United States Hazardous Materials Instructions for Rail

Revised 08/17/2005

TABLE OF CONTENTS

Introduction

1. Purpose

One of the rail industry's primary focuses continues to be the safe transportation of hazardous materials. Rail employees interact regularly with employees of other railroads. If subscribing railroads implement and consistently apply a standard set of rules and regulations, we will significantly enhance both our employees' safety and the safety of the communities through which we operate. Those railroads involved in developing the ***United States Hazardous Materials Instructions for Rail*** therefore worked together to create these instructions for employees who transport hazardous materials.

2. Policy

To handle hazardous material shipments or incidents safely and efficiently, without delay, and in accord with local, state, and federal regulations, it is imperative that you familiarize yourself with the ***United States Hazardous Materials Instructions for Rail***, in addition to other operating rules. These instructions provide guidance on how to perform your duties so that both you and the company will comply with Department of Transportation (DOT) regulations.

Transportation employees who inspect or transport hazardous material by rail must have a copy of and comply with the ***United States Hazardous Materials Instructions for Rail***.

Employees who transport hazardous materials must also have a copy of the current ***Emergency Response Guidebook*** (ERG) readily accessible while on duty.

The company will provide appropriate training to each employee who directly affects hazardous material transportation safety.

Always keep in mind that the company requires you to comply fully with the law. Compliance with the letter and spirit of our obligations is good corporate citizenship and is basic to achieving quality in all areas of our operations. Each of us has a duty to see that the railroad's actions are consistent with the highest legal and ethical standards.

3. Questions

For questions about the ***United States Hazardous Materials Instructions for Rail***, contact your immediate supervisor.

4. Print Date/Version

5. Additions and Corrections

Individual railroads will make changes in these instructions through appropriate means.

I. GENERAL INFORMATION

1. Definition of 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. 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 class, even if it meets the definition of more than one hazard class. Table 1 lists the hazard classes and divisions.

c. The term "hazardous material" includes hazardous substances, hazardous wastes, elevated temperature materials (HOT or MOLTEN), and marine pollutants.

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 – Poisonous (toxic) gas (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

Combustible Liquids

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

2. General DOT Requirement

No person may offer for transport, accept for transport, or transport a hazardous material unless doing so complies with all DOT regulations.

3. Expediting Hazardous Material Shipments

Loaded hazardous material shipments and loaded and residue/empty time-sensitive shipments (see Table 2) must be forwarded either:

a. within 48 hours (excluding Saturdays, Sundays, and holidays) after accepting them at the shipper's facility or receiving them in any yard, transfer station, or interchange point

or

b. when only bi-weekly or weekly service is performed, on the first available train toward the destination.

Exception: The 48-hour requirement does not apply to shipments that are constructively placed or placed for repairs.

Table 2. Time-Sensitive Shipments

20 Day

(1) Ethylene, refrigerated liquid – UN 1038

(2) Hydrogen, refrigerated liquid – UN 1966

(3) Chloroprene, stabilized – UN 1991

(4) Flammable Liquid, n.o.s. (Methyl Methacrylate Monomer, uninhibited) – UN 1993

(5) Hydrogen chloride, refrigerated liquid – UN 2186

30 day

(1) Styrene monomer, inhibited – UN 2055

(2) Flammable Liquid, n.o.s (Recycled styrene) – UN 1993

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

International shipments of hazardous materials, moving with proper International documents and International placards, may be transported in the United States (U.S.):

a. from a U.S. port of entry to their U.S. destination

b. when moving through the U.S. to a foreign destination

c. from a U.S. point of origin to the International port of entry, when the cars are:

(1) returning residue shipments

or

(2) regulated Internationally but not in the U.S.

II. REQUIRED DOCUMENTATION

1. General Requirements

No person may accept a hazardous material for shipment by rail transportation or transport a hazardous material in a train unless a member of the crew has each of the following documents:

a. acceptable shipping papers

b acceptable emergency response information

c. a document showing the current position of the hazardous material shipment in the train.

Note: The purpose of this documentation is to provide railroad personnel and emergency response personnel with accurate information about the hazardous materials.

Therefore, keep all current hazardous material documents neat and orderly and ensure that they are available in case of an emergency or for inspection. Properly discard superceded documents to eliminate the possibility of confusing or inconsistent information.

2. Acceptable Shipping Papers

Any one of the following documents is an acceptable shipping paper for hazardous material shipments, as long as it includes the required shipping description entries (see item 6 of this section), is legible, and is printed (manually or mechanically in English).

a. **Railroad-produced documents** -- for example, train consists, train lists, wheel reports, waybills, industry work orders, or other similar documents

b. **Customer-produced documents** -- for example, bills of lading [including United Parcel Services (UPS) hazardous materials packets], or switch lists

c. A **connecting carrier's documents**

d. A **hand-printed document** (printed, not cursive letters) – for example, radio waybills

e. A **hazardous waste manifest**.

3. Acceptable Emergency Response Information

Any of the following documents is acceptable emergency response information:

a. Emergency response information printed as part of the train list/consist

b. ***Emergency Response Guidebook*** (ERG)

c. Similar information provided by the customer -- for example, a Material Safety Data Sheet (MSDS).

4. Document Indicating Position in Train

Before moving hazardous material shipments in a train, a member of the crew must have a document that shows the current position in the train of each hazardous material shipment (loaded and residue/empty).

When making pickups or setouts, update the document before proceeding. The train crew may update the document by handwriting on it or by appending or attaching another document to it.

5. Checking for Shipping Papers

Make sure that a member of the crew has a paper copy of acceptable shipping papers, with the required entries, for each hazardous material when:

a. accepting hazardous material shipments at a customer's facility, interchange point, or other location

b. moving hazardous material shipments in a train

c. delivering hazardous material shipments to a customer's facility, interchange point, or other setout point

d. switching hazardous material shipments outside a yard.

Note: Shipping papers are not required in the switch crew's possession when moving hazardous material shipments within a yard or at a customer's facility.

Exception: Although they may remain placarded and marked, residue/empty "Elevated Temperature Material" tank cars do not require hazardous material shipping papers and emergency response information.

6. Reviewing Shipping Paper Entries

Review the shipping description entries for each hazardous material on the shipping papers and make sure that the following entries (a-g under this item) are present. (Figure 1 shows two formats for displaying the shipping description entries.)

Vertical Format

GATX 12345 (a)
1/TC (b) (note for future 10/01/2007)
SULFURIC ACID (c)
8 (d)
UN1830 (e)
PG II (f)
RQ (SULFURIC ACID) (h3)
EMERGENCY CONTACT: 800-424-9300 (g)
HAZMAT STCC = 4930040 (h11)

Horizontal Format

UTLX 12345 (a)

1/TC (b) // CHLORINE (c) // 2.3 (d) // UN1017 (e) // RQ (CHLORINE) (h3) // POISON-INHALATION HAZARD (h6) // ZONE B (h7) // MARINE POLLUTANT (CHLORINE) (h4) // EMERGENCY CONTACT: 800-424-9300 (g) // HAZMAT STCC = 4920523 (h11)

Items a through g are required entries for the basic hazardous materials description. Item h refers to additional entries that may appear. Items b through f must be in sequence, but other information may appear in parentheses between items b through f. **Note:** The identification number (e) may be found either before the proper shipping name (c) or after the hazard class (d).

Figure 1. Shipping Description Entries

a. Reporting marks (initials) and number

The shipping paper for a rail car, freight container, transport vehicle, or portable tank must include the reporting mark and number **only** when the reporting mark and number are displayed on the rail car, freight container, transport vehicle, or portable tank.

b. Total Quantity Notation

(1) For empty packagings, bulk packagings, or cylinders of Class 2 materials, some indication of the total quantity must be shown (certain abbreviations are acceptable). For example, “1 T/C” (1 tank car), “1C/L” (1 car load), or “10 CYL” (10 cylinders).

(2) For non-bulk packaging, the total quantity is given by both:

(a) weight or volume (including the unit of measure); for example, “100 lbs.”, “55 gal.”, “5 kg”, or “208 L”; and

(b) number and type of packages; for example “12 drums”, “12 UN 1A1”, “15 4G”, or “2 UN 3H1JERRICAN”.

(3) For Class 1 materials, the quantity must be the net explosive mass.

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 material.

(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) Residue/empty shipments in tank cars will begin with “Residue: Last Contained,” followed by the proper shipping name.

(4) For waste shipments, the word “Waste” will precede or be part of the proper shipping name of the material.

d. Hazard Class – numeric or worded

Reference: For further information on hazard classes, see the definition in the Glossary and the list of hazard classes and divisions in Table 1.

(1) For certain hazardous materials, a subsidiary hazard class, will appear in parenthesis 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.

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 [(e)] may be found either before the proper shipping name [(c)] or after the hazard class [(d)].

Exception: The following hazardous materials do not require identification numbers:

(1) gas generator assemblies for aircraft

(2) international shipments with the proper shipping name “Dangerous goods in limited quantities …” (the hazard class designation appears in place of the periods shown here).

f. Packing Group

The packing group must appear on the shipping papers 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:

Hazard Classes 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.

g. Emergency Response Telephone Number

Shipping papers for hazardous materials must show a 24-hour emergency response telephone number.

Exceptions: Emergency response telephone numbers are not required when the hazardous material is shown as a "Limited Quantity", "LTD QTY", or its 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) wheelchair, electric
(10) vehicle, flammable gas powered or vehicle, flammable liquid powered.

h. Additional Entries

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

(1) "Residue: Last Contained ..." (for packages emptied to the maximum extent possible)
(2) "HOT" notation added before a 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 Authority (for example, "FRA 0109123"), DOT Exemption (for example, "DOT-E 9271"), Special Approval Number (for example, "SA 920403"), or Competent Authority Number (for example, "CA 9701001")
(10) DOT-113 notation ("DOT-113, Do Not Hump or Cut-Off in Motion")
(11) Hazardous Materials Response Code (STCC "48xxxxx" or "49xxxxx")
(12) certain shipments described using Canadian regulations may contain both an Emergency Response Plan number and its activation telephone number (e.g., "ERP-2-1008 (800-555-5555) // SPECIAL COMMODITY")
(13) box of asterisks with or without wording (not required by DOT, but may appear on railroad-produced documents)
(14) Shipper's Certification
(15) "OIL" notation
(16) additional radioactive material entries
(17) name and address of the place of business in Canada of the consignor
(18) additional hazardous waste shipping description entries (see Section II, item 11, a)
(19) 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.

7. Handling Situations when Shipping Papers or Required Entries Are Not Available

When the appropriate shipping paper is not present or when all required entries on the shipping paper provided are not present:

a. Do not move the car until the appropriate shipping paper or the required entries on the shipping paper are present.

b. Take one of these three actions:

(1) Correct the existing document. Contact the customer or your supervisor, request the entries required to complete the shipping description, and legibly print those entries in the appropriate sequence (see Section II, item 6).

or

(2) Obtain the appropriate shipping paper from the shipper, your supervisor, or other appropriate person.

or

(3) Use a radio waybill.

(a) Contact your supervisor or dispatcher and request the appropriate entries for a radio waybill (see Figure 2, Radio Waybill).

The supervisor or dispatcher will provide the requested entries via radio or telephone to you.

(b) Complete the radio waybill using the information the supervisor or dispatcher provided.

Note: If a radio waybill form is not available, legibly print the required hazardous material information on a sheet of paper, including the car's initials and number (see Section II, item 6).

(c) Keep the radio waybill with the other shipping documents until either reaching the final destination or receiving another shipping paper with the appropriate entries.

(d) For each radio waybill issued, add the car initial and number and its position on the position-in-train document.

8. Checking for Emergency Response Information

a. When accepting and transporting hazardous material shipments, make sure a copy of the emergency response information for each shipment (see Section II, item 3) is available.

b. If emergency response information is **not** available, do **not** accept or transport the car.

9. Checking for Position-in-Train Document

a. When transporting hazardous material shipments in a train, make sure a member of the crew has a document indicating the current position in train of each hazardous material shipment.

b. If the document indicating the current position in train of each hazardous material is **not** available:

(1) Update the documents already in your possession.

or

(2) Create a hand-printed list showing the position in train of each hazardous material shipment.

Note: The list must show the reporting marks and number for each hazardous material shipment in the train and its actual position in the train.

Hazardous Material Radio Waybill
NOTE: Print legibly

HAZARDOUS MATERIAL

1. Train Number _____
2. Number of Cars from Head End _____
   (Update the position-in-train documents)
3. Car Initial & No. _____
4. 1/ Car Load or Residue Last Contained (Circle One)

*** Description of Articles ***

5. Number of Packages/Car _____
6. Proper Shipping Name _____

   _____
7. Technical Name (_____)
8. Primary Hazard Class _____

Secondary Hazard Class _____

9. UN/NA Id. No. _____
10. Packing Group (PG): I II III (Circle One)
11. Reportable Quantity (RQ): (_____)

*** Additional Information ***

12. Poison/Toxic Inhalation Hazard:

    Zone A, Zone B, Zone C, Zone D (Circle One)
13. Marine Pollutant (_____)
14. DOT Exemption Number(s): _____

    _____
15. Additional Information _____

_____

16. ERP Plan No.: _____
    (Canadian Shipments Only)
17. ERP Telephone No.: (_____) _____-_____
    (Canadian Shipments Only)
18. Emergency Contact (_____) _____-_____

    (_____) _____-_____

Completed:
Date ____/____/____ Time: _____ : _____ AM
MO DA YR PM

Figure 2. Example of Radio Waybill

10. Handling Shipping Papers Received from a Customer

When picking up a hazardous material shipment from the customer and the customer provides the original shipping papers:

a. Check for appropriate hazardous material entries.

b. For loaded shipments, make sure that the shipper's certification and signature (signature by hand or mechanical means) are on the shipping papers received from the customer.

11. 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 II, item 6, 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 _____

Norfolk Southern option . . . .

12. Handling Requests for Shipping Papers or Emergency Response Information

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

a. Provide **all** the information on the shipping papers for the shipment

and

b. Provide **all** available emergency response information.

III. INSPECTION

1. General Requirements

a. To determine that they are in acceptable condition for transportation, all loaded and residue/empty hazardous material shipments must be inspected at these points:

(1) before accepting them from the shipper

(2) when receiving them in interchange

Note: Run-through trains received in interchange may continue to the next inspection point before being inspected.

(3) when placing them in a train

(4) at other points where an inspection is required (e.g., 1000 mile inspection).

b. Accept or transport only those hazardous material shipments that conform to these instructions.

2. Inspection Procedures

From ground level, inspect all rail cars, trailers, and containers transporting hazardous materials, whether loaded or residue/empty (including flat cars transporting placarded or marked trailers or containers), for:

- leakage
- required placards and markings (including stenciling, car certificates, and test dates)
- secure fastening of closures.

a. Inspecting All Car Types

(1) Without climbing on the car, make sure that the hazardous material shipment is not leaking.

(a) Look for leaking contents – drips, wetness, or material on the car or on the ground.

(b) Look for a vapor cloud.

(c) Listen for hissing sounds of the contents escaping.

Note: If you find a hazardous material shipment leaking, follow the instructions in item 3 of this section and in Section VIII (Emergency Response), item 5.

(2) Make sure placards and markings are appropriate for the shipment and displayed correctly (see Section IV, Placards and Markings)

(3) Before accepting a hazardous material shipment from the shipper, make sure that:

(a) all customer loading and unloading lines are disconnected

(b) derails, chocks, and blue flags are removed

(c) all platforms are raised or in the clear.

b. Inspecting Tank Cars

Check placarded tank cars or tank cars marked with an identification number to see that:

(1) protective housing covers are closed

(2) manway cover swing bolts are up and in place

(3) all valves and fittings appear to be closed and secure

(4) visible plugs or caps (including bottom outlet caps) or other fittings are securely in place

Note: Heater coil caps may be left off.

(5) “double shelf couplers” and roller bearings are present.

c. Inspecting Gondola cars

(1) Look for loosely fastened gondola covers.

(2) Make sure the cover or tie downs do not foul any safety appliances.

d. Inspecting Hopper cars

Check that discharge gates are closed and secured.

e. Inspecting Shipments Placarded EXPLOSIVES 1.1 or 1.2

(1) In addition to the other inspection requirements in this section, for shipments placarded EXPLOSIVES 1.1 and 1.2:

(a) Look for indications of damage to the contents.

(b) Make sure that completed "car certificates" (see Figure 3, Car Certificates) are displayed on both sides of the rail car.

(i) Car certificates must be removed after the rail car, trailer, or container is unloaded.

(ii) Car certificates are either 7.1 by 7.1 inches or 5.9 by 7.9 inches in size.

(2) Do not accept or transport the car until all damage has been corrected and car certificates are in place.

_____ Railroad

No 1_____Station _____ 20___
I hereby certify that I have this day personally examined Car Number _____ and that the car is in condition for service and complies with the FRA Freight Car Safety Standards (49 CFR Part 215) and with the requirements for freight cars used to transport explosives prescribed by the DOT Hazardous Materials Regulations (49 CFR Part 174)

_____
Qualified Person Designated Under 49 CFR 215.11

No 2_____Station _____ 20___
I have this day personally examined the above car and hereby certify that the explosives in or on this car, or in or on vehicles or in containers have been loaded and braced; that placards have been applied, according to the regulations prescribed by the Department of Transportation; and that the doors of cars so equipped fit or have been stripped so that sparks cannot enter.

_____
Shipper or his authorized agent

_____
Qualified Person Designated Under 49 CFR 215.11

No 3_____Station _____ 20___
I hereby certify that I have this day personally supervised the loading of the vehicles or containers on and their securement to the above car.

_____
Shipper or railway employee inspecting loading and securement

Note 1: A shipper must decline to use a car not in proper condition.
Note 2: All certificates, where applicable, must be signed.

Figure 3. Car Certificates

3. Handling Defects

When a hazardous material shipment does not appear to be prepared for transportation:

a. Do not accept or pull the hazardous material shipment or allow it to continue in transportation.

b. Notify the customer, train dispatcher, yardmaster, or your immediate supervisor, as appropriate, and explain the problem.

IV. PLACARDS AND MARKINGS

1. General Requirement

Hazardous material shipments, both loaded and residue/empty, must not be transported unless they are properly placarded and marked.

2. Placard Requirements

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. (see Figure 4 for pictures of placards).

a. Placards are required when transporting **any quantity** 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 Poisonous (toxic) gas (material poisonous by inhalation)
- 4.3 Dangerous when wet material
- 5.2 Organic peroxide, Type B, liquid or solid, temperature controlled
- 6.1 Poisonous (toxic) material (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** 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 2a above
- 6.1 Poisonous (toxic) material (other than material poisonous by inhalation)
  Note: For domestic transportation of Class 6.1 PG III materials, a POISON (TOXIC) placard may be used in place of a PG III placard.
- 8 Corrosive material
- 9 Miscellaneous hazardous material.
  Exception: For US/Canadian transportation, Class 9 placards are not required. However, bulk shipments of Class 9 materials must be marked with the identification number (see Section IV, item 4).

Combustible Liquids

Mixed hazardous materials in this item.

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) Cars which have been cleaned and purged

(9) Radioactive White I and Yellow II labels

(10) Class 1.4S

(11) Shipments of molten sulfur moving to the United States from Canada, as long as the identification number and the words “MOLTEN SULFUR” appear on each side of the tank car.

d. Placards may be displayed for hazardous materials, even when not required, as long as the placard is appropriate for the contents of the shipment. If displayed, then all instructions for that placard apply.

e. Certain hazard classes require the display of the primary placard on a white square background, including (see Figure 4, Placard Chart): *(when required to be affixed to the rail car)*

(1) Hazard Class 1.1 or 1.2 explosives

(2) Hazard Class 2.3 or 6.1 poison inhalation hazard zone A material

(3) Hazard Class 2.1 flammable gases loaded in DOT-113 tank cars.

f. The DANGEROUS placard may be used instead of separate placards when a rail car, trailer, or container is loaded with non-bulk packages of two or more classes of hazardous materials from this section’s item 2b.

***Note**:* When 1,000 kg. (2,205 lbs.) or more of one class of material is loaded at one loading facility, the placards for that class as specified in item 2b of this section must also be applied.

g. Some shipments of hazardous materials require subsidiary placards that represent secondary hazards. These placards must not display a 4-digit identification number, but will display the hazard class or division.

h. For residue/empty hazardous materials shipments, the rail car, trailer, or container must remain placarded in the same manner as the loaded shipment, unless the packaging has been:

(1) cleaned or residue; or

(2) purged of vapor to remove any hazard; or

(3) refilled, with a material requiring different placards or no placards, to such an extent that any residue remaining in the packaging is no longer hazardous.

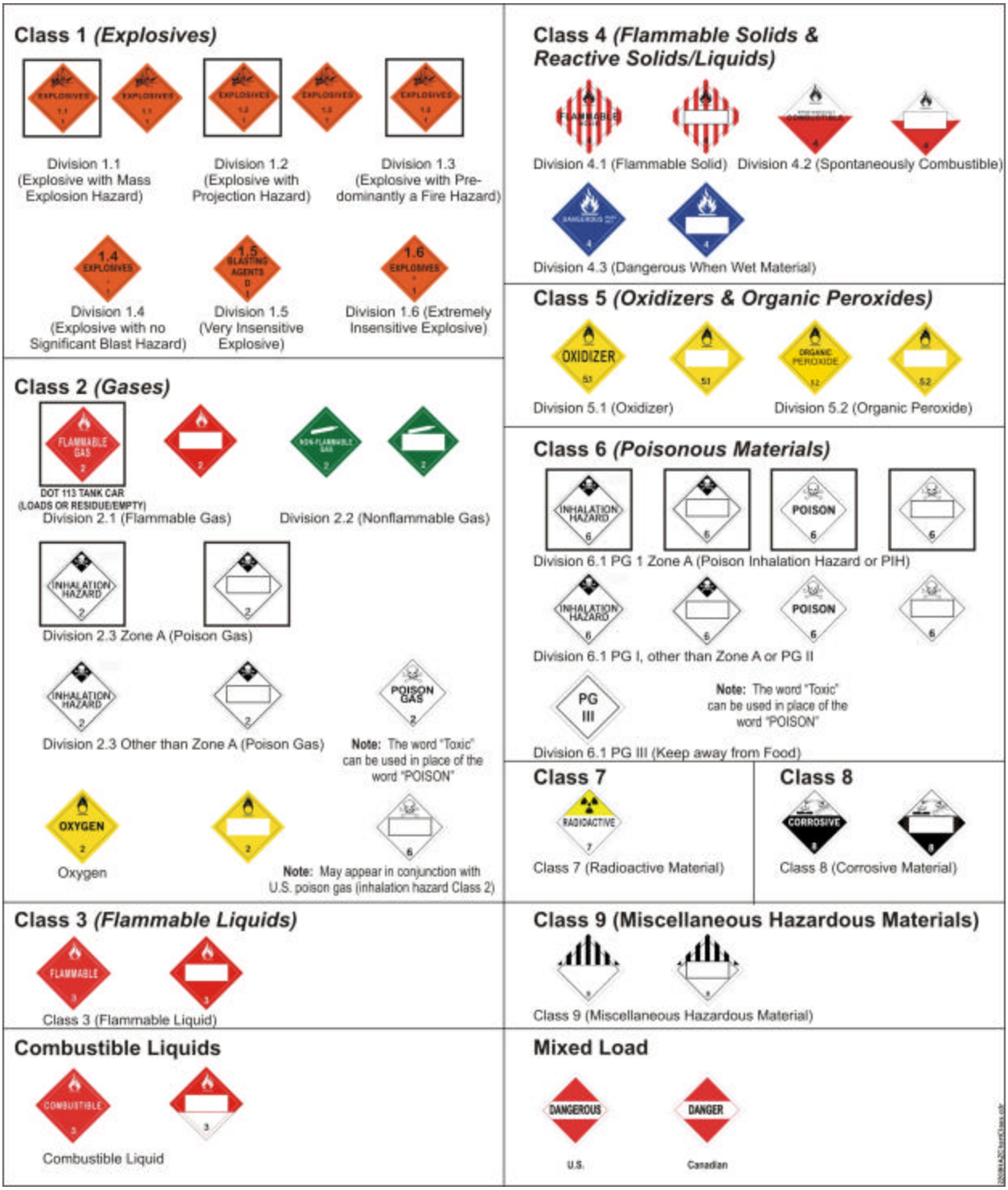
3. Inspecting for Placards

a. Make sure that all required placards are:

(1) consistent with the shipping paper information

(2) on both sides and both ends of the shipment

Figure 4
Placards for Hazardous Materials by Hazard Class



(3) in placard holders or securely attached to the rail car, trailer, or container

(4) not damaged, faded - color should be similar to the color printed in this document (see Figure 4, Placard Chart), or obscured by dirt or car part

(5) oriented horizontally, so you can read them from left to right

(6) readily visible from the direction they face, except for placards on the ends of trailers and containers in or on a rail car.

b. When **picking up** a hazardous material shipment at the customer's facility or siding, and a placard is not correct, does not meet the standards above, or is missing:

(1) Notify the customer, train dispatcher, yardmaster, or your supervisor, as appropriate.

(2) Do not accept the hazardous material shipment until corrections have been made.

c. When a placard does not meet the standards above or is discovered missing **en route**, notify the train dispatcher, yardmaster, or your supervisor, as appropriate. They will arrange to correct the problem at the next inspection point.

4. Marking Requirements and Inspecting for Markings

Marking - a descriptive commodity name, identification number, caution (such as INHALATION HAZARD, HOT, MOLTEN, or MARINE POLLUTANT), or tank car test date displayed on hazardous material shipments.

Make sure that markings, including the identification number, marine pollutant, HOT, and Inhalation Hazard marks, the commodity name, and tank car test dates appear on bulk packagings of materials described on the shipping papers, as follows:

a. Identification Number Markings

(1) Identification number markings must appear on both sides and both ends of:

(a) Bulk packages of hazardous materials (including Class 9 when no placard is required)

(b) Rail cars, 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, are loaded at one location and the transport vehicle does not contain any other hazardous or non-hazardous materials.

Exception: For shipments of molten sulfur from Canada, the identification number marking must appear only on both sides of the tank car.

(2) Identification numbers can be displayed in one of three ways, as Figure 5 shows:

Figure 5. 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 appear as required above and agree with the shipping paper entries.

(5) When **picking up** a hazardous material shipment at the customer's facility or siding or at an interchange point and the identification number is not correct, is not legible, or is missing:

(a) Notify the customer, train dispatcher, yardmaster, or your supervisor, as appropriate.

(b) Do not accept the hazardous material shipment until corrections have been made.

(6) When an identification number is not correct, is not legible, or is missing **en route**, notify the train dispatcher, yardmaster, or your supervisor, as appropriate. They will arrange to correct the problem at the next inspection point.

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.

b. MARINE POLLUTANT Mark

(1) For a material described on the shipping papers as a marine pollutant and the shipment does not require a placard, make sure that the MARINE POLLUTANT mark appears on both sides and both ends of bulk packagings in one of the formats in Figure 6.

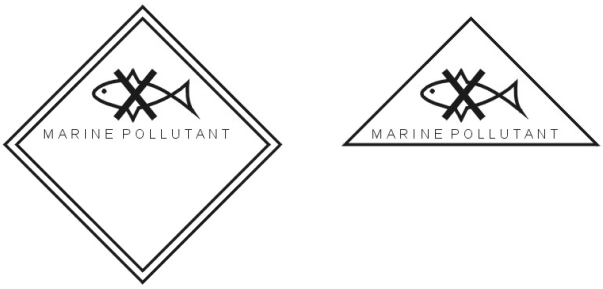


Figure 6. Marine Pollutant Mark

Note: MARINE POLLUTANT marks are not required when the bulk packaging displays a placard.

(2) When **picking up** a hazardous material shipment at the customer's facility or siding or at an interchange point, and a required MARINE POLLUTANT mark is not legible or is missing:

(a) Notify the customer, train dispatcher, yardmaster, or your supervisor, as appropriate.

(b) Do **not** accept the hazardous material shipment until corrections have been made.

(3) When a required MARINE POLLUTANT mark is not legible or is missing **en route**, notify the train dispatcher, yardmaster, or your supervisor, as appropriate. They will arrange to correct the problem at the next inspection point.

c. HOT Mark

(1) For a material described on the shipping papers with the words "HOT," "ELEVATED TEMPERATURE," or "MOLTEN" and transported in a bulk packaging, the word "HOT" 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 7)

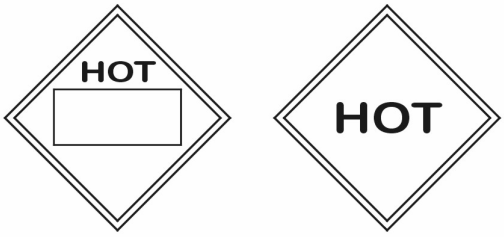


Figure 7. HOT Mark

or

(b) on the packaging itself.

Note: The word "HOT" is **not** required for bulk packagings of molten aluminum or molten sulfur marked "MOLTEN ALUMINUM" or "MOLTEN SULFUR," as appropriate.

Note: Residue/empty shipments that last contained elevated temperature material (HOT), 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 empty, the shipment may be accepted and moved in rail transportation without the hazardous material shipping description entries, even though the HOT mark and identification number are displayed.

(2) When **picking up** a hazardous material shipment at a customer's facility or siding or at an interchange point and a HOT mark is not legible or is missing:

(a) Notify the customer, train dispatcher, yardmaster, or your supervisor, as appropriate.

(b) Do **not** accept the hazardous material shipment until corrections have been made.

(3) When a HOT mark is not legible or is missing **en route**, notify the train dispatcher, yardmaster, or your supervisor, as appropriate. They will arrange to correct the problem at the next inspection point.

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 rail car, 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 bulk packaging.

(2) When **picking up** a hazardous material shipment at the customer's facility or siding or at an interchange point and the words "INHALATION HAZARD" are illegible or missing:

(a) Notify the customer, train dispatcher, yardmaster, or your supervisor, as appropriate.

(b) Do **not** accept the shipment until corrections have been made.

(3) When the "INHALATION HAZARD" marking is illegible or missing **en route**, notify the train dispatcher, yardmaster, or your supervisor, as appropriate. They will arrange to correct the problem at the next inspection point.

e. COMMODITY NAME

(1) For intermodal tanks of hazardous materials, the proper shipping name of the material must be legibly marked (in at least 2-inch high letters) on two opposing sides of the tank.

(2) When **accepting** an intermodal tank of hazardous materials from the shipper or in interchange and the commodity name is illegible or missing:

(a) Notify the customer, train dispatcher, yardmaster, or your supervisor, as appropriate.

(b) Do **not** accept the shipment until corrections have been made.

(3) The commodity name on a tank car or intermodal tank must match the proper shipping name on the shipping papers.

(4) When the commodity name on a tank car or intermodal tank is discovered illegible or missing **en route**, notify the train dispatcher, yardmaster, or your supervisor, as appropriate. They will arrange to correct the problem at the next inspection point.

f. TANK CAR TEST DATES

(1) Make sure that the stencils describing the tank car specification and test dates are legible. These stencils will appear near or in association with the specification marking.

(2) Check that the tank car test dates for pressure relief devices (PRD), tank, and interior heater coil are current (a car is currently within the test date until the last day of the year shown) (see Figure 8).

		STATION STENCIL	QUALIFIED	DUE
TANK QUALIFICATION				
THICKNESS TEST				
SERVICE EQUIPMENT				
PRD:				
LINING				
88.B.2 INSPECTION				
STUB SILL INSPECTION				

Tank Car Test Date (new style)

DOT 112J340W
Disc 000LB
Safety Valve 000LB
Tested m/yy Due m/yy
Tank 000LB
Tested 19yy Due yyyy
Heater Pipes 000LB
Tested 19yy Due yyyy
Blt. mm/yy
Conv. mm/yy

Figure 8. Tank Car Test Date (older style example)

(3) When the test date is overdue, do not accept loaded tank cars from the shipper.

(4) When found en route, car may proceed to destination after contacting the supervisor.

g. FUMIGANT Mark

As information, the purpose of the FUMIGANT mark (see Figure 9) is to warn persons unloading the rail car, trailer, or container that it has been fumigated and that they must take appropriate precautions before unloading the car. The (*) on the mark will be replaced by the name of the fumigant.

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.

Shipping papers may display hazardous materials shipping description entries for shipments that are fumigated.

Figure 9. Fumigant Mark.

V. SWITCHING

1. General Requirement

Switch placarded hazardous material shipments only in compliance with the restrictions on the Switching Chart (see Figure 10).

Switching is defined as “the operation of moving rail cars within a yard in order to place them in a train or on a classification, repair, or storage track.” It also includes making pickups and setouts at a customer's facility or interchange points. It does **not** include moving rail cars to or from a shipper's facility or industry track into or out of the yard.

WHEN RAIL CARS ARE CUT OFF IN MOTION, THE COUPLING SPEED MUST NOT EXCEED 4 MILES PER HOUR.

2. Safety

Before coupling, position yourself toward the end of a tank car, if possible, away from the manway and valves. Contents of tank cars may splash during or immediately following coupling, due to either improperly secured closures or the impact of coupling.

3. When to Use the Switching Chart

Refer to the Switching Chart:

a. when moving placarded hazardous material shipments in a yard to place them in a train or on a classification, repair, or storage track

b. when making pickups or setouts of placarded hazardous material shipments at a customer's facility, interchange point, or other setout point.

4. How to Use the Switching Chart

a. Select the applicable column and row of the Switching Chart. To do so:

(1) Identify the placards and/or markings applied to the car, either from information on the shipping papers or from observation.

Note: When placards are displayed but are not required by regulation (permissive placarding), the rail car must be switched as required for the placard displayed.

(2) Determine whether the car is loaded or empty.

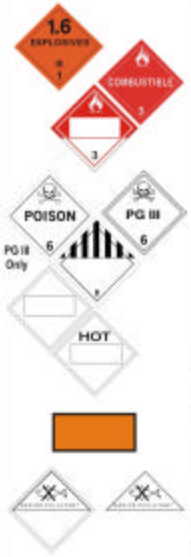
Note: Residue/empty tank cars are identified on switch lists, track lists, and track inquiries with an “E” or “DE” in the appropriate field. The notation “RESIDUE: LAST CONTAINED” on the shipping papers indicates a residue/empty shipment.

(3) Identify the car type involved by observation (e.g. tank car, hopper car, gondola, etc.).

b. Find the applicable section on the chart, based on the placard or marking applied, the load/empty status, and the car type.

c. Follow the restrictions associated with the placard or marking as the "X"s in the columns indicate.

Figure 10. SWITCHING CHART

GROUP A	GROUP B	GROUP C	GROUP D		GROUP E		GROUP F
		 DOT 113 TANK CAR (LOADS OR RESIDUE/EMPTY)  Note: Applies only to cask cars with spent nuclear fuel or high-level radioactive waste	   Note: Only for Anhydrous Ammonia UN 1005 		 Canadian or International Canadian		
Any Car	Any Loaded Car	Any Car	Loaded Tank Car	Other Loaded Car	Loaded Tank Car	Other Loaded Car	Any Car	**INSTRUCTIONS**
X								1 Separate these cars from an engine by at least one non-placarded car or by one Group F placarded or marked car. Do not place where there is any probable danger of fire (ex. switch heaters). Do not place under bridges, under overpasses or along passenger stations.
X	X	X		X*		X*		2 These cars must not be: • Cut off in motion, • Struck by any free rolling car; or • Couple into with more force than needed to make the coupling.
			X					3 These cars must not be cut off in more than two car cuts. No more than two car cuts can couple into these cars.
			X		X			4 When a person must ride a rail car to operate the hand brake: • Verify the hand brake is working properly. • Do not cut cars off until all preceding cars are clear of the lead • Do not cut off any cars to follow until the lead is clear.

HOW TO USE THIS CHART

a. Select the applicable column and row of the Switching Chart. To do so:

(1) Identify the placards and/or markings applied to the car, either from information on the shipping papers or from observation.

Note: When placards are displayed but are not required by regulation (permissive placarding), the rail car must be switched as required for the placard displayed.

(2) Determine whether car is loaded or empty.

Note: Residue/empty tank cars are identified on switch lists, track lists, and track inquiries with an "E" or "DE" in the appropriate field. The notation "RESIDUE: LAST CONTAINED" on the shipping papers indicates a residue/empty shipment.

(3) Identify the car type involved by observation (e.g. Tank car, hopper car, gondola, etc.).

b. Find the applicable section on the chart, based on the placard or marking applied, the load/empty status, and the car type.

c. Follow the instructions associated with the placard or marking as the "X"s in the columns indicate.

EQUIVALENT PLACARDS

Cars with placards displaying 4-digit identification numbers will be handled the same as cars with word description placards.

*Applies only to placarded flatcars, freight containers, trailers, portable tanks, tote bins, intermodal portable tanks, or U.N. portable tanks.

NOTE: The word "toxic" can be used in place of the word "poison" on placards displayed in Group E and Group F.

VI. TRAIN PLACEMENT

1. General Requirement

Place placarded hazardous material shipments in a train so as to comply with the instructions on the Position-in-Train Chart (Figure 11).

A **Train** is one or more engines coupled, with or without rail cars, displaying a marker, requiring an appropriate air brake test, and authorized to operate on a main track.

2. When to Use the Position-in-Train Chart

Use the chart to make sure placement position in train is correct:

a. before a train departs the initial terminal

b. before a train departs an intermediate station where pickups and setouts were made en route

c. when delivering cars to interchange tracks that are owned and operated by another railroad.

3. How to Use the Position-in-Train Chart

a. Select the applicable column of the Position-in-Train Chart. To do so:

(1) Identify the placards and/or markings applied to the car, either from the shipping papers or from observation.

Note: When placards are displayed but are not required by regulation (permissive placarding), the rail car must be switched as required for the placard displayed.

(2) Determine whether the car is loaded or residue/empty.

Note: The notation “RESIDUE: LAST CONTAINED” on the shipping papers indicates a residue/empty shipment.

(3) Identify the car type involved by observation (e.g. tank car, hopper car, gondola, etc.).

b. Find the applicable section on the chart, based on the placard or marking applied, the load/residue/empty status, and the car type.

c. Follow the instructions associated with the placard or marking, as the "X"s in the columns indicate.

4. General Information

a. For train placement purposes, each platform or well of an intermodal rail car counts as one car.

b. A buffer car is a:

(1) non-placarded rail car

(2) rail car with a placard or marking shown in Group E

(3) residue/empty tank car, as long as it complies with Instruction # 2 on the Position-in-Train Chart

(4) placarded rail car, other than a tank car, as long as it complies with Instruction # 6 on the Position-in-Train Chart.

c. The word “TOXIC” can appear in place of the word “POISON” on placards.

d. A business car train is not a passenger train**.**

Figure 11. POSITION IN TRAIN CHART

VII. KEY TRAINS

1. General Requirement

Trains carrying specified numbers of loaded rail cars, trailers, or containers of hazardous materials must be operated as "Key Trains."

2. Key Train Definition

A "Key Train" is any train as described in either a, b, or c below:

a. one (1) or more loads of spent nuclear fuel (SNF) or high level radioactive waste (HLRW) moving under the following Hazardous Materials Response Codes -- 4829135, 4929125, 4929135, 4929140, 4929150

or

b. 5 or more loaded tank cars containing materials that require the phrase "Poison-Inhalation Hazard" (Hazard Zone A, B, C, or D on the shipping papers) or anhydrous ammonia (Identification Number 1005)

or

c. a combination of 20 or more loaded hazardous materials shipments or intermodal portable tank loads of a combination of "Poison-Inhalation Hazard" (Hazard Zone A, B, C, or D on the shipping papers), flammable gas (2.1), anhydrous ammonia (Identification number 1005), Class 1.1 or 1.2 explosives, or environmentally sensitive chemicals (see Table 3).

Exception: Do not count box cars, trailers, or containers carrying mixed loads of hazardous materials when determining key train status.

Table 3. Environmentally Sensitive Chemicals

Allyl Chloride
Carbon Tetrachloride
Chlorobenzene
Chloroform
Dichloropropane/Dichloropropene Mixture
Dichloropropene
Ethyl Chloride
Ethylene Dibromide
Ethylene Dibromide and Methyl Bromide Mixtures
Ethylene Dichloride
Epichlorohydrin
Methyl Chloroform (1, 1, 1 Trichloroethane)
Methylene Chloride (Dichloromethane)
Methylene Chloroform (Dichloromethane)
Methylene Chloride/Chloroform Mixture
Perchloroethylene (Tetrachloroethylene)
Perchloroethylene/Trichloroethylene Mixture
Trichloroethylene

3. Identifying Key Trains

a. A computer-generated train consist/ train list will identify Key Train status in the header block on the first page.

b. When a computer-generated train consist/train list is not available, or hazardous material cars are added to a train, the conductor must review the shipping papers for all hazardous material cars and determine Key Train status.

c. After picking up or setting out hazardous material shipments **en route**, the Key Train status may change. The conductor must determine whether or not Key Train status has changed and, if so, promptly notify the train dispatcher.

4. Instructions for Operating Key Trains

a. The maximum authorized speed for Key Trains is 50 MPH, unless further restricted.

Note: Where lower speed restrictions are in effect, or when the train is restricted to a lower speed for other reasons, the lower speed governs.

b. A key train will hold the main track, when practicable, unless a speed of greater than 10 MPH is authorized for the siding or auxiliary track.

c. Only cars equipped with roller bearings will be allowed in a Key Train.

d. When a defect in a Key Train is reported by a wayside/trackside warning detector but a visual inspection fails to confirm evidence of a defect, the train must not exceed 30 MPH until it has passed over the next wayside detector or is delivered to a terminal for a mechanical inspection. If the same car sets off the next detector or is found to be defective, it must be set out from the train.

VIII. EMERGENCY RESPONSE

1. General Requirement

When an emergency occurs, SAFETY IS OF FIRST IMPORTANCE.

a. Make an emergency call as radio rules require.

b. Look for a fire or vapor cloud.

c. Determine the status of crew members in the area.

d. Warn and keep everyone at a safe distance.

2. When a Fire or Vapor Cloud is Visible

a. Take the shipping papers (including the emergency response information) and move yourself and other crew members uphill and upwind at least one half mile. Stay out of ditches and low areas.

b. Do not smoke or use fusees.

c. Provide the train dispatcher or yardmaster with as much of the following information as is available:

(1) Specific location of the emergency (station, mile post location, nearest street or crossing)

(2) Type of emergency

(3) Status of crew members

(4) Cars involved, including each car's initials and numbers and their extent of involvement (for example, leaking, derailed, or on fire)

(5) Surroundings (e.g., proximity to populated areas, local bodies of water, or nearby drainage ditches or storm sewers; description of terrain; location of access roads; weather conditions)

(6) Resources necessary to handle the situation (for example, fire, ambulance, and law enforcement agencies)

(7) Location where a crew member with shipping papers will meet arriving emergency response personnel.

d. Once you are in a safe location:

(1) Identify yourself and cooperate with the local emergency response personnel as described in Section VIII item 4.

(2) Review your shipping papers and emergency response information.

(3) If necessary, move to the farthest distance recommended in:

(a) the Evacuation Section of the emergency response information accompanying the shipping papers

or

(b) information from the ***Emergency Response Guidebook***.

3. When No Fire or Vapor Cloud is Visible

a. Review the shipping papers for hazardous material shipments.

b. Take the shipping papers (including the emergency response information) and inspect the train to identify the rail cars, trailers, or containers involved, and look for indications of the release of hazardous materials.

c. When you encounter a hazardous material release, unusual smells, or noises during this inspection:

(1) Avoid contact with the material and its vapors.

(2) Move yourself and other crew members upwind and uphill at least one half mile. Stay out of ditches and low areas.

(3) Eliminate any ignition sources (no smoking, no fusees).

(4) Warn all bystanders to stay away.

d. After completing the inspection, notify the train dispatcher or yardmaster with as much of this information as is available:

(1) Status of crew members

(2) Cars involved, including each car's initials and numbers and their extent of involvement (for example, leaking, derailed, or on fire)

(3) Surroundings (e.g., proximity to populated areas, local bodies of water, or nearby drainage ditches or storm sewers; description of terrain; location of access roads; weather conditions)

(4) Resources necessary to handle the situation (for example, fire, ambulance, and law enforcement agencies)

(5) Location where a crew member with shipping papers will meet arriving emergency response personnel.

e. Once you are in a safe location:

(1) Identify yourself and cooperate with the local emergency response personnel as described in Section VIII item 4.

(2) Review your shipping papers and emergency response information.

(3) If necessary, move to the farthest distance recommended in:

(a) the Evacuation Section of the emergency response information accompanying the shipping papers

or

(b) information from the ***Emergency Response Guidebook***.

4. Cooperating with Local Emergency Responders

a. Share any requested information from the shipping papers with emergency response personnel.

(1) Provide an extra copy of the train consist/Train List, when available.

Note: Retain any waybills and a copy of the train consist/Train List until you can deliver them to the first railroad manager on the scene.

(2) Provide a copy of the emergency response information provided with the shipment.

b. Help emergency response personnel identify cars and the commodities involved. Use shipping papers or observations from a safe location to accomplish this task.

c. Give the first railroad manager on the scene an oral description of the incident and indicate any assistance you provided emergency responders.

d. Remain at the scene, at a safe distance, until a railroad manager relieves you.

e. A railroad spokesperson will handle discussing the incident with the media or other non-emergency response personnel.

5. Handling Leaking Hazardous Material Shipments

Take these actions when there is any sign of leakage:

a. Do **not** allow the hazardous material shipment to continue in transportation until the leak is controlled.

Note: Leaking hazardous material shipments may be moved, with proper railroad authority, only as far as necessary to reduce or eliminate the immediate threat of harm to human health, the environment, or railroad operations. Movement of leaking hazardous material shipments may require government approval.

b. When it is necessary to move a leaking hazardous material shipment, use an adequate number of buffer cars between the locomotive and the leaking car, to prevent chemical exposure.

GLOSSARY

Buffer car – a non-placarded rail car, a railcar with a placard or marking shown in Group F on the Switching Chart or Group E on the Position-in-Train Chart, a residue/empty tank with no other restrictions, or a placarded rail car with no other restrictions.

Bulk packaging - packaging with capacity greater than 119 gallons or 882 pounds. For example, bulk bags, intermodal (IM) portable tanks, portable tanks, portable bins, gondola cars, hopper cars, or tank cars.

Container – any freight container, intermodal (IM) portable tank, portable tank, or portable bin.

Emergency – an unforeseen combination of circumstances or the resulting state that calls for immediate action (for example, derailment and leaks).

Emergency response information - hazard and response information for each hazardous material, contained in either the train documentation or the Emergency Response Guidebook (ERG), to assist response personnel at hazardous material incidents.

Hazard class - the category of hazard assigned to a material. A class may be subdivided into divisions for clarity. A class may be expressed as a number or with words.

Hazardous material - 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. The term “hazardous material” includes hazardous substances, hazardous wastes, elevated temperature materials (HOT or MOLTEN), and marine pollutants.

Hazardous material shipment - a hazardous material in rail cars, trailers, or containers in rail transportation. All hazardous material shipments require shipping papers. When moved in rail cars, trailers, or containers, hazardous material shipments may or may not be placarded or marked with an identification number.

Hazardous waste manifest - a document specifically for tracking hazardous wastes in transportation. It contains the shipping description and identifies the waste generator, each transporter, and the disposal facility.

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 paper as "Zone A." Zone A is the most hazardous, and Zone D is the least hazardous.

Interchange - the process of transferring rail cars to or from another railroad.

Limited quantity (LTD QTY) - a term used on shipping papers to indicate a hazardous material shipment which is allowed an exception to the labeling, packaging, and placarding requirements because the hazard associated with a small package is low.

Marking - a descriptive commodity name, identification number, caution (such as INHALATION HAZARD, HOT, MOLTEN, or MARINE POLLUTANT), or tank car test date displayed on hazardous material shipments. (See Section D for marking requirements.)

N.O.S. - initials, found on shipping papers, which mean "Not Otherwise Specified."

Non-bulk packaging - packaging with a capacity equal to or less than 119 gallons or 882 pounds. For example, bags, bottles, boxes, cylinders, or drums.

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 is not subject to the hazardous material regulations when transported by rail.

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 papers) indicates great danger.
- Packing Group II (shown as "PG II" or "II" on the shipping papers) indicates medium danger.

- Packing Group III (shown as "PG III" or "III" on the shipping papers) indicates minor danger.

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. Some placards must be displayed on a square background which is white with a black border (see Figure 4, page 18 for pictures of placards).

Placarded car - a rail car displaying placards in accordance with DOT regulations.

Poison/Toxic Inhalation Hazard (PIH or TIH) or Inhalation Hazard - terms used to identify certain gases and liquids that may cause health problems if breathed in very low concentrations for short periods of time.

Position-in-Train document – a document showing the current position of all hazardous material shipments within the train. This document could be the train consist/Train List or a separate document specifically for this purpose.

Radio waybill – a form used to record shipping description entries provided orally.

Rail car – equipment used in rail transportation. For example, box car, flat car, gondola car, hopper car, tank car, or caboose, but not an engine**.**

Residue – the hazardous material remaining in a packaging, including a tank car, after its contents have been unloaded to the maximum extent possible. It is indicated on the shipping papers by the phrase "RESIDUE: LAST CONTAINED" before the proper shipping name.

Special Car Handling Instructions (SCHI) Code *(specific to BNSF operations)* – Two-letter code used to identify the primary placard required for a hazardous material shipment.

Shipper's Certification - a signed (or electronically printed) declaration on the shipping paper provided by the shipper to the first transporter 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 either:

> "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."
>
> ***Note***: A shipper's certification is required on any shipping paper that the customer provides to the crew for loaded hazardous material cars.

Shipping paper - any document providing the appropriate entries for a hazardous material shipment. (See section B for shipping paper requirements.)

Switching - the operation of moving rail cars within a yard, at a customer's facility, or at an interchange point, in order to place them in a train or on a classification, repair, or storage track. It does **not** include moving rail cars to or from a shipper's facility or industry track into or out of the yard.

Technical name - a recognized chemical name used in scientific and technical handbooks, journals, and texts to further identify a hazardous material.

Toxic Inhalation Hazard (TIH) - terms used to identify certain gases and liquids that may cause health problems if breathed in very low concentrations for short periods of time.

Train - one or more engines coupled, with or without rail cars, displaying a marker, requiring an appropriate air brake test, and authorized to operate on a main track.

Yard - a system of tracks, other than main tracks and sidings, used for making and breaking up trains and for other purposes, such as repair or storage of cars.