



U.S. Department
of Transportation
**Pipeline and
Hazardous Materials
Safety Administration**



SAFE RETURNS

Understanding Hazmat Returns and the Reverse Logistics Exception



Disclaimer: This guide is intended only to provide information to the public regarding best practices and existing requirements under the Hazardous Materials Regulations governing reverse logistics. This guide does not have the force and effect of law and is not meant to bind the public in any way.

TABLE OF CONTENTS

Introduction	04
Shipping Hazardous Materials	05
Reverse Logistics and the HMR.	06
Requirements for Shipments Under the Reverse Logistics Exception.	06
Non-Private Carriers	06
Private Carriers	07
Alternate Training Requirements	08



DO YOU DEAL WITH HAZMAT RETURNS?

Many consumer products are classified as, or contain, hazardous materials (hazmat), due to the risks they pose to health, safety, and property when in transportation. The Hazardous Materials Regulations (HMR; [49 CFR Parts 171 – 180](#)) set requirements for the transportation of these materials in commerce, including classification, packaging, hazard communication, training, and more. Hazardous materials pose a unique challenge in reverse logistics, as consumers, retail employees, and others in the returns process may lack the proper training and awareness to package and ship these materials safely.

This brochure is meant to help those within the reverse logistics circular economy understand how the HMR pertains to their industry. The first section provides an overview of the requirements for hazmat shipments, including limited quantity exceptions. The second section defines “reverse logistics” according to the HMR, and explains the exceptions available, including alternate training requirements.

DID YOU KNOW?

Some items may become more hazardous by use. For example, used equipment powered by internal combustion engines may contain residual fuel when returned, making them more hazardous than when they were new. Other items, like damaged lithium cells and batteries, may have new requirements for shipment because they are damaged, rendering the original packaging insufficient.

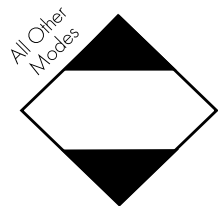
SHIPPING HAZARDOUS MATERIALS

Shippers are responsible for properly identifying, classifying, and describing the hazardous materials that they ship (§ 173.22). Determining the correct hazard classification is the most important part of shipping hazmat. All other transportation requirements, including packaging, markings, labels, and shipping paper requirements, will be based on the hazard classification of a product.

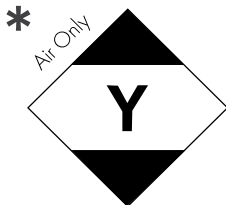
The Hazardous Materials Table (HMT), found in § 172.101, lists the basic description for hazardous materials in alphabetical order by chemical name. The basic description consists of a four-digit UN identification number and proper shipping name, as well as hazard class and packing group. Entries include references to the appropriate packaging sections, hazard label codes, and quantity limitations. The HMT also contains special provisions and exceptions. Note that the HMT does not list materials by brand or common name. If you are unsure of your material's proper shipping name, contact the manufacturer or check Section 14 of the product's Safety Data Sheet (SDS) – usually available online or by request from the manufacturer.

DOES THE HMR APPLY TO YOU?

The HMR applies to the transportation of hazardous materials in interstate, intrastate and foreign commerce by aircraft, rail car, vessel, and motor vehicle. Visit § 171.1 for more on applicability!



Retail employees dealing with returns may identify that an incoming shipment contains hazmat due to the marks, labels, and/or shipping papers included with the package. A common example of this for consumer products is the limited quantity mark (§ 172.315, pictured to the left). The HMR authorizes specific hazard communication and/or packaging exceptions for certain hazardous materials when shipped under a relatively small, maximum amount, called a “limited quantity” (§ 171.8). Packages shipped as a limited quantity must display the limited quantity marking that corresponds to the mode of shipment (§ 172.315).



DO YOU PROCESS RETURN SHIPMENTS OF LITHIUM CELLS AND BATTERIES?

Lithium cells and batteries are not eligible for the reverse logistics exception, due to the risks these batteries pose in transportation (see § 173.185). Visit PHMSA's "[Lithium Battery Guide for Shippers](#)" for assistance determining how to package and ship batteries, and our "[Understanding the Risks of Damaged, Defective, or Recalled \(DDR\) Lithium Batteries](#)" for help identifying and shipping DDR batteries.



*Note: Limited quantity packages authorized and prepared for transportation by aircraft may not be shipped using the reverse logistics exception described further in this guide (see § 171.8).

REVERSE LOGISTICS AND THE HMR

The HMR provides further exceptions for certain reverse logistics shipments, including alternate training and hazard communication options. Under the HMR, reverse logistics is defined as:

“The process of offering for transport or transporting by motor vehicle goods from a retail store for return to its manufacturer, supplier, or distribution facility for the purpose of capturing value (e.g., to receive manufacturer’s credit), recall, replacement, recycling, or similar reason.” (§ [171.8](#))

To qualify for reverse logistics exceptions, your shipment must meet this definition (§ [173.157\(a\)](#)). Note that this does not include materials meeting the definition of a *hazardous waste* (§ [171.8](#)). Likewise, materials authorized for shipment according to a US DOT Special Permit as defined in § [171.8](#) must be shipped according to the terms of the special permit.

Shipments of hazardous materials as reverse logistics are only authorized by highway (§ [171.8](#)). They are not eligible for shipment by any other mode (i.e., air, vessel, or rail). This means that no reverse logistics shipments can be transported by air, which eliminates overnight or expedited shipping options by air. If the shipment needs to be transported by air, the shipper must ship the material as a fully regulated shipment or under another exception authorized for air transportation.

REQUIREMENTS FOR SHIPMENTS UNDER THE REVERSE LOGISTICS EXCEPTION

Shippers will have different requirements depending on if they are offering packages to a non-private carrier (i.e., a common carrier), or a private carrier (i.e., contract carrier). If offering via US Postal Service (USPS), be sure to follow all USPS policies, as they are the sole source for regulations regarding mail.

NON-PRIVATE CARRIERS

Hazardous materials offered for transport or transported by non-private carrier, must be both authorized for limited quantity provisions **AND** explicitly authorized for reverse logistics transportation under their applicable limited quantities section. Except for the alternative training provisions listed below, all hazardous materials must otherwise meet the requirements for a limited quantity shipment, including meeting the definition listed in § [171.8](#) (see above).

To determine whether a commodity is eligible for limited quantity exceptions, refer to Column 8A of the Hazardous Materials Table (§ [172.101](#)). This will direct you to the appropriate packaging section, based on the material’s hazard class, with specific quantity and packaging requirements. If “none” is listed, that means the material is not eligible for limited quantity exceptions.

The following table lists the hazard classes and divisions considered eligible for reverse logistics exceptions, as well as the location of their limited quantities section. Materials in other hazard classes or divisions are **not eligible** for reverse logistics exceptions.

ARE YOU A CARRIER?

Remember, all hazardous materials must also comply with the segregation requirements as required in § [177.848](#), and all shipments are subject to the incident reporting requirements in § [171.15](#).

HAZARD CLASS/ DIVISION	DESCRIPTION	DETAILS	LIMITED QUANTITY PROVISION
1.4S	Explosives, minor explosion hazard	Ammunition-related	173.63(b)
2.1	Flammable gas		173.306
2.2	Non-flammable, non-poisonous gas		173.306
3	Flammable and combustible liquid		173.150(b)
4.1	Flammable solid	Excludes self-reactive materials	173.151(b)
5.1	Oxidizers	PG II, III only	173.152(b)
6.1	Poisonous material	Excludes poison-by-inhalation materials; PG II, III only	173.153(b)
8	Corrosive material	PG II, III only	173.154(b)
9	Miscellaneous hazmat	Excludes lithium batteries	173.155(b)

PRIVATE CARRIERS

Hazardous materials offered for transport or transported by private carrier are authorized if they meet the requirements for non-private carriers (listed above), or are subject to the following (§ [173.157\(c\)](#)):

- **Division 1.4G consumer fireworks:** must be transported in accordance with § [173.65](#).
- **Division 1.4G or 1.4S fireworks, Division 1.4G ammunition, or Division 1.4G or 1.4S flares sold in retail facilities:** shipments are limited to 30 kg (66 pounds) per package. Explosive materials subject to an approval must meet the terms of the approval, including required packaging.
- **Flammable liquid-powered equipment:** The fuel tank and fuel lines of equipment powered by an internal combustion engine must be in the closed position. All fuel tank caps or closures must be securely in place.
- **Flammable gas-powered equipment:** A combustion engine fuel or other device using flammable gas fuel (such as camping equipment, lighting devices, and torch kits) must have the flammable gas source disconnected, and all shut-off devices in the closed position.
- **Division 2.1 or 2.2 compressed gases, weighing less than 66 pounds and sold as retail products:** a cylinder or aerosol container may be assumed to meet the definition of a Division 2.1 or 2.2 material, respectively, even if the exact pressure is unknown.

For these shipments made by private carrier, the marking “REVERSE LOGISTICS—HIGHWAY TRANSPORT ONLY—UNDER [49 CFR 173.157](#)” may be used as an alternative to the limited quantity marking (see § [172.301\(a\)\(1\)](#) for marking size requirements).

ALTERNATE TRAINING REQUIREMENTS

Generally, the HMR requires that all hazmat employees* receive training, including anyone who directly affects hazardous materials transportation safety in the course of employment (§ [172.704](#)). This must include, at minimum, general awareness, function-specific, safety, and security awareness training.



The HMR reverse logistics provisions provide alternate training requirements, as described below (§ [173.157\(e\)](#)).

Any person preparing a reverse logistics shipment (that is, from the retail store to the supplier, manufacturer, or distributor) must have **clear instructions** for preparing the shipment. Instructions should include information on proper classification, packaging, marking, offering, and transportation. These instructions must be provided by the supplier, manufacturer, or distributor, or via hazmat training (per § [172.704](#)).

Employers who do not provide training detailed under § [172.704](#) must, pursuant to (§ [173.157\(e\)](#)):

- Identify the hazardous materials subject to the reverse logistics provisions
- Verify compliance with the conditions and limitations in the HMR
- Ensure that clear instructions are provided by the manufacturer, supplier, or distributor associated with product's origination or destination, and that these instructions are known and accessible to the employee at the time they are preparing the shipment
- Document that employees are familiar with the requirements for reverse logistics shipments, as well as the specific return instructions for the products offered. Documentation must be retained while the employee is employed and 60-days thereafter, or per the recordkeeping requirements under § [172.704\(d\)](#).

* See § [171.8](#) for the definition of “hazmat employee”



For additional information contact:
The Hazardous Materials Info Center

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