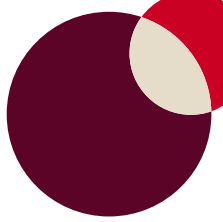
In addition, WERCSmart allows hazmat program managers to balance regulatory compliance with cost-effectiveness via current regulatory classifications of hazmat. It offers accurate insights into which products and materials fall under hazmat regulatory requirements and which do not, and it helps retailers avoid unnecessary compliance-related costs.

On-demand data on product safety, compliance and product disposal is also accessible for retail employees through the WERCSmart ItemScan mobile application.

WERCSmart Retail Product Compliance, WERCSmart ItemScan and related offerings are now part of ULTRUS software, which brings together digital products from UL Solutions to help customers address interconnected regulatory, supply chain and sustainability challenges.

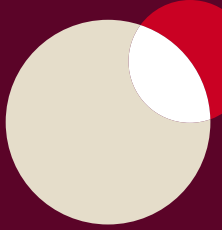
As retailers face greater pressure to assess and manage hazmat obligations and risks, their efforts to establish compliant and cost-effective transportation, storage and disposal programs highlight the need for proper tools and technologies to ensure accurate and actionable product data.

For more information on how UL Solutions works with retailers to set up and maintain scalable hazmat management programs across retail ecosystems, visit UL.com/WERCSmart or email us at UL.SupplyChain@UL.com



Sources

1. 49 CFR 171.8. (2005). [Definitions and abbreviations](#). Retrieved April 26, 2024.
2. 49 CFR 173.150(g). (2024). [Limited quantities of retail products containing ethyl alcohol](#). Retrieved April 26, 2024.
3. 40 CFR 273. (2024). [Standards for Universal Waste Management](#). Retrieved April 26, 2024.
4. U.S. Department of Transportation. (2017). [Hazardous Materials Regulations](#). Retrieved September 1, 2023.
5. National Fire Protection Association. (n.d.). [NFPA](#). Retrieved September 1, 2023.
6. United States Environmental Protection Agency. (2023). [Resource Conservation and Recovery Act](#). Retrieved September 1, 2023.
7. U.S. Department of Transportation. (n.d.). [Hazmat Transportation Training Requirements](#). Retrieved September 7, 2023.



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