

# Instructions for Handling Hazardous Materials – Intermodal Gate Operations

June 25, 2008

## Policy

Employees and contractors must comply with these Instructions when handling trailers/containers transporting hazardous materials during intermodal gate operations. These Instructions describe how to do your job safely and in compliance with federal and international regulations including:

- U. S. Department of Transportation's (DOT) Hazardous Material Regulations (49 CFR 171-180),
- International Maritime Dangerous Goods Code (IMDG), and
- Canadian Transportation of Dangerous Goods regulations (TDG).

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

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## Responsibilities of Gate Clerks

In addition to their normal duties, gate clerks (*employees or contractors*) must take the following actions when accepting **or** releasing trailers/containers transporting hazardous materials:

1. Recognize trailers/containers transporting hazardous materials. **Section II**
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. **(In gate transaction)**  
**Required Tasks**
  - Verify availability of required documentation (billing) **Section III**
  - Verify that shipping papers have appropriate entries **Section III**
  - Verify that trailers/containers transporting hazardous materials are not leaking **Section IV**
  - Verify that trailers/containers transporting hazardous materials are properly placarded **Section V**
  - Verify that trailers/containers transporting hazardous materials are properly marked **Section VI**
3. Release trailers/containers transporting hazardous materials that are properly prepared for transportation by highway; do not release trailers/containers transporting hazardous materials that are not properly prepared. **(Out gate transaction)**  
**Required Tasks**
  - Verify availability of required documentation (billing) **Section III**
  - Obtain the shipping papers and verify they have appropriate entries **Section III**
  - Offer the drayman the shipping papers and, when requested, provide emergency response information **Section III**
  - Verify that trailers/containers transporting hazardous materials are not leaking **Section IV**
  - Verify that trailers/containers transporting hazardous materials are properly placarded **Section V**
  - Verify that trailers/containers transporting hazardous materials are properly marked **Section VI**
4. **Take** initial actions at releases or potential releases of hazardous materials. **Section VII**

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## Training Requirements

Persons involved in the transportation of hazardous material (both employees and contractors) must be trained in the regulations within 90 days of being assigned to a job involving hazardous material and once every three (3) years thereafter or whenever the regulations change. New employees may work under direct supervision of a trained employee for the initial 90 day period. These persons must be:

- Familiar with the provisions of the regulations
- Able to recognize and identify hazardous materials
- Able to perform job functions in compliance with the regulations, including:
  - Use of emergency response information provided;
  - Application of safety measures implemented to protect employees from exposure; and
  - Application of accident avoidance measures.

## Safety Equipment to be Worn

Personnel making inspections of intermodal shipments of hazardous materials must wear the following personal protective equipment:

- Hard hat
- Safety glasses / prescription glasses with side shields
- Reflectorized vest
- Footwear must have a definite heel and must cover the ankle (*no gym shoes, sandals, thin-soled, or high heel*).

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## **Section I General**

### **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.

- a. DOT regulates the transportation of hazardous material. DOT's regulations are found in the Hazardous Materials Regulations (49 CFR Parts 170-189). These regulations are designed to:
  - (1) Prevent accidents involving hazardous material;  
**and**
  - (2) Minimize the impact of accidents that do occur.
- b. DOT's regulations explain the requirements for:
  - (1) Properly classifying, describing, packaging, marking, labeling, and preparing hazardous material shipments for transportation;
  - (2) Handling and transporting hazardous material shipments in commerce;
  - (3) Reporting unintentional releases of hazardous material;
  - (4) Training employees involved in the transportation of hazardous materials.

### **2. Hazardous Materials**

- a. Hazardous materials are defined as “a substance or material which the Secretary of Transportation has determined to be capable of posing an unreasonable risk to health, safety, and property when transported in commerce.”
- b. The term “hazardous material” includes hazardous substances, hazardous wastes, elevated temperature materials (HOT or MOLTEN), and marine pollutants.

### 3. Classifying Hazardous Materials

Hazardous materials are classified according to their chemical and/or physical properties. There are two worded classes and nine numeric classes, some of which may be divided into divisions. A hazardous material is assigned to only one primary hazard class, even if it meets the definition of more than one hazard class. Table 1 (Page 7) lists the hazard classes and divisions.

**Table 1. Hazard Classes and Divisions**

***Numbered Classes and Divisions***

**1 - Explosives**

- 1.1 – Explosive with mass explosion hazard
- 1.2 – Explosive with projection hazard
- 1.3 – Explosive with predominantly fire hazard
- 1.4 – Explosive with no significant blast hazard
- 1.5 – Very insensitive explosive; blasting agent
- 1.6 – Extremely insensitive detonating substance

**2 - Gases**

- 2.1 – Flammable gas
- 2.2 – Nonflammable, nonpoisonous, (nontoxic) compressed gas
- 2.3 – Gas poisonous by inhalation

**3 - Flammable Liquids**

**4 - Flammable Solids and Reactive Solids/Liquids**

- 4.1 – Flammable solid
- 4.2 – Spontaneously combustible material
- 4.3 – Dangerous when wet material

**5 - Oxidizers and Organic Peroxides**

- 5.1 – Oxidizer
- 5.2 – Organic peroxide

**6 - Poisonous (Toxic) Materials and Infectious Substances**

- 6.1 – Poisonous (toxic) material
- 6.2 – Infectious substance

**7 - Radioactive Materials**

**8 - Corrosive Materials**

**9 - Miscellaneous Hazardous Materials**

***Worded Classes (US Only)***

**Combustible Liquids** (*regulated in bulk packaging*)

ORM-D (Other Regulated Materials – D) – (***regulated in air transportation only***)

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#### **4. Exceptions for U.S. Government Material**

- a. 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 book.
- b. Escorts must travel in a separate transport vehicle from the rail car carrying the hazardous materials.
- c. The escorts must have, in their possession, a document certifying that the shipment is for the purpose of national security.

#### **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 United States (U.S.) Under the specific regulations (IMDG, TDG) from origin to destination as long as they are in complete compliance with the specific regulations and meet the restrictions under CFR 171.23.

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## Section II

# Recognizing Hazardous Materials

### 1. General Requirements

Employees and contractors involved with the transportation of hazardous materials must be able to recognize trailers/containers transporting hazardous materials.

As a trailer/container approaches the gate house, gate personnel must take the following actions to see if hazardous materials are present:

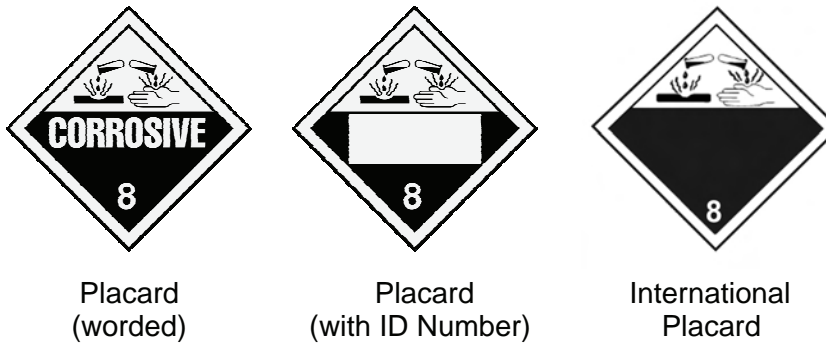
- a. Look for placards;
- b. Look for markings;
- c. Check to see if internal billing indicates hazardous material;
- d. Review the hard copy shipping papers for hazardous material entries; and/or
- e. Ask the drayman if there are any hazardous materials in the shipment.

### 2. Look for Placards on the Trailer/Container

Look for placards as the trailer/container approaches your location and during your inspection.

**Placard** - a sign measuring 10 3/4 by 10 3/4 inches square-on-point, communicating a hazard by symbol, color, and words or numbers.

**Note:** A placard meeting IMDG requirements [minimum of 250 mm (9 3/4 in) by 250 mm (9 3/4 in)] is acceptable.



**Figure 1. Placard Types**

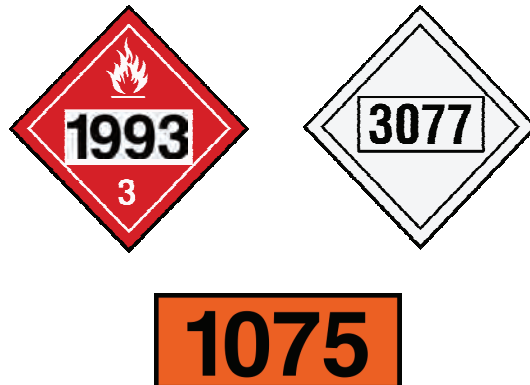
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### 3. Look for Markings on the Trailer/Container

Look for markings as the trailer/container approaches your location and during your inspection.

**Marking** - an identification number, descriptive commodity name, or caution (such as Marine Pollutant, Inhalation Hazard, Elevated Temperature, Limited Quantity, or Fumigant Mark), displayed on trailers/containers transporting hazardous materials.

- a. **Identification Number** (four-digit number found in one of the formats below)

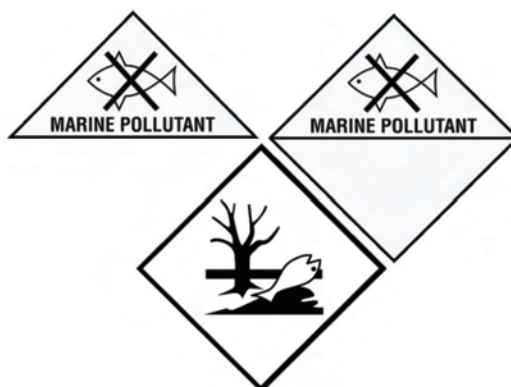


**Figure 2. Identification Numbers**

- b. **COMMODITY NAME** - the proper shipping name of the material stenciled in 2-inch letters on both sides of tank containers.

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

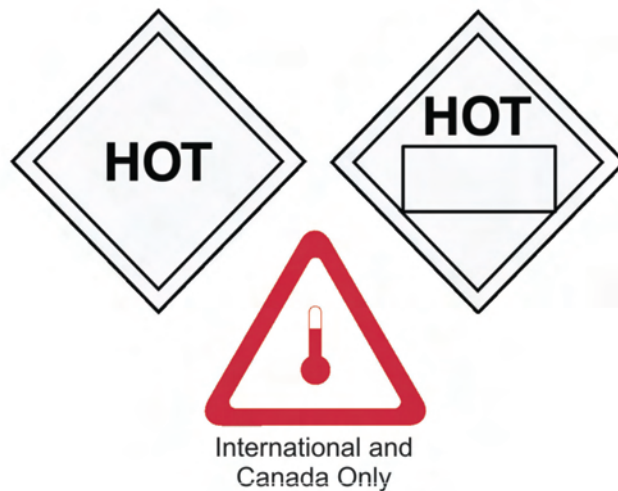
- c. **MARINE POLLUTANT Mark** (either of the formats below)



**Figure 3. MARINE POLLUTANT Mark**

- d. **INHALATION HAZARD Mark** - the words INHALATION HAZARD stenciled on both sides of the trailer/container.

- 
- e. **Elevated Temperature Material Mark** - the word “HOT”, or “MOLTEN SULFUR” or “MOLTEN ALUMINUM” stenciled on the trailer/container, an elevated temperature material symbol, or the word HOT displayed in either of the formats below.



**Figure 4. HOT Mark**

- f. **LIMITED QUANTITY Mark** – the words “LIMITED QUANTITY” or “LTD QTY” displayed on both sides and both ends of trailers/containers.
- a. The limited quantity mark is required:
    - i. When the entire load of hazardous materials is limited quantities.
    - ii. When a mix of non-hazardous materials and hazardous materials in limited quantity.
  - b. The limited quantity mark is not required:
    - i. When there are limited quantities and other hazardous materials NOT in limited quantities, but you would placard for the regular hazardous materials.
  - c. Packages containing dangerous goods 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 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.

- g. **FUMIGANT Mark** – marking indicating that the container is moving under fumigation.

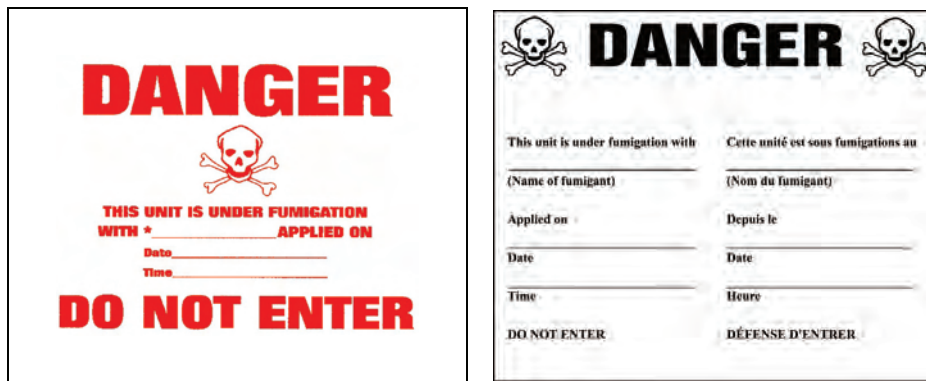


Figure 5. FUMIGANT Mark

4. **Check Internal Billing Information in Computer** (*per individual railroad's current procedures*)

5. **Review Shipping Paper Entries**

- a. Ask the drayman for the shipping papers or check the billing entries.

**Shipping paper** (*for hazardous material shipments*) - any document providing the appropriate shipping description entries for a hazardous material shipment. (*See Section III*)

- b. Look for one or more of the following entries which indicate hazardous material:
- (1) Proper shipping name
  - (2) Numbered or worded hazard class (See Figure 1 pg. 9)
  - (3) DOT identification number (four digit number with the prefix UN or NA)
  - (4) Packing group (PG I, PG II, or PG III or I, II, or III)
  - (5) Emergency response telephone number
  - (6) Letters "RQ" (*stands for Reportable Quantity*)
  - (7) Words: "MARINE POLLUTANT", "POISON (TOXIC)", "POISON-INHALATION HAZARD" or "INHALATION HAZARD"
  - (8) Hazard zone notation (ZONE A, ZONE B, ZONE C, or ZONE D)

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**Example - Shipping Description Entries**

APLU 12345 (a)  
10 BOX / 350 LBS (b), SULFURIC ACID (c), 8 (d), UN1830 (e),  
PG II (f), EMERGENCY CONTACT: 800-424-9300 (g)

Letters in parenthesis refer to required entries  
[Items a to g, pages 16-17].

**Figure 6. Example of Shipping Description Entries**

**6. Ask Drayman**

- a. Ask the drayman if there are any hazardous materials in the shipment.

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## **Section III**

# **Required Documentation**

### **1. General Requirement**

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 papers** and **acceptable emergency response information**.

#### **a. Shipping papers**

The carrier is required to have a copy of accurate and complete shipping papers for any hazardous material shipment:

*[A shipping paper (for hazardous material shipments) is any document providing the description of the hazardous material shipment as required by national or international regulations.]*

- (1) When accepting a hazardous material shipment, the railroad must receive accurate and complete shipping papers in either electronic or hard copy form.
- (2) When in rail transportation, all required shipping papers and emergency response information must be in hard copy.
- (3) When offering a hazardous material shipment to a highway carrier, the railroad must provide a hard copy of accurate and complete shipping papers to the highway carrier. If requested by the highway carrier, a hard copy of the emergency response information will be provided.

#### **b. Emergency Response Information**

The carrier is required to have immediately available accurate and complete emergency response information for any hazardous material shipment for which they are responsible.

Any of the following documents is acceptable emergency response information:

- (1) Emergency response information printed as part of the train list/train consist
- (2) ***Emergency Response Guidebook (ERG)***

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**2. Check Internal Billing Information in Computer** (*per individual railroad's current procedures*)

**3. Review Shipping Description Entries**

- a. Ask the drayman for a copy of the shipping papers, compare the shipping description entries from the drayman with the shipping description entries from the computer.

**Reject** the shipment,

- (1) If the drayman does not provide a copy of the shipping papers;
- (2) If the entries in the computer do not match the entries on the drayman's document.

- b. Review the description of each hazardous material in the computer to make sure that the required entries (Items a - g, pages 16-17) are present.

**Note:** Items c - f, listed on the following pages, must be in sequence. However, other information may be entered in parentheses between the items. The identification number <sup>(e)</sup> may be found either before the proper shipping name <sup>(c)</sup> or after the hazard class <sup>(d)</sup> until January 1, 2013 when the identification number must appear before the proper shipping name <sup>(c)</sup>.

When these required entries are not present or are incorrect:

- (1) **Reject** the shipment
- (2) Prepare the appropriate paperwork indicating the reason for rejection.

**Example - Shipping Description Entries**

APLU 12345 (a)  
10 BOX / 350 LBS (b), SULFURIC ACID (c), 8 (d), UN1830 (e),  
PG II (f), EMERGENCY CONTACT: 800-424-9300 (g)

Letters in parenthesis refer to required entries  
[Items a to g, pages 16-17].

**Figure 7. Example of Shipping Description Entries**

## Required Shipping Description Entries

### a. Reporting marks (initials) and number

Shipping papers for rail cars, trailers, freight/tank containers, or portable tanks must include the reporting mark and number **only** when the reporting mark and number is displayed on the rail car, trailer, freight/tank container, or portable tank.

**Note: For containers that have no reporting marks but have a number, follow the local railroad policy [NONZ, NONU, etc.].**

For multi-page documents, the page number must be placed on each page of the document.

### b. Total quantity notation

- (1) For empty/residue packagings, bulk packagings, or cylinders of Class 2 materials, the total quantity is given by the weight or volume **and** the number and type of packages, for example, "**1 IBC, 500 kg**". Certain abbreviations are acceptable, for example, "**1 TNK**" (intermodal tank), "**1 C/L**" (1 car load), or "**10 CYL**" (cylinders).
- (2) For **non-bulk packaging**, the total quantity is given by both weight or volume including unit of measure and the number of packages and the type of package; for example, "**2 drums, 200 kg**".

### c. Proper shipping name

- (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 materials.
- (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)**."
- (3) For waste shipments, the word "**WASTE**" will usually precede or be part of the proper shipping name of the material.

## Required Shipping Description Entries (*continued*)

### d. Hazard class - numeric or worded

- (1) For certain hazardous materials, a subsidiary hazard class will appear in parentheses after the primary hazard class. For example, Ethylene Oxide is listed as "2.3 (2.1)."
- (2) The hazard class need not be repeated for "COMBUSTIBLE LIQUIDS, N.O.S." shipments.
- (3) Classes 1.1, 1.2, 1.3, 1.4, 1.5, and 1.6 may show a compatibility group letter after the class (for example, "1.1A"). The letter has no significance in rail transportation – it is for vessel and highway segregation requirements.

### e. Identification number

A 4-digit identification number must appear on the shipping papers with the prefix "UN" (United Nations) or "NA" (North America) as appropriate. **Note:** The identification number <sup>(e)</sup> may be found either before the proper shipping name <sup>(c)</sup> or after the hazard class <sup>(d)</sup> until January 1, 2013 when the identification number must appear before the proper shipping name <sup>(c)</sup>

### f. Packing group

The packing group, in Roman Numerals ("I", "II", or "III") which may be preceded by the letters "PG" ("PG I", "PG II", or "PG III").

**Exception:** The packing group is not required for Class 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.

### g. Emergency response telephone number

The 24-hour emergency response telephone number must include the area code or international access code.

**Exception:** Emergency response telephone numbers are not required when the hazardous material is shown as a "Limited Quantity", "LTD QTY", or its proper shipping name is:

- (1) battery powered - equipment or vehicle
- (2) carbon dioxide, solid, or dry ice
- (3) castor - bean, meal, flake, or pomace
- (4) consumer commodity
- (5) engines, internal combustion
- (6) fish - meal or scrap, stabilized
- (7) fumigated unit
- (8) refrigerating machine
- (9) vehicle, flammable gas powered
- (10) vehicle, flammable liquid powered
- (11) wheelchair, electric

## Required Shipping Description Entries (*continued*)

### h. Additional Entries

Some hazardous material shipping descriptions also may require one or more of the following entries:

- (1) "Residue: Last Contained ..." (for packages emptied to the maximum extent possible)
- (2) "HOT" notation added before proper shipping name for elevated temperature materials
- (3) "RQ" for Reportable Quantity notation of a hazardous substance
- (4) "MARINE POLLUTANT" notation
- (5) "POISON" or "TOXIC" notation
- (6) "POISON (TOXIC)-INHALATION HAZARD" (PIH or TIH) or "INHALATION HAZARD" (IH) notation
- (7) Hazard Zone notation ("ZONE A", "ZONE B", "ZONE C", or "ZONE D")
- (8) "LIMITED QUANTITY" or "LTD QTY" notation
- (9) FRA Movement Approval (for example, "FRA 0109123"), DOT Special Permit (for example, "DOT- SP 9271"), Special Approval Number (for example, "SA 920403"), or Competent Authority Number (for example, "CA 9701001")
- (10) Hazardous Material Response Code (STCC "48xxxxx" or "49xxxxx")
- (11) **Shipper's Certification** - a declaration on the shipping paper provided by the shipper to the first transporter for loaded hazardous material shipments. It indicates compliance with the DOT regulations. The certification must be signed by hand or mechanically. It reads either:  
"This is to certify that the above-named (herein-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, packed, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations."

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### **Required Shipping Description Entries *(continued)***

- (12) Additional hazardous waste shipping description entries
  - (a) proper shipping description
  - (b) name, address, and telephone number of the hazardous waste generator
  - (c) name and address of the hazardous waste disposal facility
  - (d) name of transporter
  - (e) waste manifest number
  - (f) special handling instructions.
  
- (13) For International shipments the following additional information may be present.
  - (a) Dangerous Goods in Excepted Quantities, and an indication of the number of packages.

Note: It must appear on the shipping papers. Voluntary January 1, 2009, and becomes mandatory January 1, 2010.

#### **4. Rejecting Hazardous Material Shipments**

When required shipping description entries are not available,

- a. **Reject** shipment and have drayman get the proper shipping papers to the \_\_\_\_\_ (specific for individual carrier).
- b. Prepare the appropriate paperwork to give to the drayman indicating the reason for rejection.

#### **5. Handling Shipping Papers Received from a Customer**

When accepting a hazardous material shipment and the shipper provides a hard copy shipping paper:

- a. Forward the shipping paper received as instructed for the location.
- b. Make sure that the shipper's certification and signature are on the shipping papers received from the customer under the following conditions:
  - (1) for loaded shipments billed as hazardous materials;
  - (2) when the railroad is the initial carrier; and
  - (3) when the shipping paper has not already been provided to the \_\_\_\_\_ (*specific for individual carrier*).

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## 6. Handling Hazardous Waste Shipping Papers and Manifests

- a. The shipping paper for a hazardous waste shipment must have the following entries in addition to the entries required for other hazardous material shipments:
  - (1) proper shipping description
  - (2) name, address, and telephone number of the hazardous waste generator
  - (3) name and address of the hazardous waste disposal facility
  - (4) name of transporter
  - (5) waste manifest number
  - (6) special handling instructions.
- b. When accepting a hazardous waste shipment with railroad generated shipping papers for the shipment which contains the hazardous waste manifest entries [(a) above], pick up the car containing hazardous waste without a copy of the hazardous waste manifest:
- c. When accepting a hazardous waste shipment without railroad shipping papers for the shipment, check to see that the hazardous waste manifest contains both the hazardous materials shipping description entries (see Section III, Required Shipping Description Entries item, a-g) and the hazardous waste manifest entries [(a) above].

If all entries are present on the hazardous waste manifest, pick up the car containing hazardous waste with the copy of the hazardous waste manifest.
- d. When accepting or delivering a shipment of hazardous waste from the hazardous waste generator:
  - (1) Sign the hazardous waste manifest as requested.
  - (2) Return a copy of the hazardous waste manifest to the person requesting the signature.
  - (3) Mail the remaining copies of the hazardous waste manifest to the \_\_\_\_\_

## 7. Handling Requests for Required Documentation

Upon receiving a request for shipping papers or emergency response information from a railroad employee, regulatory enforcement officer or local emergency response personnel in an emergency:

- a. Share **all** the information on the shipping papers for the shipment **and**
- b. Share **all** available emergency response information.

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## **8. Providing Required Documentation When Releasing Hazardous Material Shipments**

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

- a. Print out the shipping papers.
- b. Make sure that required entries are on shipping papers.
- c. Provide drayman the appropriate shipping papers.
- d. If 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.

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## **Section IV**

# **Leakage**

### **1. General Requirement**

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

### **2. Look for Leakage**

- a. While making the required inspection, look for indications of leaking contents (odors, liquids, vapors, sounds of gas escaping, etc.) from the trailer/container.
- b. When a leak involving a hazardous material shipment is found:
  - 1) Do not accept the shipment for rail transportation. Contact supervisor who may elect to move shipment to designated holding area at the facility for further action. The unit must not put back in highway transportation. Make sure that the shipping description entries and emergency response information are available in hard copy or in the computer.
  - 2) Notify your supervisor or security personnel on site.
  - 3) Take the appropriate action to protect yourself and others in the area.
    - (a) Stay away from and upwind of any spilled material
    - (b) Review the shipping papers and emergency response information or review the appropriate page of the ***Emergency Response Guidebook***.
    - (c) Move to a safe location (see guidelines in emergency response information or ***Emergency Response Guidebook***).
  - 4) Follow procedures found in facility emergency response plan.
  - 5) When safe to do so, prepare the appropriate paperwork indicating the reason for rejection.

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## **Section V**

# **Placards**

### **1. General Requirement**

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

**Placard** - a sign measuring 273 mm (10.8 in) by 273 mm (10.8 in) square-on-point, communicating a hazard by symbol, color, and words or numbers. (see Figure 8 for pictures of placards). Text indicating the hazard is not required on placards other than the DANGEROUS placard. The hazard class text does not have to be in English.

**Note:** A placard meeting IMDG requirements [minimum of 250 mm (9.8 in) by 250 mm (9.8 in)] is acceptable.

### **2. Placard Requirements**

Each bulk packaging, freight container, transport vehicle, or rail car containing hazardous material must be placarded on each side and each in accordance with the instructions below.

**Note:** Unless the shipping papers indicate that the shipment is a limited quantity, all international shipments of hazardous materials require placards.

- a. Placards are required when transporting **any quantity** (bulk or non-bulk) of these hazard classes:
  - 1.1 Explosive with mass explosion hazard
  - 1.2 Explosive with projection hazard
  - 1.3 Explosive with predominantly fire hazard
  - 2.3 Gas poisonous by inhalation
  - 4.3 Dangerous when wet material
  - 5.2 Organic peroxide, Type B, liquid or solid, temperature controlled
  - 6.1 Material poisonous by inhalation
  - 7 Radioactive Yellow III label or exclusive use shipments of low specific activity (LSA) materials and surface contaminated objects.

- b. Placards are required when transporting quantities of **1001 lbs. (454 kg) or more** (bulk or non-bulk) of these hazard classes:

**Note:** Placards may be displayed for quantities less than 1001 lbs. of these materials, as long as they are appropriate for the shipment.

- 1.4 Explosive with no significant blast hazard

**Note:** Placards are not required for Class 1.4S materials.

- 
- 1.5 Very insensitive explosive; blasting agents
  - 1.6 Extremely insensitive detonating substances
  - 2.1 Flammable gas
  - 2.2 Nonflammable, nonpoisonous 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 2(a) above
  - 6.1 Poisonous material, (other than material poisonous 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 shipments of Class 9 materials transported in the US must be marked with the identification number (see Section VI, item 4).

Combustible Liquids (see c (7) below for handling combustible liquids in non-bulk packages)

Mixed hazardous materials in this item (see page 24, item c).

c. Placards are **not** required for:

- (1) Hazardous material shipments with less than 1001 lbs. (454 kg) total weight, provided the hazard classes are included in item b above
- (2) ORM-D (Other Regulated Materials – D)
- (3) Class 6.2 (Infectious Substances)
- (4) Class 9 (US/Canadian transportation) materials that display the identification number
- (5) Limited Quantity (LTD QTY) shipments when identified as such on shipping papers
- (6) Cryogenic atmospheric gases, other than Oxygen (for example, Argon)
- (7) Combustible liquids in non-bulk packaging (i.e., drums), usually found in intermodal shipments, unless the material is a hazardous substance or hazardous waste
- (8) Rail cars and intermodal tanks of hazardous materials which have been cleaned and purged
- (9) Shipments listed as Radioactive White I and Radioactive Yellow II on shipping papers
- (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 tank car.

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- d. For U.S. shipments, the DANGEROUS placard may be used instead of separate placards when a trailer/container is loaded with 1,001 lbs (454 kg) or more of non-bulk packages involving two or more classes of hazardous materials from Table 2 [49 CFR 172.504(e)] or (see Section V, 2(b) page 23)

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

- e. Placards may be displayed for hazardous materials, even when not required, as long as the placard is appropriate for the contents of the shipment.
- f. Residue/empty tank containers of hazardous material must remain placarded in the same manner as the loaded shipment, unless
- (1) The packaging has been cleaned of residue, **and**
  - (2) Purged of vapor to remove any hazard and a cleaning certificate is in the document tube.
- g. When the shipping paper displays the words "POISON INHALATION HAZARD", each trailer/container must display the POISON INHALATION HAZARD (6) or POISON GAS (2) placard, as appropriate, on both sides and both ends in addition to other placards which may be required.

**Note:** If the POISON INHALATION HAZARD or POISON GAS placard is already displayed, it is not necessary to duplicate the placards.

- h. When the shipping paper displays a subsidiary hazard class "DANGEROUS WHEN WET" or (4.3), each trailer/ container must display the subsidiary DANGEROUS WHEN WET placard in addition to other placards required.
- i. Some shipments of hazardous materials require subsidiary placards that represent secondary hazards. These placards may or may not (international) display the hazard class or division number. They must not display a 4-digit identification number.

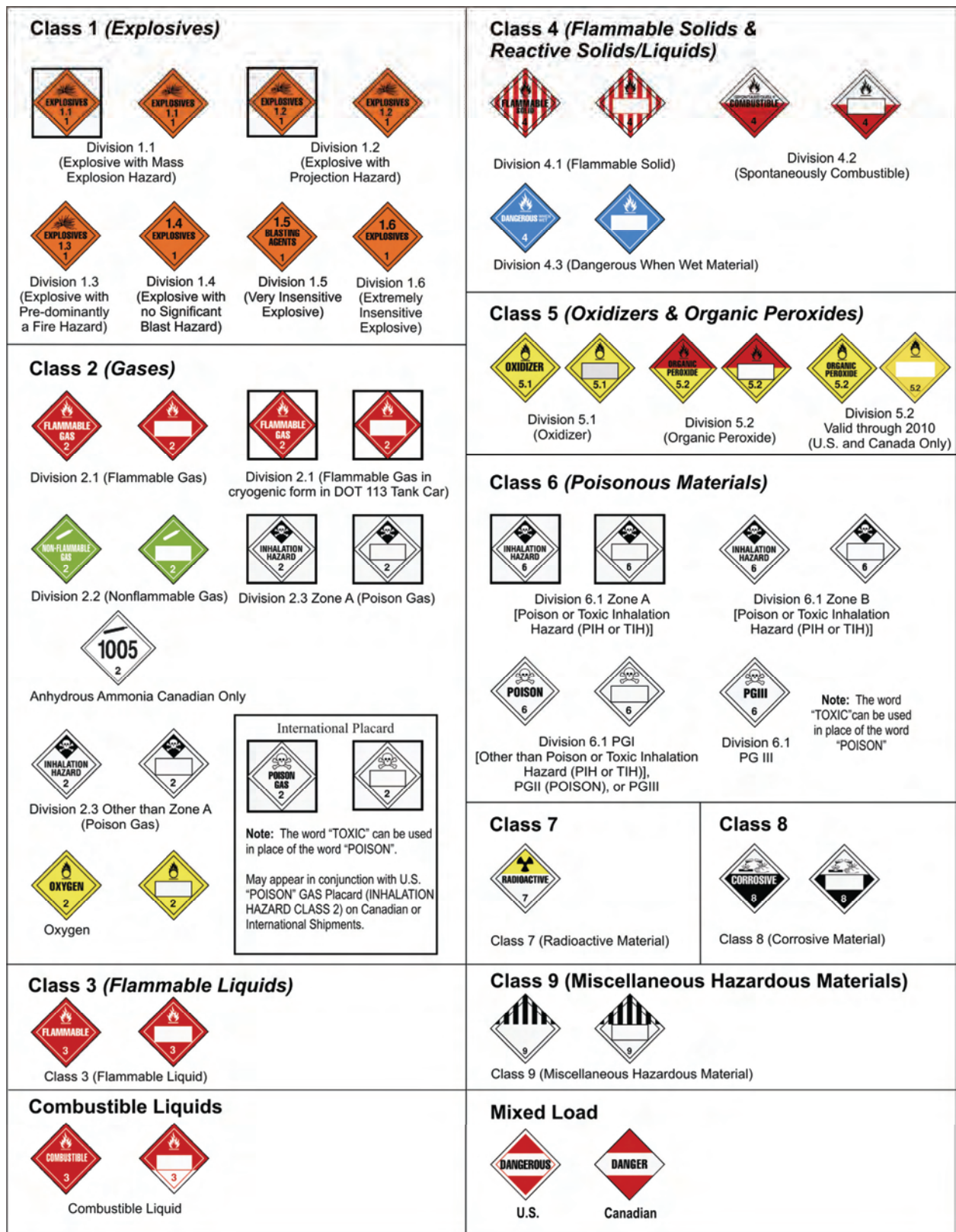


Figure 8. Placards for Hazardous Materials by Hazard Class

Text indicating the hazard is not required on placards other than the DANGEROUS and Radioactive placard. The worded hazard class text, except for DANGEROUS, does not have to be in English as long as the size, color, hazard class, and symbol are correct.

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### 3. Inspect for Placard Display

- a. Make sure that required placards are on both sides and both ends of placarded shipments:
  - (1) Are consistent with the shipping paper information (verify that placard matches shipping description entries on shipping papers)
  - (2) Are in place on both sides and both ends of hazardous material shipments
    - (a) Multiple placards may be found in all four locations on some shipments
    - (b) **Subsidiary Placard:** Some shipments of hazardous materials require subsidiary placards that represent secondary hazards. Subsidiary placards must not display a 4-digit identification number.

**Note:** International or Canadian subsidiary placards do not display the hazard class or division number.
    - (c) Are readily visible from the direction they face, except for placards on the ends of trailers/ containers in or on a rail car.

Make sure the bottom of the placard is at least **five (5)** feet, or higher, above the bottom rail of a container (or, if a trailer, **five (5)** feet above the ground) and at least **five (5)** feet in from the corner post on the sides.

**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.
    - (d) 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).
    - (e) Not damaged, faded (should have color similar to that printed in this document), or obscured by dirt or trailer/container parts (ladders, pipes, doors, and tarpaulins).
    - (f) Should not cover any other markings on the trailer or container
    - (g) Have the words or numbers horizontal (if displayed), reading from left to right.

- 
- b. When accepting a hazardous material shipment at the gate and placards are incorrect, not legible, or missing per individual railroad's current: **(individual railroad policy)**
    - (1) **Reject** the trailer/container until corrections have been made; and
    - (2) Prepare the appropriate paperwork for the drayman indicating the reason for rejection.  
**Note:** When accepting shipment, railroad or contractor personnel are not required to remove improper placards.
  - c. When releasing shipments, railroad or contractor personnel must insure that improper placards are removed, obliterated or securely covered.

#### **4. Providing Missing Placards When Releasing Hazardous Material Shipments**

When releasing a hazardous material shipment at the gate and any placards are incorrect, not legible, or missing:

- a. Provide a replacement for each incorrect, illegible, or missing placard; and
- b. You may ask the drayman to apply the placard and if the drayman declines, railroad or contractor personnel will have to apply the proper placards.

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

Improper placards must be removed, obliterated, or securely covered.

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## Section VI Markings

### 1. General Requirements

Hazardous material shipments, whether loaded or containing a residue, must not be accepted for rail transportation or released for highway transportation unless they are properly marked in accordance with DOT regulations. Not all hazardous material shipments require markings.

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 paper.

Markings include the identification number, marine pollutant marking, elevated temperature material (HOT) marking, and inhalation hazard marking. Additional markings specifically for intermodal tanks include the AAR-600 certification marking, proper shipping name, and owner/lessee name.

### 2. Marking Requirements

#### a. Identification Number Markings

- (1) Identification number markings must appear on both sides and both ends of either on the placard or in close proximity to the placard, when a placard is required:
  - (a) Bulk packages of hazardous materials (including Class 9 when no placard is required)
  - (b) Trailers and containers when 8,820 lbs. (4000 kg.) or more of non-bulk packages of hazardous materials, with the same proper shipping name and identification number, and the trailer or container does not contain any other hazardous or non-hazardous materials.
- (2) Identification numbers can be displayed in one of three ways, as Figure 9 shows:

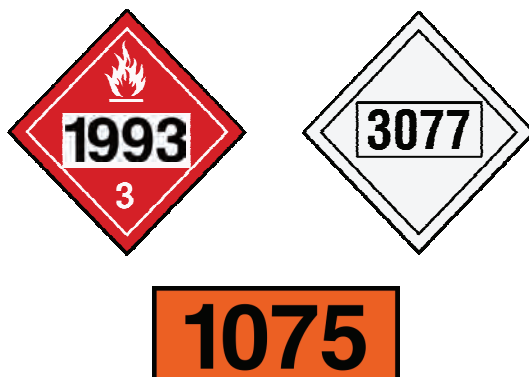


Figure 9. Identification Numbers

- 
- (3) Identification numbers must not be displayed on:
    - (a) EXPLOSIVES 1.1, 1.2, 1.3, 1.4, 1.5, or 1.6 placards
    - (b) RADIOACTIVE placards
    - (c) DANGEROUS placards
    - (d) Subsidiary placards.
  - (4) Make sure that the identification numbers displayed match the identification number on the shipping papers.
  - (5) When **accepting** a hazardous material shipment and the identification number is not correct, is not legible, or is missing, **reject** the shipment until corrections have been made and prepare the appropriate paperwork for the drayman indicating the reason for rejection.

***(individual railroad policy)***

- (6) When releasing a hazardous material shipment at the gate and identification numbers are incorrect, not legible, or missing:
  - (a) Provide a replacement for **each** incorrect, illegible, or missing identification number;

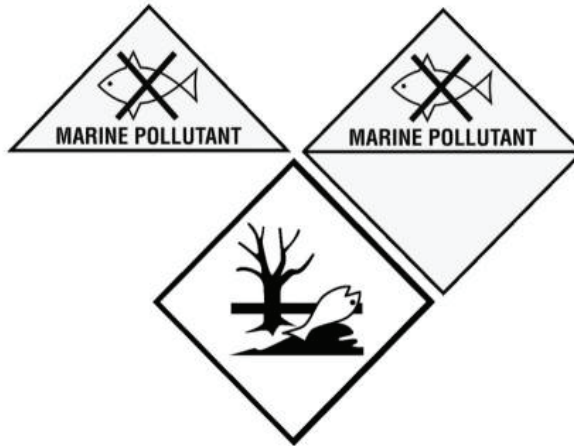
**Note:** Missing identification numbers must be replaced and may be entered on the appropriate placard, orange panel, or white square-on-point configuration by hand using a **black indelible** marker (numbers as large as possible).

***and***
  - (b) You may ask the drayman to apply the identification number and if the drayman declines, railroad or contractor personnel will have to apply the proper identification number.

**b. MARINE POLLUTANT Mark**

- (1) For a material described on the shipping papers as a “marine pollutant”, make sure that the MARINE POLLUTANT mark appears on both sides and both ends of the trailer or container in one of the formats in Figure 10.

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



**Figure 10. MARINE POLLUTANT Mark**

- (2) When **accepting** a hazardous material shipment that is a marine pollutant and a required MARINE POLLUTANT mark is not legible or is missing, **reject** the shipment until corrections have been made.
- (3) When releasing a hazardous material shipment that is a marine pollutant and a required MARINE POLLUTANT mark is not legible or is missing:
  - (a) Provide a replacement for **each** incorrect, illegible, or missing MARINE POLLUTANT mark;
  - and**
  - (b) You may ask the drayman to apply the MARINE POLLUTANT mark and if the drayman declines, railroad or contractor personnel will have to apply the MARINE POLLUTANT mark.

**d. INHALATION HAZARD Mark**

- (1) For a material described on the shipping papers as "Poison (Toxic) - Inhalation Hazard" or "Inhalation Hazard," the words "INHALATION HAZARD" must appear (in at least 3.9-inch high letters) on both sides of the trailer or container, near the placards.

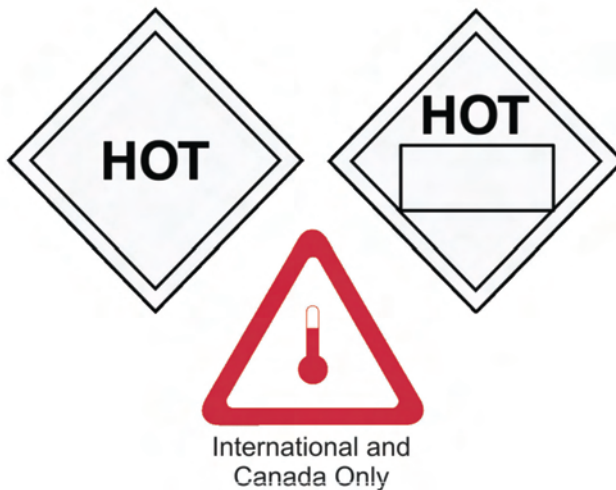
**Note:** When the words "INHALATION HAZARD" appear on the placards, the "INHALATION HAZARD" mark is not required on the trailer or container.
- (2) When **accepting** a hazardous material shipment and the words "INHALATION HAZARD" are illegible or missing, **reject** the shipment until corrections have been made.
- (3) When releasing a hazardous material shipment that is an inhalation hazard and a required INHALATION HAZARD mark is not legible or is missing:

- 
- (a) Provide a replacement for **each** incorrect, illegible, or missing INHALATION HAZARD mark;
- and**
- (b) You may ask the drayman to apply the INHALATION HAZARD mark and if the drayman declines, railroad or contractor personnel will have to apply the INHALATION HAZARD mark.

**c. Elevated Temperature Material Mark**

- (1) For a material described on the shipping papers with the words "HOT," "ELEVATED TEMPERATURE MATERIAL," or "MOLTEN" and transported in a bulk packaging, the word "HOT", "MOLTEN ALUMINUM", or "MOLTEN SULFUR (SULPHUR)" must be marked on two opposing sides of the bulk packaging, either:
  - (a) on a plain white square-on-point configuration having the same outside dimensions as a placard (see Figure 11)
  - or
  - (b) on the packaging itself.

**Note:** Residue/empty shipments that last contained elevated temperature material, such as asphalt, are not considered hazardous materials and do not require hazardous material shipping description entries on the shipping paper. When the shipping paper 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 mark and identification number are displayed.

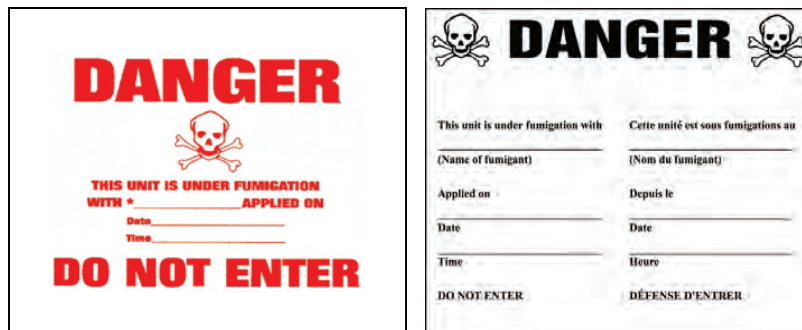


**Figure 11. HOT Mark**

- (2) When **accepting** a hazardous material shipment and a elevated temperature mark is not legible or is missing, **reject** the hazardous material shipment until corrections have been made.
- (3) When releasing a hazardous material shipment that is a marine pollutant and a required elevated temperature mark is not legible or is missing:
  - (a) Provide a replacement for **each** incorrect, illegible, or missing elevated temperature mark;
  - and**
  - (b) You may ask the drayman to apply the elevated temperature mark and if the drayman declines, railroad or contractor personnel will have to apply the elevated temperature mark.

**g. FUMIGANT Mark**

- (1) As information, the purpose of the FUMIGANT mark (see Figure 12) is to warn persons unloading the trailer or container that it has been fumigated and that they must take appropriate precautions before unloading the trailer or container. The (\*) on the mark will be replaced by the name of the fumigant.



**Figure 12. FUMIGANT Mark**

- (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 an additional one.  
The fumigant marking is required on each point of entry to a trailer/or container.
- (3) Shipping Description Entries
  - (a) For U.S. shipments that are fumigated, information on the shipping papers is not required.
  - (b) For International (Canadian and IMDG) shipments verify that the information for the shipment on the shipping papers includes the following entries - UN 3359, Fumigated Unit, name of the fumigant, amount of fumigant, date of fumigation, and any disposal information.

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e. **COMMODITY NAME**

- (1) For intermodal tanks of hazardous materials, the proper shipping name of the material (including the technical name for N. O. S. shipments) must be legibly marked in English (in at least 2-inch high letters) on two opposing sides of the tank.
- (2) When **accepting** an intermodal tank of hazardous materials and the commodity name is illegible or missing, **reject** the shipment until corrections have been made.
- (3) When releasing a hazardous material shipment in an intermodal tank and the commodity name is not legible or is missing:
  - (a) Provide a replacement for each incorrect, illegible, or missing commodity name;  
The method for replacing the commodity name will be governed by individual company policy and procedures.
  - (b) Do not release the trailer/container until the commodity name is correctly displayed on the tank.

f. **AAR-600 Certification Marking**

- (1) The AAR-600 certification mark must be marked in two (2) inch letters on both sides near the right end of any tank containers.
- (2) When **accepting** an intermodal tank of hazardous materials and the AAR-600 certification mark is illegible or missing, **reject** the shipment until corrections have been made.

g. **Owner/Lessee Name**

- (1) The owner/lessee name must be displayed on any tank containers transporting hazardous materials (in one location).
- (2) When **accepting** an intermodal tank of hazardous materials and the owner/lessee name is illegible or missing, **reject** the shipment until corrections have been made.
- (3) When releasing a hazardous material shipment in an intermodal tank and the owner/lessee name is not legible or is missing:
  - (a) Provide a replacement for illegible or missing owner/lessee name;  
The method for replacing the owner/lessee name will be governed by individual company policy and procedures.
  - (b) Do not release the trailer/container until the commodity name is correctly displayed on the tank.

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### 3. Inspect for Markings

a. Make sure that markings on hazardous material shipments:

- (1) Are consistent with the shipping paper information (verify marking matches shipping description entries on shipping papers)
- (2) When accepting a hazardous material, are readily visible from the direction they face, except for markings on the ends of trailers/ containers in or on a rail car.

Make sure the bottom of the MARINE POLLUTANT mark and identification number mark are at least **five (5)** feet, or higher, above the bottom rail of a container [or, if a trailer, **five (5)** feet above the ground] and at least **five (5)** feet in from the corner post on the sides.

*(photo of proper marked trailer or container)*

**Note:** 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.

- (3) Are securely attached as specified in this document on trailers/ containers transporting hazardous materials
- (4) Are not damaged, faded (should have color similar to that printed in this document), or obscured by dirt or trailer/container parts (ladders, pipes, doors, and tarpaulins).
- (5) Should not cover any other markings on the trailer or container
- (6) Have the words or numbers horizontal (if displayed), reading from left to right.
- (7) Mounted with wording or numbers horizontal, reading from left to right.
- (8) A intermodal tank container shipments containing liquefied petroleum gas (LPG) that is unodorized must be legibly marked NON-ODORIZED or NOT ODORIZED on two opposing sides near the marked proper shipping name or near the placards.

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

Shippers may include on shipping papers the information that the shipment is not odorized, if they so choose.

- b. When accepting shipment, railroad or contractor personnel are not required to remove improper markings. **Reject** the shipment.
- c. When releasing shipments, railroad or contractor personnel must insure that improper markings are removed, obliterated, or securely covered.

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#### **4. Providing Missing Markings When Releasing Hazardous Material Shipments**

When releasing a hazardous material shipment at the gate and any markings are incorrect, not legible, or missing:

- a. Provide a replacement for each incorrect, illegible, or missing marking; and
- b. You may ask the drayman to apply the marking and if the drayman declines, railroad or contractor personnel will have to apply the proper markings.

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

Improper markings must be removed, obliterated, or securely covered.

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## **Section VII**

# **Emergency Response**

### **1. General Requirements**

When a leak involving a hazardous material shipment is found:

1. Do not accept the shipment for rail transportation or allow the shipment to continue in rail transportation.
  - a. Contact a supervisor who may elect to move the shipment to a designated holding area at the facility for further action.
  - b. The unit must not be put back in highway transportation.
  - c. Make sure that the shipping description entries and emergency response information are available in hard copy or in the computer.
2. Notify your supervisor or security personnel on site.
3. Take the appropriate action to protect yourself and others in the area.
  - a. Stay away from and upwind of any spilled material
  - b. Review the shipping papers and emergency response information or review the appropriate page of the ***Emergency Response Guidebook***.
  - c. Move to a safe location (see guidelines in emergency response information or ***Emergency Response Guidebook***).