HANDLING HAZARDOUS MATERIALS—INTERMODAL GATE OPERATIONS

Recommended Practice
RP-854

Adopted: 2018

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1.0 SCOPE

1.1 This document should be interpreted and used as general guidelines. For further information, consult the appropriate regulations.

1.2 The Association of American Railroads (AAR), the Bureau of Explosives (BOE), and the AAR Hazardous Materials Committee are not responsible for any omissions or errors found in this document.

2.0 INTRODUCTION

2.1 Policy

2.1.1 Gate personnel (railroad employees and contractors) must comply with these instructions when handling trailers/containers (both freight and tank containers) transporting hazardous materials during intermodal gate operations. These instructions describe how gate personnel do their job safely and in compliance with federal and international regulations including the following:

- U. S. Department of Transportation’s (DOT) Hazardous Materials Regulations (49 CFR 171-180)\(^1\)
- International Maritime Dangerous Goods Code (IMDG code)
- Canadian Transportation of Dangerous Goods Regulations (TDGR)

2.1.2 DOT regulates rail transportation in the United States through the Federal Railroad Administration (FRA).

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\(^1\) These regulations are also published in Bureau of Explosives Tariff No. BOE–6000.
2.2 Responsibilities of Gate Personnel
In addition to their normal duties, gate personnel (railroad employees or contractors) must take the following actions when accepting or releasing trailers/containers transporting hazardous materials:

2.2.1 Recognize trailers/containers transporting hazardous materials (reference paragraph 4.0)

2.2.2 Accept trailers/containers transporting hazardous materials that are properly prepared for rail transportation; reject trailers/containers transporting hazardous materials that are not properly prepared.

<table>
<thead>
<tr>
<th>Required Tasks</th>
<th>Paragraph Reference</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Verify availability of required shipping documents (billing)</td>
<td>5.0</td>
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<tr>
<td>2. Verify that shipping documents have appropriate shipping description entries</td>
<td>5.0</td>
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<tr>
<td>3. Verify that trailers/containers transporting hazardous materials are not leaking</td>
<td>6.0</td>
</tr>
<tr>
<td>4. Verify that trailers/containers transporting hazardous materials are properly placarded</td>
<td>7.0</td>
</tr>
<tr>
<td>5. Verify that trailers/containers transporting hazardous materials are properly marked</td>
<td>8.0</td>
</tr>
</tbody>
</table>

2.2.3 Release trailers/containers transporting hazardous materials that are properly prepared for transportation by highway or water; do not release trailers/containers transporting hazardous materials that are not properly prepared.

<table>
<thead>
<tr>
<th>Required Tasks</th>
<th>Paragraph Reference</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Verify availability of required shipping documents (billing)</td>
<td>5.0</td>
</tr>
<tr>
<td>2. Obtain the shipping documents and verify that they have appropriate shipping description entries</td>
<td>5.0</td>
</tr>
<tr>
<td>3. Offer the drayman the shipping documents and, when requested, provide emergency response information</td>
<td>5.0</td>
</tr>
<tr>
<td>4. Verify that trailers/containers transporting hazardous materials are not leaking</td>
<td>6.0</td>
</tr>
<tr>
<td>5. Verify that trailers/containers transporting hazardous materials are properly placarded</td>
<td>7.0</td>
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<tr>
<td>6. Verify that trailers/containers transporting hazardous materials are properly marked</td>
<td>8.0</td>
</tr>
</tbody>
</table>

2.2.4 Take initial actions at releases or potential releases of hazardous materials (reference paragraph 9.0)

2.3 Training Requirements

2.3.1 Gate personnel (railroad employees and contractors) must be trained and tested in an appropriate manner in the regulations within 90 days of being assigned to a job involving hazardous material and once every 3 years thereafter. Training must include the following:

- General awareness/familiarization training
- Function-specific training
- Safety training
- Security awareness training and in-depth security training, as applicable

2.3.2 New gate personnel (employees and contractors) may work under direct supervision of a trained employee or contractor for the initial 90 day period.
2.4 Safety Equipment to be Worn
Gate personnel (railroad employees and contractors) making inspections of intermodal shipments of hazardous materials must wear the following personal protective equipment or else comply with the applicable company personal protection equipment (PPE) policy:

- Hard hat
- Gloves
- Safety glasses/prescription glasses with side shields
- Reflectorized vest
- Footwear that has a definite heel and that covers the ankle (no gym shoes, sandals, thin-soled shoes, or high heels)

3.0 GENERAL

3.1 General Requirements
No person may offer, accept, or transport a hazardous material in commerce unless that material is properly classed, described, packaged, marked, labeled, and placarded and is in proper condition for transportation according to DOT regulations and international regulations.

3.1.1 DOT regulates the transportation of hazardous material. DOT’s regulations are found in the Hazardous Materials Regulations (49 CFR 171–180). These regulations are designed to do the following:

- Prevent accidents involving hazardous material
- Minimize the impact of accidents that do occur.

3.1.2 DOT’s regulations explain the requirements for the following:

- Properly classifying, describing, packaging, marking, labeling, placarding, and preparing hazardous material shipments for transportation
- Handling and transporting hazardous material shipments in commerce
- Reporting unintentional releases of hazardous material
- Training employees involved in the transportation of hazardous materials

Note: Railroads publish information on restrictions that they impose against the acceptance, delivery, or transportation of hazardous materials. Refer to “Intermodal Restrictions for Hazardous Materials” found in the current issue of Bureau of Explosives Tariff No. BOE-6000. (Note: As required by 49 CFR 174.20(b), railroads must publish information on restrictions that they may impose.)

3.2 Hazardous Materials

3.2.1 Hazardous materials are defined as “a substance or material that the Secretary of Transportation has determined to be capable of posing an unreasonable risk to health, safety, and property when transported in commerce.”

3.2.2 The term “hazardous material” includes hazardous substances, hazardous wastes, elevated temperature materials, and marine pollutants.
3.3 Classifying Hazardous Materials

Hazardous materials are classified according to their chemical and/or physical properties. There are nine numeric hazard classes, some of which are divided into divisions, and two worded hazard classes. A hazardous material is assigned to only one primary hazard class/division, even if it meets the definition of more than one hazard class/division. Table 3.1 lists the hazard classes and divisions.

Table 3.1  Hazard classes and divisions (reference Fig. 7.1)

<table>
<thead>
<tr>
<th>Numbered Hazard Classes and Divisions</th>
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<tr>
<td>1—Explosives</td>
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<td>1.1—Explosive with mass explosion hazard</td>
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<td>1.2—Explosive with projection hazard</td>
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<td>1.3—Explosive with predominantly fire hazard</td>
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<td>1.4—Explosive with no significant blast hazard</td>
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<td>1.5—Very insensitive explosive; blasting agent</td>
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<td>1.6—Extremely insensitive detonating substance</td>
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<tr>
<td>2—Gases</td>
</tr>
<tr>
<td>2.1—Flammable gas</td>
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<tr>
<td>2.2—Nonflammable, nonpoisonous (nontoxic) compressed gas</td>
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<tr>
<td>2.3—Gas poisonous (toxic) by inhalation</td>
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<tr>
<td>3—Flammable Liquids</td>
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<tr>
<td>4—Flammable Solids and Reactive Solids/Liquids</td>
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<tr>
<td>4.1—Flammable solid</td>
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<tr>
<td>4.2—Spontaneously combustible material</td>
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<tr>
<td>4.3—Dangerous when wet material</td>
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<tr>
<td>5—Oxidizers and Organic Peroxides</td>
</tr>
<tr>
<td>5.1—Oxidizer</td>
</tr>
<tr>
<td>5.2—Organic peroxide</td>
</tr>
<tr>
<td>6—Poisonous (Toxic) Materials and Infectious Substances</td>
</tr>
<tr>
<td>6.1—Poisonous (toxic) material</td>
</tr>
<tr>
<td>6.2—Infectious substance</td>
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<td>7—Radioactive Materials</td>
</tr>
<tr>
<td>8—Corrosive Materials</td>
</tr>
<tr>
<td>9—Miscellaneous Hazardous Materials</td>
</tr>
</tbody>
</table>

Worded Hazard Classes (U.S. only)

- Combustible Liquids (regulated in bulk packages; also regulated in non-bulk packages if a hazardous substance, hazardous waste, or marine pollutant)
- ORM-D (Other Regulated Materials—D)—exempt from placarding and labeling in rail transportation, but subject to packaging, marking, and possibly shipping document requirements

3.4 Exceptions for U.S. Government Material

Department of Energy (DOE) and Department of Defense (DOD) shipments made for the purpose of national security and accompanied by escorts (personnel specifically designated by or under the authority of DOD or DOE) are not subject to DOT regulations or to the instructions in this document.
3.5 International Shipments
Trailers/containers transporting hazardous materials internationally (including shipments to and from Canada and Mexico), moving with proper international documents and international placards, may be transported in the U.S. under the specific regulations (IMDG code, TDGR) from origin to destination as long as they are in complete compliance with the specific regulations and meet DOT restrictions.

4.0 RECOGNIZING HAZARDOUS MATERIALS

4.1 General Requirements

4.1.1 Gate personnel (railroad employees and contractors) involved with the transportation of hazardous materials must be able to recognize trailers/containers transporting hazardous materials.

4.1.2 As a trailer/container approaches the gate house, gate personnel must take one or more of the following actions to see if hazardous materials are present:
   - Look for placards
   - Look for markings
   - Check to see if internal billing indicates hazardous material
   - Review the hardcopy shipping documents for hazardous material entries
   - Ask the drayman if there are any hazardous materials in the shipment

4.2 Look for Placards on the Trailer/Container

4.2.1 As the trailer/container approaches the gate house and during the inspection, look for placards that may indicate it contains hazardous materials.

4.2.2 Placard—a sign measuring minimum of 9.8 in. (250 mm) by minimum of 9.8 in. (250 mm) square-on-point, communicating a hazard by symbol, color, hazard class/division number, and possibly text.

Fig. 4.1 Placard types
4.3 Look for Markings on the Trailer/Container

4.3.1 As the trailer/container approaches the gate house and during the inspection, look for markings that may indicate it contains hazardous materials.

4.3.2 Marking—a descriptive commodity name, identification number, instructions, cautions (such as marine pollutant, inhalation hazard, elevated temperature material, limited quantities, fumigant, non-odorized), weight, specification, or UN marks, or combinations thereof, required for display on trailers/containers transporting hazardous materials.

4.3.2.1 Commodity Name—the proper shipping name of the material stenciled in minimum 2 in. letters on both sides of tank containers.

Note: The commodity name is also found on tank containers that do not transport hazardous materials.

4.3.2.2 Identification Number—four-digit number found in one of the formats shown in Fig. 4.2:

4.3.3 Marine Pollutant Mark

4.3.4 Inhalation Hazard Mark—the words INHALATION HAZARD stenciled on both sides of the trailer/container.
4.3.5 Elevated Temperature Material Mark—only regulated when transported in bulk packages. The marks shown in Fig. 4.4 are valid:

![Elevated temperature material mark](image)

**Fig. 4.4 Elevated temperature material mark**

4.3.6 Limited Quantities Mark—applies when vessel transportation is involved with the shipment; however it is not required for rail transportation. The mark is a square-on-point with black border, top, and bottom displayed on at least one side or end of trailers/containers.

![Limited quantities mark](image)

**Fig. 4.5 Limited quantities mark**

4.3.6.1 For a material listed on the shipping documents as “LIMITED QUANTITY” or “LTD QTY,” the LIMITED QUANTITIES mark (see Fig. 4.5) must be displayed on at least one side or end of trailers/containers, as explained below:

4.3.6.1.1 The limited quantity mark is required

- when the entire load of hazardous materials is limited quantities
- for a mix of non-hazardous materials and hazardous materials in limited quantity.

4.3.6.1.2 If there are quantities of hazmat in the container that require placarding, then the use of the LIMITED QUANTITIES mark is not required.

4.3.6.2 A package displaying the LIMITED QUANTITIES mark is not subject to additional marking requirements for non-bulk packages (e.g., proper shipping name or identification number marking) unless it contains a hazardous substance or a hazardous waste.
4.3.7 **Fumigant Mark**—marking indicating that the container is moving under fumigation.

![Fumigant Mark](image)

**Fig. 4.6** Fumigant mark

4.3.8 **Non-Odorized Mark**—for non-odorized liquefied petroleum gas (LPG). The words NON-ODORIZED or NOT ODORIZED are displayed on opposing sides of tank containers.

4.4 **Check for Internal Billing Information in Computer**
(Per the individual railroad's current procedures)
4.5 Review Shipping Description Entries for Indications of Hazardous Materials

4.5.1 Check the shipping description entries on the digital internal billing information and/or on the shipping documents from the drayman. Shipping documents (for hazardous material shipments)—any document providing the appropriate shipping description entries for a hazardous material shipment (see paragraph 5.0).

4.5.2 Look for one or more of the following entries that indicate hazardous material:
- Proper shipping name
- Numbered or worded hazard class/division (See Table 3.1)
- Identification number (four-digit number with the prefix UN or NA)
- Packing group (PG I, PG II, or PG III; or I, II, or III)
- Emergency response telephone number
- Letters “RQ” (reportable quantity)
- Words: “MARINE POLLUTANT”, “POISON (TOXIC),” “POISON (TOXIC)-INHALATION HAZARD,” or “INHALATION HAZARD”
- Hazard zone notation (ZONE A, ZONE B, ZONE C, or ZONE D)
- Hazardous Material Response Code (HMRC)

<table>
<thead>
<tr>
<th>Example—Shipping Description Entries</th>
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<tbody>
<tr>
<td>APLU 12345</td>
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<tr>
<td>10 BOX / 350 LBS, UN1830 (^{5.3.5}), SULFURIC ACID (^{5.3.1}), 8 (^{5.3.4}), PG II (^{5.3.6}), EMERGENCY CONTACT: 800-424-9300 (^{5.3.7})</td>
</tr>
</tbody>
</table>

Numbers in parentheses refer to required entries (see paragraphs 5.3.1 through 5.3.8)

4.6 Ask Drayman
Ask the drayman if there are any hazardous materials in the shipment.

5.0 REQUIRED DOCUMENTATION

5.1 General Requirements
Hazardous material shipments, whether loaded or containing a residue, must not be accepted for rail transportation, transported by rail, or released for highway transportation without having accurate and complete shipping documents and acceptable emergency response information.

5.1.1 Shipping Documents
The carrier is required to have a copy of accurate and complete shipping documents for any hazardous material shipment. A shipping document (for hazardous material shipments) is any document providing the shipping description entries for the hazardous material(s) being transported as required by DOT or international regulations.

5.1.1.1 When accepting a hazardous material shipment, the railroad must receive accurate and complete shipping documents in either digital or hardcopy form.

5.1.1.2 When in rail transportation, all required shipping documents and emergency response information must be in hardcopy.

5.1.1.3 When offering a hazardous material shipment to a highway carrier, the railroad must provide a hardcopy of accurate and complete shipping documents to the highway carrier. If requested by the highway carrier, a hardcopy of the emergency response information shall be provided.
5.1.2 Emergency Response Information
The carrier is required to have immediately available accurate and complete emergency response information for any hazardous material shipment it has in its possession.

Any of the following documents is acceptable emergency response information:

- Emergency Response Guidebook (ERG)
- Supplementary emergency response information printed as part of the train list/consist

5.2 Check for Internal Billing Information in Computer
(Per the individual railroad’s current procedures)

5.3 Review Shipping Description Entries
(Per the individual railroad’s current procedures)

Check the shipping description entries on the digital internal billing information and/or on the shipping documents from the drayman to ensure that the required entries (Fig. 5.1 and items listed in paragraphs 5.3.1 through 5.3.8 are present.

<table>
<thead>
<tr>
<th>Vertical Format</th>
<th>Horizontal Format</th>
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<tbody>
<tr>
<td>APLU 12345 (5.3.1)</td>
<td>APLU 678910 (5.3.1)</td>
</tr>
<tr>
<td>1 TNK (5.3.2)</td>
<td>8 CYL // UN1017 (5.3.2) // CHLORINE (5.3.3) // 2.3 (5.1, 8) (5.3.4) // RQ (CHLORINE) (5.3.8) // POISON-INHALATION HAZARD (5.3.8) // ZONE B (5.3.8) // MARINE POLLUTANT (CHLORINE) (5.3.8) //</td>
</tr>
<tr>
<td>UN1830 (5.3.5)</td>
<td>// EMERGENCY CONTACT: 800-424-9300 (5.3.7) // HAZMAT HMRC = 4930040 (5.3.8)</td>
</tr>
<tr>
<td>SULFURIC ACID (5.3.3)</td>
<td>//</td>
</tr>
<tr>
<td>8 (5.3.4)</td>
<td>//</td>
</tr>
<tr>
<td>PG II (5.3.6)</td>
<td>//</td>
</tr>
<tr>
<td>RQ (SULFURIC ACID) (5.3.8)</td>
<td>//</td>
</tr>
<tr>
<td>EMERGENCY CONTACT: 800-424-9300 (5.3.7)</td>
<td>//</td>
</tr>
<tr>
<td>HAZMAT HMRC = 4930040 (5.3.8)</td>
<td>//</td>
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</tbody>
</table>

Fig. 5.1 Examples of shipping description entries

5.3.1 Reporting Marks (Initials) and Number
The shipping document for a trailer/container must include the reporting mark and number only when the reporting mark and number are displayed on the trailer/container.

5.3.2 Total Quantity Notation

5.3.2.1 For bulk packages or cylinders, some indication of the total quantity must be shown (certain abbreviations are acceptable). Examples: “1 TNK” (1 tank container), “1 IBC” (1 intermediate bulk container), or “10 CYL” (10 cylinders).

5.3.2.2 For non-bulk packages, the total quantity is given by both of the following:
- Weight or volume (including the unit of measure); e.g., “100 LBS,” “55 GAL,” “5 KG,” or “208 L”; and
- Number and type of packages; e.g. “12 DRUMS,” “12 DRUMS (UN 1A1),” “15 BOXES (4G),” or “2 UN 3H1 JERRICANS”

5.3.2.3 For Class 1 materials, the quantity must be the net explosive mass.

5.3.2.4 An indication of total quantity is not required for packages containing only residue.
5.3.3 Proper Shipping Name

5.3.3.1 The proper shipping name of the hazardous material may be one or more words, such as “CHLORINE” or “SULFURIC ACID.” The proper shipping name may include a number that indicates the concentration of the material and/or the words “MIXTURE” or “SOLUTION.”

5.3.3.2 When a N.O.S. (Not Otherwise Specified) shipping name appears, the technical name of the product may appear in parentheses immediately after the N.O.S. shipping name, such as “CORROSIVE LIQUID, N.O.S. (CAPRYL CHLORIDE).” N.O.I. (Not Otherwise Indexed) or N.O.I.B.N. (Not Otherwise Indexed by Name) may be used instead of N.O.S.

5.3.3.3 For waste shipments, the word “WASTE” shall precede or be part of the proper shipping name of the material.

5.3.4 Hazard Class/Division—Numeric or Worded

Note: For further information on hazard classes/divisions, see the list of hazard classes and divisions in Table 3.1.

5.3.4.1 For certain hazardous materials, the subsidiary hazard class(es)/division(s) may appear in parentheses after the primary hazard class/division. For example, ethylene oxide is listed as “2.3 (2.1),” and chlorine is listed as “2.3 (5.1, 8).”

5.3.4.2 The hazard class need not be repeated for “COMBUSTIBLE LIQUID, N.O.S.” shipments.

5.3.4.3 Divisions 1.1, 1.2, 1.3, 1.4, 1.5, and 1.6 may show a compatibility group letter after the division (e.g., “1.1A”). The letter has no significance in rail transportation—it is for vessel and highway segregation requirements.

5.3.5 Identification Number

A four-digit identification number must appear on the shipping documents with the prefix “UN” (United Nations) or “NA” (North America), as appropriate.

5.3.6 Packing Group

The packing group must appear on the shipping documents in Roman numerals (“I,” “II,” or “III”). The packing group may be preceded by the letters “PG” (“PG I,” “PG II,” or “PG III”).

Exceptions:

5.3.6.1 Classes/divisions 1.1, 1.2, 1.3, 1.4, 1.5, 1.6, 2.1, 2.2, 2.3, 4.1 (self-reactive liquids or solids, types B-F), 5.2, 6.2, 7, and ORM-D do not require the packing group notation.

5.3.6.2 In addition, the following identification numbers from classes/divisions 3, 4.2, 4.3, 5.1, 8, and 9 do not require the packing group notation:

<table>
<thead>
<tr>
<th>NA1365</th>
<th>UN2794</th>
<th>UN3090</th>
<th>UN3171</th>
<th>UN3334</th>
<th>UN3476</th>
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<td>UN1700</td>
<td>UN2795</td>
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<td>UN3268</td>
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<td>UN2016</td>
<td>UN2990</td>
<td>UN3127</td>
<td>UN3292</td>
<td>UN3363</td>
<td>UN3481</td>
<td>UN3528</td>
</tr>
<tr>
<td>UN2426</td>
<td>UN3072</td>
<td>UN3166</td>
<td>UN3316</td>
<td>UN3473</td>
<td>UN3496</td>
<td>UN3530</td>
</tr>
</tbody>
</table>
5.3.7 Emergency Response Telephone Number

Shipping documents for hazardous materials must show a 24-hour emergency response telephone number, including the area code, for use in the event of an emergency involving the hazardous materials. For telephone numbers outside the United States, the international access code or the “+” (plus) sign, country code, and city code, as appropriate, must be included. The telephone number must be numeric.

**Note:** In some cases, a shipper name or contract number may be shown before or after the emergency response telephone number.

**Exceptions:** Emergency response telephone numbers are not required when the hazardous material is shown as “LIMITED QUANTITY” or “LTD QTY” or its proper shipping name is one of the following:

- Battery powered—equipment or vehicle
- Carbon dioxide, solid or dry ice
- Castor—bean, meal, flake, or pomace
- Consumer commodity
- Engines, internal combustion
- Fish—meal or scrap, stabilized
- Fumigated container not containing other hazardous materials
- Krill meal, PG III
- Refrigerating machine
- Vehicle, flammable gas-powered or vehicle, flammable liquid-powered

5.3.8 Additional Entries

Some hazardous material shipping descriptions may contain one or more of these entries:

- “RESIDUE: LAST CONTAINED...” (for packages emptied to the maximum extent possible)
- “HOT” notation added before a proper shipping name for elevated temperature materials
- “RQ” for Reportable Quantity notation of a hazardous substance
- “MARINE POLLUTANT” notation
- “POISON (TOXIC)—INHALATION HAZARD (PIH or TIH)” or “INHALATION HAZARD (IH)” notation
- Hazard Zone notation (“ZONE A,” “ZONE B,” “ZONE C,” or “ZONE D”)
- “LIMITED QUANTITY” or “LTD QTY” notation
- FRA Movement Approval (e.g., “FRA 0109123”), DOT Special Permit (e.g., “DOT-SP 9271”), DOT Exemption (e.g., “DOT-E 9271”), Special Approval Number (e.g., “SA 920403”), or Competent Authority Number (e.g., “CA 9701001”)
- Hazardous Materials Response Code (HMRC “48xxxxx” or “49xxxxx”)
- Certain shipments described using Canadian regulations may contain both an Emergency Response Assistance Plan number and its activation telephone number (e.g., “ERP-2-1008 (800-555-5555) // SPECIAL COMMODITY”)
- Box of asterisks with or without wording (not required by DOT, but may appear on railroad-produced documents)
• Shipper's Certification—a declaration on the shipping document provided by the shipper to the first carrier for loaded hazardous material shipments. It indicates compliance with the DOT regulations. The certification must be signed either by hand or mechanically. It reads as either of the following:

(1) "This is to certify that the above-named materials are properly classified, described, packaged, marked, and labeled, and are in proper condition for transportation according to the applicable regulations of the Department of Transportation.

Note: In the certification, the words "herein-named" may be substituted for the words "above-named."

(2) "I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked, and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations."

Note: In the certification the word "above" may be substituted for the word "below" as appropriate.

• “OIL” notation
• Additional radioactive material entries
• Name and address of the consignor’s place of business in Canada
• Additional hazardous waste shipping description entries (see paragraph 5.6.1)
• EX number for air bag modules classified as Class 9

Note: Recycled air bag modules do not require the EX number entry, but must have the word “RECYCLED” after the basic description.

• For international shipments, the notation “DANGEROUS GOODS IN EXCEPTED QUANTITIES” as appropriate
• The words “non-odorized” or “not odorized” must be included in association with the proper shipping description on a shipping document when non-odorized liquefied petroleum gas is offered for transportation.

5.4 Rejecting Hazardous Material Shipments
When required shipping description entries are not available, do the following:

5.4.1 Reject the shipment and have the drayman arrange to get the proper shipping documents to the railroad (specific for individual carrier).

5.4.2 Prepare the appropriate paperwork to give to the drayman, indicating the reason for rejection.

5.5 Handling Shipping Documents Received at the Gate
When accepting a hazardous material shipment with a hardcopy shipping document where the information is not in the billing system, do the following:

5.5.1 Forward the shipping document received as instructed for the location.

5.5.2 Follow internal procedures for handling the shipment.
5.6 Handling Hazardous Waste Shipping Documents and Manifests

Note: Hazardous waste shipments are governed by U.S. Environmental Protection Agency regulations in addition to DOT regulations.

5.6.1 The shipping document for a hazardous waste shipment must have the following entries in addition to the entries required for other hazardous material shipments:

- Proper shipping description
- Name, address, and telephone number of the hazardous waste generator
- Name and address of the hazardous waste disposal facility
- Name of transporter(s)
- Waste manifest number
- Special handling instructions
- Waste code(s)—U.S. manifests only

5.6.2 When accepting a hazardous waste shipment with railroad-generated shipping documents for the shipment that contains the hazardous waste manifest entries (see paragraph 5.6.1), pick up the car containing hazardous waste without a copy of the hazardous waste manifest.

5.6.3 When accepting a hazardous waste shipment without railroad shipping documents for the shipment, check to see that the hazardous waste manifest contains both the hazardous materials shipping description entries (see paragraph 5.3) and the hazardous waste manifest entries (see paragraph 5.6.1). If all required entries are present on the hazardous waste manifest provided by the drayman, follow internal procedures to accept the trailer/container and a copy or copies of the hazardous waste manifest.

5.6.4 If accepting a trailer/container of hazardous waste from a drayman, do the following:

5.6.4.1 Sign and date the hazardous waste manifest if requested (per individual carrier procedures).

5.6.4.2 Return a copy of the hazardous waste manifest to the drayman.

5.6.4.3 Mail the remaining copies of the hazardous waste manifest to your carrier’s point of contact.

Note: Signing a hazardous waste manifest requires function-specific training. Contact your carrier’s hazmat department for further details.

5.6.5 If releasing a trailer/container of hazardous waste to a drayman, obtain and retain a signed and dated copy of the hazardous waste manifest (per individual carrier procedures).

5.7 Handling Requests for Required Documentation

Upon receiving a request for shipping documents or emergency response information from a railroad employee, regulatory enforcement officer, or local emergency response personnel, do the following:

5.7.1 In an emergency situation

- Share all the information on the shipping documents for the shipment and
- Share all available emergency response information.

5.7.2 In a non-emergency situation

- Follow internal procedures for providing this information.
5.8 Providing Required Documentation when Releasing Hazardous Material Shipments

Before allowing a trailer/container of hazardous material, loaded or residue/empty, to be released, do the following:

5.8.1 Print out the shipping documents.

5.8.2 Ensure that required entries are on shipping documents.

5.8.3 Provide the drayman with the appropriate shipping documents.

5.8.4 If the drayman requests emergency response information, print out the emergency response information for the shipment from the computer and provide the emergency response information to the drayman.

6.0 LEAKAGE/TAMPERING

6.1 General Requirements

Hazardous material shipments, whether loaded or containing a residue, must be inspected to determine that they are not leaking.

6.2 Look for Leakage/Tampering

6.2.1 While making the required inspection, look for indications of leaking contents (odors, liquids, vapors, sounds of gas escaping, etc.) from the trailer/container.

6.2.2 When a leak involving a hazardous material shipment is found, do the following:

<table>
<thead>
<tr>
<th></th>
<th>Do not accept the shipment for rail transportation.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>• Contact your supervisor who may elect to move the shipment to a designated holding area at the facility for further action.</td>
</tr>
<tr>
<td></td>
<td>• Do not put the unit back in highway transportation.</td>
</tr>
<tr>
<td></td>
<td>• Ensure that the shipping description entries and emergency response information are available in hardcopy or digitally.</td>
</tr>
<tr>
<td>2.</td>
<td>Notify your supervisor or security personnel on site.</td>
</tr>
<tr>
<td>3.</td>
<td>Take the appropriate action to protect yourself and others in the area.</td>
</tr>
<tr>
<td></td>
<td>• Stay away from and upwind of any spilled material.</td>
</tr>
<tr>
<td></td>
<td>• Review the shipping documents and the emergency response information found either in the Emergency Response Guidebook (ERG) or on the shipping documents.</td>
</tr>
<tr>
<td></td>
<td>• Move to a safe location (see guidelines in the Emergency Response Guidebook (ERG), on the shipping documents, or in the facility emergency response plan).</td>
</tr>
<tr>
<td>4.</td>
<td>Follow procedures found in the facility emergency response plan.</td>
</tr>
<tr>
<td>5.</td>
<td>When safe to do so, prepare the appropriate paperwork indicating the reason for rejection.</td>
</tr>
</tbody>
</table>
6.2.3 Where an indication of tampering or a foreign object is found, do the following:

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Do not attempt to move or touch it.</td>
</tr>
<tr>
<td>2.</td>
<td>Stay clear of the area and keep others clear of the area.</td>
</tr>
<tr>
<td>3.</td>
<td>If the object is a possible explosive:</td>
</tr>
<tr>
<td></td>
<td>• Do not use your radio or cellular phone unless you are at least 300 feet away from the object, and</td>
</tr>
<tr>
<td></td>
<td>• Instruct all personnel to evacuate the area.</td>
</tr>
<tr>
<td>4.</td>
<td>Take note of any suspicious vehicles or people in the area.</td>
</tr>
<tr>
<td>5.</td>
<td>Immediately notify the train dispatcher, your supervisor, or carrier’s police.</td>
</tr>
</tbody>
</table>

7.0 PLACARDS

7.1 General Requirements

7.1.1 Hazardous material shipments, whether loaded or containing a residue, must not be accepted for rail transportation or released for non-rail transportation unless they are properly placarded. Not all hazardous material shipments require placards.

7.1.2 When accepting or releasing a hazardous material shipment that is placarded, gate personnel must verify that any required placards are displayed properly and match the entries on the shipping document.

7.2 Placard Requirements

7.2.1 A placard is a sign measuring a minimum of 9.8 in. (250 mm) by 9.8 in. (250 mm) square-on-point, communicating a hazard by symbol, color, hazard class/division number, and possibly text. Text indicating the hazard is required only on Class 7 and DANGEROUS placards and on OXYGEN placards without the identification number.

Note: For shipments originating internationally, text may not appear on a Class 7 placard.

7.2.2 Except for the DANGEROUS and OXYGEN placards, the hazard class/division text does not have to be in English as long as the size, color, hazard class/division, and symbol are correct. Each trailer/container containing hazardous material must be placarded on each side and each end in accordance with the instructions below.

7.2.3 All international shipments of hazardous materials require placards unless the shipping documents indicate that the shipment is a limited quantity.
7.2.4 Permissive Placarding
Placard may be displayed for hazardous materials even when not required as long as the placard represents the materials in the package.

7.2.5 Placards are required when transporting any quantity (bulk or non-bulk packages) of the following hazard classes/divisions:

| 1.1 | Explosive with mass explosion hazard |
| 1.2 | Explosive with projection hazard |
| 1.3 | Explosive with predominantly fire hazard |
| 2.3 | Gas poisonous (toxic) by inhalation |
| 4.3 | Dangerous when wet material |
| 5.2 | Organic peroxide, Type B, liquid or solid, temperature controlled |
| 6.1 | Material poisonous (toxic) by inhalation |
| 7 | Radioactive Yellow III label or exclusive use shipments of low specific activity (LSA) material and surface-contaminated objects. |

7.2.6 Placards are required when transporting quantities of 1,001 lb (454 kg) or more (bulk or non-bulk packages) of the following hazard classes/divisions:

| 1.4 | Explosive with no significant blast hazard |
| 1.5 | Very insensitive explosive; blasting agents |
| 1.6 | Extremely insensitive detonating substances |
| 2.1 | Flammable gas |
| 2.2 | Nonflammable, nonpoisonous (nontoxic) compressed gas |
| 3 | Flammable liquid |
| 4.1 | Flammable solid |
| 4.2 | Spontaneously combustible material |
| 5.1 | Oxidizer |
| 5.2 | Organic peroxide, other than “organic peroxide, Type B, liquid or solid, temperature controlled” in paragraph 7.2.5 |
| 6.1 | Poisonous (toxic) material, other than material poisonous (toxic) by inhalation |

Note: For U.S. transportation of Class 6.1 PG III materials, a PG III placard may be used in place of a POISON (TOXIC) placard.

8 Corrosive material

9 Miscellaneous hazardous material.

Exception: For U.S. transportation only, Class 9 placards are not required. However, bulk packaging must be marked with the appropriate identification number on a Class 9 placard, an orange panel, or a white square-on-point display configuration (see paragraph 8.2.2).

Note: Placards may be displayed for quantities less than 1001 lb of these materials as long as they are appropriate for the shipment.
7.2.7 Placards are not required for the following:

1. Hazardous material shipments with less than 1001 lb (454 kg) total weight, provided the hazard classes/divisions are listed in paragraph 7.2.6.
2. ORM-D (Other Regulated Materials—D)
3. Class 6.2 (Infectious Substances)
4. Class 9 (U.S./Canadian transportation) materials that display the identification number on an orange panel or a white square-on-point display configuration.
5. Limited Quantity (LTD QTY) shipments when identified as such on shipping documents
6. Cryogenic atmospheric gases, other than oxygen (e.g., argon)
7. Combustible liquids in non-bulk packaging (e.g., drums), usually found in intermodal shipments, unless the material is a hazardous substance or hazardous waste
8. Empty bulk containers that have been cleaned of residue and purged of vapor to remove any hazard and contain a cleaning certificate in the document tube
9. Except for exclusive use shipments of low specific activity (LSA) material and surface-contaminated objects, shipments listed as Radioactive White I and Radioactive Yellow II on shipping documents
10. Class 1.4S
11. Shipments of molten sulfur moving to the United States from Canada, provided the identification number and the words MOLTEN SULFUR appear on each side of the trailer/container

7.2.8 For U.S. shipments, the DANGEROUS placard may be used instead of separate placards when a trailer/container is loaded with 1,001 lb (454 kg) or more of non-bulk packages involving two or more hazard classes/divisions from paragraph 7.2.6.

Note: Additional placards may be displayed with the DANGEROUS placard, as required when 2,205 lb (1,000 kg) or more of one hazard class/division is present.

7.2.9 Placards may be displayed for hazardous materials, even when not required, as long as the placard is appropriate for the contents of the shipment.

7.2.10 Residue/empty bulk containers of hazardous material must remain placarded in the same manner as the loaded shipment, unless

- the container has been cleaned of residue; and
- the container has been purged of vapor to remove any hazard, and a cleaning certificate is in the document tube.

7.2.11 When the shipping document displays the words “POISON (TOXIC) INHALATION HAZARD,” each trailer/container must display the POISON (TOXIC) INHALATION HAZARD (6) or POISON (TOXIC) GAS (2) placard, as appropriate, on both sides and both ends in addition to other placards that may be required.

Note: If the POISON (TOXIC) INHALATION HAZARD (6) or POISON (TOXIC) GAS (2) placard is already displayed, it is not necessary to duplicate the placards.

7.2.12 When the shipping document displays a subsidiary division “(4.3),” each trailer/container must display the subsidiary DANGEROUS WHEN WET placard in addition to other required placards.

7.2.13 Some shipments of hazardous materials require subsidiary placards that represent subsidiary hazards. They must not display a four-digit identification number.
Fig. 7.1 Placards for hazardous materials by hazard class/division

**Note:** Text indicating the hazard is required only on Class 7 and DANGEROUS placards and on OXYGEN placards without the identification number. For shipments originating internationally, text may not appear on a Class 7 placard.

Except for the DANGEROUS and OXYGEN placards, the hazard class/division text does not have to be in English as long as the size, color, hazard class/division, and symbol are correct.
7.3 Inspect for Placards

7.3.1 Ensure that required placards on hazardous material shipments comply with the following:

7.3.1.1 Placards are consistent with the shipping document information (verify that placards match shipping description entries on shipping documents).

7.3.1.2 Placards are in place on both sides and both ends of hazardous material shipments.
   - Multiple placards may be found in all four locations on some shipments.
   - Subsidiary Placard—Some shipments of hazardous materials require subsidiary placards that represent subsidiary hazards. Subsidiary placards must not display a four-digit identification number.

7.3.1.3 Placards are readily visible from the direction they face, except for placards on the ends of trailers/containers in or on a railcar.

To ensure that placards are visible during transportation, they shall be placed at least 5 ft above the bottom rail/support structure of a container/portable tank on the sides and ends; and at least 5 ft from the corner post/end support structure of the container/portable tank on the sides.

![Fig. 7.2 Recommended placard placement for intermodal tanks and containers](image)

**Note:** When the placard is not at the appropriate height, ask the drayman to move the placard up to the appropriate height. If the drayman refuses to move the placard to the appropriate height, reject the shipment.

7.3.1.4 Placards are in placard holders or securely attached to the trailer/container (tape can be used as long as it does not cover the symbol, wording, or numbers).

7.3.1.5 Placards are not damaged, faded (their color should be similar to that shown in Fig. 7.1), or obscured by dirt or trailer/container parts (ladders, pipes, doors, and tarpaulins).

7.3.1.6 Placards do not cover any other markings on the trailer/container.

7.3.1.7 Placards have the words or numbers horizontal (if displayed), reading from left to right.
7.3.1.8 Placards must be located away from any marking (such as advertising) that could substantially reduce the placards’ effectiveness, and in any case be at least 3 in. (76 mm) away from such marking. An example of correct placard placement is shown in Fig. 7.3.

![Fig. 7.3 Example of recommended placard placement (see Fig. 7.2)](image)

7.3.2 When accepting a hazardous material shipment at the gate, if placards are incorrect, incomplete, or missing per the individual railroad’s current policy, do the following:

7.3.2.1 Reject the trailer/container until corrections have been made; and

7.3.2.2 Prepare the appropriate paperwork for the drayman, indicating the reason for rejection.

Note: When accepting shipments, railroad or contractor personnel are not required to remove improper placards.

7.4 Providing Placards when Releasing Hazardous Material Shipments

7.4.1 When releasing a hazardous material shipment at the gate, if any placards are incorrect, incomplete, or missing, do the following:

7.4.1.1 Provide a replacement for each incorrect, illegible, or missing placard; and

7.4.1.2 Ask the drayman to apply the placards. If the drayman declines, railroad or contractor personnel must apply the proper placards.

7.4.2 When placards do not match shipping description entries, contact the shipper to verify that you are applying the proper placards for the shipment.

7.4.3 When releasing a hazardous material shipment at the gate, railroad or contractor personnel must ensure that improper placards are removed, obliterated, or securely covered and proper placards are applied.

8.0 MARKINGS

8.1 General Requirements

8.1.1 Hazardous material shipments, whether loaded or containing a residue, must not be accepted for rail transportation or released for non-rail transportation unless they are properly marked. Not all hazardous material shipments require markings.

8.1.2 When accepting or releasing a hazardous material shipment that is marked, gate personnel must verify that any required markings are displayed properly and match the entries on the shipping document.

8.1.3 Markings include a descriptive commodity name, identification number, instructions, cautions (e.g., marine pollutant, inhalation hazard, elevated temperature material, limited quantities, fumigant, non-odorized), weight, specification, or UN marks, or combinations thereof, required for display on trailers/containers transporting hazardous materials.
8.2 Marking Requirements

8.2.1 Commodity Name

8.2.1.1 For a tank container of hazardous material, the proper shipping name of the material must be legibly marked in English (in at least 2 in. high letters) on two opposing sides of the tank.

8.2.1.2 When accepting a tank container of hazardous material and the commodity name is incorrect, illegible, or missing, reject the shipment until corrections have been made.

8.2.1.3 When releasing a hazardous material shipment in a tank container, if the commodity name is incorrect, illegible, or missing, do the following:

8.2.1.3.1 Provide a replacement for each incorrect, illegible, or missing commodity name; and

8.2.1.3.2 Ask the drayman to apply the commodity name. If the drayman declines, railroad or contractor personnel must apply the commodity name.

8.2.2 Identification Number

8.2.2.1 Identification number markings must appear on both sides and both ends, either on the placard or in close proximity to the placard, when a placard is required for any of the following:

- Bulk packages of hazardous materials (including Class 9 when no placard is required)
- Trailers/containers when 8,820 lb (4000 kg) or more of non-bulk packages of hazardous materials, with the same proper shipping name and identification number, are loaded at one location and the transport vehicle does not contain any other hazardous or non-hazardous materials

8.2.2.2 Identification numbers can be displayed in one of three ways, as shown in Fig. 8.1:

![Identification numbers](image)

8.2.2.3 Identification numbers must not be displayed on the following placards:

- EXPLOSIVES 1.1, 1.2, 1.3, 1.4, 1.5, or 1.6 placards
- RADIOACTIVE placards
- DANGEROUS placards
- Subsidiary placards

8.2.2.4 Ensure that the identification numbers displayed match the identification numbers on the shipping documents.

8.2.2.5 When accepting a hazardous material shipment, if the identification numbers are incorrect, illegible, or missing, reject the shipment until corrections have been made.
8.2.2.6 When releasing a hazardous material shipment, if the identification numbers are incorrect, illegible, or missing, do the following:

8.2.2.6.1 Provide a replacement for each incorrect, illegible, or missing identification number. (Note: Missing identification numbers must be replaced and may be entered on the appropriate placard, orange panel, or white square-on-point configuration by hand using a black indelible marker and making the numbers as large as possible.); and

8.2.2.6.2 Ask the drayman to apply the identification number. If the drayman declines, railroad or contractor personnel must apply the proper identification number.

8.2.3 Marine Pollutant Mark

8.2.3.1 For a material described on the shipping documents as a “MARINE POLLUTANT,” ensure that the MARINE POLLUTANT mark (see Fig. 8.2) appears on both sides and both ends of the trailer/container.

Note: For U.S. shipments (not subject to IMDG code) of marine pollutants, MARINE POLLUTANT marks are not required when the trailer/container displays a placard.

![Fig. 8.2 Marine pollutant mark](image)

8.2.3.2 When accepting a hazardous material shipment that is a marine pollutant, if a required MARINE POLLUTANT mark is incorrect, illegible, or missing, reject the shipment until corrections have been made.

8.2.3.3 When releasing a hazardous material shipment that is a marine pollutant, if a required MARINE POLLUTANT mark is incorrect, illegible, or missing, do the following:

8.2.3.3.1 Provide a replacement for each incorrect, illegible, or missing MARINE POLLUTANT mark; and

8.2.3.3.2 Ask the drayman to apply the MARINE POLLUTANT mark. If the drayman declines, railroad or contractor personnel must apply the MARINE POLLUTANT mark.

8.2.4 Inhalation Hazard Mark

8.2.4.1 For a material described on the shipping documents as “POISON (TOXIC)—INHALATION HAZARD” or “INHALATION HAZARD,” the words INHALATION HAZARD must appear (in at least 3.9 in. high letters) on both sides of the trailer/container, near the placards.

Note: When the words INHALATION HAZARD appear on the placards, the INHALATION HAZARD mark is not required on the trailer/container.

8.2.4.2 When accepting a hazardous material shipment that is an inhalation hazard, if the words INHALATION HAZARD are incorrect, illegible, or missing, reject the shipment until corrections have been made.
8.2.4.3 When releasing a hazardous material shipment that is an inhalation hazard, if the words INHALATION HAZARD are incorrect, illegible, or missing, do the following:

8.2.4.3.1 Provide a replacement for each incorrect, illegible, or missing INHALATION HAZARD mark; and

8.2.4.3.2 Ask the drayman to apply the INHALATION HAZARD mark. If the drayman declines, railroad or contractor personnel must apply the INHALATION HAZARD mark.

8.2.5 Hot Mark (Elevated Temperature Material)

8.2.5.1 For a material described on the shipping documents with the words “HOT,” “ELEVATED TEMPERATURE,” or “MOLTEN” and transported in a bulk package, the elevated temperature material mark must be displayed on two opposing sides of the bulk package, in one of the following valid formats:

- The word HOT stenciled on the package itself
- The words MOLTEN SULFUR (or MOLTEN SULPHUR) or MOLTEN ALUMINUM (or MOLTEN ALUMINIUM), as appropriate, stenciled on the package itself
- The international elevated temperature material symbol (see Fig. 8.3)
- The word HOT displayed on a plain white-square-on-point configuration having the same outside dimensions as a placard (see Fig. 8.3)

![Fig. 8.3 Elevated temperature material mark](image-url)

**Note:** Residue/empty shipments that last contained an elevated temperature material, such as asphalt, are not considered hazardous materials and do not require hazardous material shipping description entries on the shipping document. When the shipping document indicates residue/empty, the shipment may be accepted and moved in rail transportation without the hazardous material shipping description entries, even though the elevated temperature material mark and identification number are displayed.

8.2.5.2 When accepting a hazardous material shipment, if a required elevated temperature material mark is incorrect, illegible, or missing, reject the hazardous material shipment until corrections have been made.
8.2.5.3 When releasing a hazardous material shipment, if a required elevated temperature material mark is incorrect, illegible, or missing, do the following:

8.2.5.3.1 Provide a replacement for each incorrect, illegible, or missing elevated temperature material mark; and

8.2.5.3.2 Ask the drayman to apply the elevated temperature material mark. If the drayman declines, railroad or contractor personnel must apply the elevated temperature material mark.

8.2.6 Limited Quantities Mark
The LIMITED QUANTITIES mark applies when vessel transportation is involved with the shipment.

8.2.6.1 The LIMITED QUANTITIES mark must be formatted as a square-on-point with black border, top, and bottom and displayed on at least one side or end of trailers/containers (see Fig. 8.4).

8.2.6.2 The LIMITED QUANTITIES mark is required under the following circumstances:
• For an entire load of hazardous materials in limited quantities
• For a mix of non-hazardous materials and hazardous materials in limited quantities

8.2.6.3 The LIMITED QUANTITIES mark is not required when there are limited quantities and other hazardous materials not in limited quantities that require placards.

8.2.6.4 Packages containing hazardous materials in limited quantities need not be marked with the proper shipping name of the contents, but shall be marked with the UN number of the contents (preceded by the letters “UN”) placed within a diamond. The width of the line forming the diamond shall be at least 2 mm; the number shall be at least 6 mm high. Where more than one substance is included in the package and the substances are assigned to different UN numbers, then the diamond shall be large enough to include each relevant UN number.

8.2.6.5 When accepting a hazardous material shipment, if a required LIMITED QUANTITIES mark is incorrect, illegible, or missing, reject the hazardous material shipment until corrections have been made.

8.2.6.6 When releasing a hazardous material shipment, if a required LIMITED QUANTITIES mark is incorrect, illegible, or missing, do the following:

8.2.6.6.1 Provide a replacement for each incorrect, illegible, or missing LIMITED QUANTITIES mark; and

8.2.6.6.2 Ask the drayman to apply the LIMITED QUANTITIES mark. If the drayman declines, railroad or contractor personnel must apply the LIMITED QUANTITIES mark.
8.2.7 Fumigant Mark

8.2.7.1 The purpose of the FUMIGANT mark (see Fig. 8.5) is to warn persons unloading the trailer/container that it has been fumigated and that they must take appropriate precautions before unloading the trailer/container. The (*) on the mark should be replaced by the name of the fumigant.

Fig. 8.5  Fumigant mark

8.2.7.2 The FUMIGANT mark must be in English. However, EPA regulations allow another language in addition to the English version on the same FUMIGANT mark or on an additional one.

8.2.7.3 The FUMIGANT mark is required on each point of entry to a trailer/container.

8.2.7.4 Shipping Description Entries

8.2.7.4.1 For U.S. shipments that are fumigated, information on the shipping documents is not required.

8.2.7.4.2 For international (TDGR and IMDG code) shipments that are fumigated, verify that the information for the shipment on the shipping documents includes the following entries: UN 3359, Fumigated Unit, name of the fumigant, amount of fumigant, date of fumigation, and any disposal information.
8.2.8 Non-Odorized Mark

8.2.8.1 A tank container transporting non-odorized liquefied petroleum gas (LPG) must be legibly marked NON-ODORIZED or NOT ODORIZED on two opposing sides, either near the commodity name or the placard(s).

8.2.8.2 The NON-ODORIZED or NOT ODORIZED marks may appear on a tank container used for both non-odorized and odorized LPG.

8.2.8.3 Shippers may include on shipping documents information that a shipment is not odorized.

8.2.8.4 When accepting a hazardous material shipment, if a required NON-ODORIZED mark is incorrect, illegible, or missing, reject the hazardous material shipment until corrections have been made.

8.2.8.5 When releasing a hazardous material shipment, if a required NON-ODORIZED mark is incorrect, illegible, or missing, do the following:

8.2.8.5.1 Provide a replacement for each incorrect, illegible, or missing NON-ODORIZED mark; and

8.2.8.5.2 Ask the drayman to apply the NON-ODORIZED mark. If the drayman declines, railroad or contractor personnel must apply the NON-ODORIZED mark.

8.2.9 Owner/Lessee Name

8.2.9.1 The owner/lessee name must be displayed in one location on any tank container transporting hazardous materials.

8.2.9.2 When accepting a hazardous material shipment, if a required owner/lessee name is incorrect, illegible, or missing, reject the hazardous material shipment until corrections have been made.

8.2.9.3 When releasing a hazardous material shipment, if a required owner/lessee name is incorrect, illegible, or missing, do the following:

8.2.9.3.1 Provide a replacement for each incorrect, illegible, or missing owner/lessee name; and

8.2.9.3.2 Ask the drayman to apply the owner/lessee name. If the drayman declines, railroad or contractor personnel must apply the owner/lessee name.
8.2.10 Commodity Name

8.2.10.1 For intermodal tank containers transporting any hazardous materials, the commodity name must appear on two opposing sides of the intermodal tank container. The commodity name (at least 2 in. high for intermodal tank containers) must match the proper shipping name on the shipping documents and may include the technical name, although it is not specifically required.

8.2.10.2 When accepting an intermodal tank container, if the commodity name is illegible or missing, do not accept the shipment until corrections have been made.

Fig. 8.6 Example of a commodity stencil on an intermodal tank

8.2.11 Sour Crude Oil Mark

An intermodal tank container transporting petroleum crude oil that contains hydrogen sulfide (i.e., sour crude oil) in sufficient concentration that its vapors may present an inhalation hazard must include a marking to warn of the toxic hazard (see Fig. 8.7). The marking must be displayed at each location (e.g., manway) where exposure to hydrogen sulfide vapors may occur. The square-on-point must be black or red on a white or other contrasting background, and the skull and crossbones symbol must be black, located in the center of the square-on-point, and clearly visible.

Fig. 8.7 Sour crude oil mark
8.3 Inspect for Markings

8.3.1 Ensure that required markings on hazardous material shipments meet the following conditions:

8.3.1.1 Are consistent with the shipping document information (verify that markings match shipping description entries on shipping documents)

8.3.1.2 Are readily visible from the direction they face, except for markings on the ends of trailers/containers in or on a railcar
  - To ensure that markings are visible during transportation, place them at least 5 ft above the bottom rail/support structure of a container/portable tank on the sides and ends; and at least 5 ft from the corner post/end support structure of the container/portable tank on the sides.
  - When the marking is not at the appropriate height, ask the drayman to move the marking up to the appropriate height. If the drayman refuses to move the marking to the appropriate height, reject the shipment.

8.3.1.3 Are securely attached to the trailer/container (tape can be used as long as it does not cover the symbol, wording, or numbers)

8.3.1.4 Are not damaged, faded or obscured by dirt or trailer/container parts (ladders, pipes, doors, and tarpaulins)

8.3.1.5 Do not cover any other markings on the trailer/container

8.3.1.6 Have the words or numbers horizontal (if displayed), reading from left to right

8.3.2 When accepting a hazardous material shipment at the gate, if markings are incorrect, illegible, or missing per the individual railroad’s current policy, do the following:

8.3.2.1 Reject the trailer/container until corrections have been made; and

8.3.2.2 Prepare the appropriate paperwork for the drayman, indicating the reason for rejection.

Note: When accepting shipments, railroad or contractor personnel are not required to remove improper markings.

8.4 Providing Markings when Releasing Hazardous Material Shipments

8.4.1 When releasing a hazardous material shipment at the gate, if any markings are incorrect, illegible, or missing, do the following:

8.4.1.1 Provide a replacement for each incorrect, illegible, or missing marking; and

8.4.1.1.1 Ask the drayman to apply the markings. If the drayman declines, railroad or contractor personnel must apply the proper markings.

8.4.2 When markings do not match shipping description entries, contact the shipper to verify that you are applying the proper markings for the shipment.

8.4.3 Improper markings must be removed, obliterated, or securely covered.
9.0 EMERGENCY RESPONSE

9.1 General Requirements

9.1.1 When a leak involving a hazardous material shipment is found, follow procedures found in the facility emergency response plan.

9.1.2 Do not accept the shipment for rail transportation or allow the shipment to continue in rail transportation.

9.1.2.1 Contact your supervisor who may elect to move the shipment to a designated holding area at the facility for further action.

9.1.2.2 Do not put the unit back in highway transportation.

9.1.2.3 Ensure that the shipping description entries and emergency response information are available in hardcopy or digitally.

9.1.3 Notify your supervisor or security personnel on site.

9.1.4 Take the appropriate action to protect yourself and others in the area.

9.1.4.1 Stay away from and upwind of any spilled material.

9.1.4.2 Review the shipping documents and the emergency response information found either in the Emergency Response Guidebook (ERG) or on the shipping documents.

9.1.4.3 Move to a safe location (see guidelines in the Emergency Response Guidebook (ERG), on the shipping documents, or in the facility emergency response plan).

10.0 GLOSSARY

Note: This glossary defines/explains the terms as used in this document.

<table>
<thead>
<tr>
<th>Term</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Accepting hazardous material shipments</td>
<td>Inbound transfer of possession of a trailer/container from a motor or vessel carrier to a rail carrier after verifying compliance with applicable governmental regulations and internal company rules.</td>
</tr>
<tr>
<td>Basic description</td>
<td>The identification number, proper shipping name, hazard class/division number, and packing group (if assigned) prescribed for a hazardous material.</td>
</tr>
<tr>
<td>Bulk package</td>
<td>Package with capacity &gt;119 gal (450 L) for liquids, 882 lb (400 kg) for solids, or a water capacity &gt;1,000 lb (454 kg) for gases.</td>
</tr>
<tr>
<td>Carrier</td>
<td>A person (individual, corporation, company, etc.) who transports property in commerce by railcar, aircraft, motor vehicle, or vessel.</td>
</tr>
<tr>
<td>Commodity name</td>
<td>The proper shipping name or an authorized common name of a hazardous material.</td>
</tr>
<tr>
<td>Consumer commodity</td>
<td>A hazardous material that is packaged and distributed in a form intended or suitable for sale through retail sales agencies for consumption by individuals for personal care or household use. Consumer commodities are assigned to hazard class “ORM-D,” and are typically excepted from labeling, placarding, and shipping document requirements.</td>
</tr>
<tr>
<td>Container</td>
<td>Any freight container (box) or tank container [intermodal (IM) portable tank, portable tank, UN portable tank, or portable bin]. <strong>Note:</strong> A freight container is a reusable container having a volume of 64 ft$^3$ or more, designed and constructed to permit being lifted with its contents intact, and intended primarily for containment of packages (in unit form) during transportation.</td>
</tr>
<tr>
<td>Dangerous goods</td>
<td>Term used for “hazardous materials” in countries other than the United States.</td>
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<tr>
<td>Term</td>
<td>Definition</td>
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<tr>
<td>Division</td>
<td>A subdivision of a hazard class; typically two numerals separated by a decimal point (e.g., 2.1, 2.2, 2.3, 5.1, 5.2, etc.). For Class 1 (explosive materials), a “compatibility group letter” is shown after the second numeral (e.g., 1.1A, 1.4G, etc.).</td>
</tr>
<tr>
<td>Documentation</td>
<td>Includes complete shipping documents with the appropriate shipping description entries and acceptable emergency response information.</td>
</tr>
<tr>
<td>Drayman</td>
<td>The driver of a motor vehicle delivering or receiving a trailer/container.</td>
</tr>
<tr>
<td>Elevated temperature material</td>
<td>A material that, when offered for transportation or when transported as a bulk package, is any of the following:</td>
</tr>
<tr>
<td></td>
<td>• A liquid at a temperature at or above 212 °F (100 °C);</td>
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<tr>
<td></td>
<td>• A liquid with a flash point at or above 100 °F (38 °C) that is intentionally heated and offered for transportation or transported at or above its flash point; or</td>
</tr>
<tr>
<td></td>
<td>• A solid at a temperature at or above 464 °F (240 °C).</td>
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<tr>
<td></td>
<td>Contact with an elevated temperature material may result in thermal burns in addition to other hazards associated with the material.</td>
</tr>
<tr>
<td>Emergency</td>
<td>An unforeseen combination of circumstances or the resulting state that calls for immediate action (e.g., derailment and leaks).</td>
</tr>
<tr>
<td>Emergency response information</td>
<td>Hazard and response information for each hazardous material, contained in the Emergency Response Guidebook (ERG) and other supplementary train documentation to assist response personnel at hazardous material incidents.</td>
</tr>
<tr>
<td>Emergency response telephone number</td>
<td>The telephone number of an entity who is either knowledgeable of a hazardous material being shipped and has comprehensive emergency response and incident mitigation information for that material or who has immediate access to an entity who possesses such knowledge and information.</td>
</tr>
<tr>
<td>Freight container</td>
<td>See “Container”</td>
</tr>
<tr>
<td>Fumigant</td>
<td>A poisonous/toxic agent in vapor form intended to destroy insects and vermin.</td>
</tr>
<tr>
<td>Hazard class</td>
<td>The category of hazard assigned to a material. A hazard class may be subdivided into divisions. When talking about hazard classes/divisions, the hazard class/division can be expressed as a number or with words (e.g., Class 3 (three) or Flammable Liquid; Division 2.1 (two-point-one) or Flammable Gas). A material will have a primary hazard class/division and may have one or more subsidiary hazard classes/divisions that represent additional hazards associated with the material.</td>
</tr>
<tr>
<td>Hazardous material</td>
<td>A substance or material that the U.S. Secretary of Transportation has determined to be capable of posing an unreasonable risk to health, safety, and property when transported in commerce. The term “hazardous material” includes hazardous substances, hazardous wastes, elevated temperature materials, and marine pollutants.</td>
</tr>
<tr>
<td>Hazardous material shipment</td>
<td>A hazardous material being transported by railcar, aircraft, motor vehicle, or vessel.</td>
</tr>
<tr>
<td>Hazardous substance</td>
<td>A hazardous material that, as determined by the U.S. Environmental Protection Agency, has a detrimental effect on the environment. To be regulated in transportation, the quantity in one package must equal or exceed the material’s “Reportable Quantity” (RQ).</td>
</tr>
<tr>
<td>Hazardous waste</td>
<td>A material subject to the Hazardous Waste Manifest Requirements of the U.S. Environmental Protection Agency due to its potential threat to public health or the environment.</td>
</tr>
<tr>
<td>Hazardous waste manifest</td>
<td>A document used specifically for tracking hazardous wastes in transportation. It contains the shipping description and identifies the waste generator, each transporter, and the designated (disposal) facility.</td>
</tr>
</tbody>
</table>
**Term** | **Definition**
--- | ---
**Hazard zone** | One of four levels of inhalation hazard (Hazard Zones A through D) assigned to gases, and one of two levels of hazard (Hazard Zones A and B) assigned to liquids that are poisonous/toxic by inhalation. For example, when the hazard zone is “A,” it is shown on the shipping document as “Zone A.” Zone A is the most hazardous, and Zone D is the least hazardous.

**Identification number** | A four-digit number preceded by “UN” (United Nations) or “NA” (North America) and assigned to a hazardous material.

**Inhalation hazard** | Term used to identify certain gases and liquids that may cause health problems if breathed in very low concentrations for short periods of time.

**International shipment** | A shipment being made between two or more countries or between places in one country through another country.

**Limited quantity (LTD QTY)** | A term used to indicate a hazardous material shipment that is allowed an exception to certain regulatory requirements because of the small amount of the material in a package.

**Marine pollutant** | A hazardous material that has a detrimental effect on marine/aquatic life.

**Marking** | A descriptive commodity name, identification number, instructions, cautions (such as marine pollutant, inhalation hazard, elevated temperature material, limited quantities, fumigant, non-odorized), weight, specification, or UN marks, or combinations thereof, required for display on trailers/containers transporting hazardous materials.

**Non-bulk package** | Packaging with a capacity \( \leq 119 \text{ gal (450 L)} \) for liquids, \( 882 \text{ lbs (400 kgs)} \) for solids, or a water capacity of \( \leq 1,000 \text{ lb (454 kg)} \) for gases.

**ORM-D** *(Other Regulated Material—D)* | A material such as a consumer commodity that, due to its form, quantity, and packaging, presents such a limited hazard that it may not be subject to the hazardous material regulations when transported by rail.

**Package** | The packaging plus its contents. Packaging is the receptacle and any other components or materials necessary for the receptacle to perform its containment function.

**Packing group** | A grouping of hazardous materials according to the degree of danger: Packing Group I (shown as “PG I” or “I” on the shipping documents) indicates great danger. Packing Group II (shown as “PG II” or “II” on the shipping documents) indicates medium danger. Packing Group III (shown as “PG III” or “III” on the shipping documents) indicates minor danger.

**Placard** | A sign measuring at least 9.84 in. (250 mm) by 9.84 in. (250 mm) square-on-point, communicating a hazard by symbol, color, hazard class/division number, and possibly text. Some placards must be displayed on a square background that is white with a black border.

**Poison inhalation hazard (PIH)** | Term used to identify certain gases and liquids that may cause health problems if breathed in very low concentrations for short periods of time.

**Primary hazard** | See “Hazard class”

**Proper shipping name** | The name of a hazardous material as specified by the regulations.

**Releasing hazardous material shipments** | Outbound transfer of possession of a trailer/container to a motor or vessel carrier from a rail carrier after verifying compliance with applicable governmental regulations and internal company rules.

**Reportable quantity (RQ)** | The minimum quantity (in pounds or kilograms) in one package required for a hazardous material to meet the definition of a “hazardous substance.”
<table>
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<tbody>
<tr>
<td>Residue</td>
<td>The hazardous material remaining in a package after its contents have been unloaded to the maximum extent possible. It may be indicated on the shipping documents by the phrases “RESIDUE: LAST CONTAINED...,” “EMPTY...,” or “MTY...” in association with the basic description.</td>
</tr>
</tbody>
</table>
| Shipper’s certification             | A signed (or digitally printed) declaration on the shipping document provided by the shipper to the first carrier for a loaded hazardous material shipment. It indicates compliance with the DOT regulations. The certification must be signed by hand or mechanically. It may read in either of the following ways:  

“This is to certify that the above-named materials are properly classified, described, packaged, marked, and labeled and are in proper condition for transportation according to the applicable regulations of the Department of Transportation.”

or

“I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name; and are classified, packaged, marked, and labeled/placarded; and are in all respects in proper condition for transport according to applicable international and national governmental regulations.” |
| Shipping description entries       | The specific information required on a shipping document, including the “basic description,” number and type of packages, total quantity; and additional entries that may be applicable to the shipment (e.g., “RQ,” “ Limited Quantity”/“LTD QTY,” “Marine Pollutant,” “Poison/Toxic Inhalation Hazard Zone A (or B, C, or D),” etc.). |
| STCC Number (Standard Transportation Commodity Code Number; 7-character alpha) | A unique 7-digit code used to classify a commodity or group of commodities. The value of the first two digits of the STCC number ranges from 01 to 49, inclusive. |
| Subsidiary hazard                   | See “Hazard class”                                                                                                                                                                                      |
| Subsidiary placard                  | A placard that identifies a specific material’s subsidiary hazard(s).                                                                                                                                   |
| Tank container                      | See “Container”                                                                                                                                                                                         |
| Technical name                      | A recognized chemical name or microbiological name used in scientific and technical handbooks, journals, and texts to further identify a hazardous material.                                                |
| Total quantity notation             | The total weight or volume, including the unit of measurement, of the hazardous material contained in a package, such as “100 LBS,” “55 GAL,” “5 KG,” or “208 L.” For bulk packages and cylinders, merely an indication of the total quantity is required, such as “1 IM Tank,” “2 IBCs,” “10 cylinders,” or “10 cyl.” For non-bulk packages, the number and type of packages are also required, such as “12 DRUMS (UN 1A1)” or “15 BOXES.” An indication of total quantity is not required for packages containing only residue. |
| Toxic inhalation hazard (TIH)       | Term used to identify certain gases and liquids that may cause health problems if breathed in very low concentrations for short periods of time.                                                             |
| Trailer                             | A cargo-carrying body with permanent wheels on the rear end (also called a van or semitrailer).                                                                                                           |