



BNSF Railway Safety Vision

We believe every accident or injury is preventable. Our vision is that BNSF Railway will operate free of accidents and injuries. BNSF Railway will achieve this vision through:

A culture that makes safety our highest priority and provides continuous self-examination as to the effectiveness of our safety process and performance...

A work environment, including the resources and tools, that is safe and accident-free where all known hazards will be eliminated or safe-guarded...

Work practices and training for all employees that make safety essential to the tasks we perform...

An empowered work force, including all employees, that takes responsibility for personal safety, the safety of fellow employees, and the communities in which we serve.

This version contains the following updated pages:

July 1, 2026: Title page, 41.

United States Hazardous Material Instruction for Rail

IN EFFECT AT 0001
Central, Mountain, and
Pacific Continental Time

Monday, May 11, 2026
(Including updates through
July 1, 2026)

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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 Material 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 Material 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.

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 full compliance 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 employee 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 Material Instructions for Rail**, contact your immediate supervisor or the HazMat Department at HazmatCompliance@BNSF.com.

4. In effect 0001, Tuesday, June 1, 2021.

5. Additions and Corrections

Individual railroads will make changes in these instructions through appropriate means. (BNSF will use General Order.)

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I. GENERAL INSTRUCTIONS

1. Definition of Hazardous Material

- 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.

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 (toxic) 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 (regulated in bulk packagings; also regulated in non-bulk packagings if a hazardous substance, hazardous waste or marine pollutant)

Table 1. Hazard Classes and Divisions

2. General DOT Requirement

- A. 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 and International regulations.
- B. No person may transport a hazardous material in commerce unless the hazardous material is handled and transported according to DOT regulations.

3. Expediting Hazardous Material Shipments

Loaded hazardous material shipments 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, intermediate (transfer) station, or interchange point,
or
- B. When only bi-weekly or weekly service is performed, on the first available train toward the destination.

Exceptions:

- The 48-hour requirement does not apply to shipments that are constructively placed or placed for repairs.
- Only at locations designated in DOT Special Permit 14436, UN1005 (Anhydrous Ammonia) and TIH/PIH shipments may be held to run on specified days. The Special Permit allows this traffic to be held more than 48 hours, but not to exceed 14 days. These locations must maintain a copy of DOT Special Permit. A copy of SP-14436 may be obtained on the BNSF Employee Portal, Hazmat Department page.

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 these instructions.
- 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. Speed Restrictions for Loaded Tank Cars containing PIH/TIH and Inhalation Hazard Materials

Loaded tank cars identified on shipping documents with the phrase "POISON (TOXIC)-INHALATION HAZARD" or "INHALATION HAZARD" and/or SCHI code "IH" are restricted to 50 MPH.

6. Trackside Warning Device Indications

Non-Key Trains

- A. When a freight train is stopped by a trackside warning device and the indicated axle is on a loaded, placarded, non-intermodal car containing hazardous material, apply the following:
 - 1. When a hot box/bearing or hot wheel condition is indicated, the car must be set out.
 - 2. When a dragging equipment or high/wide/shifted load condition is indicated, the car must be set out. However, the indicated car may remain in the train if the condition is corrected or inspected by mechanical personnel and no defects are found.
- B. When a freight train (excluding intermodal trains) is stopped by a trackside warning device for a hot journal/bearing or hot wheel condition the following will apply:
 - 1. If no loaded hazardous material cars are behind the indicated car/axle and no defect is found, the car may continue in the train.
 - 2. If indicated car/axle is ahead of cars containing loaded hazardous material (excluding Class 9 shipments such as asphalt, sulfur, etc.), the car must be set out.

Key Trains

When a Key Train is stopped by a trackside warning device, apply the following:

- 1. When a hot journal/bearing or hot wheel condition is indicated, the car (hazmat or not) must be set out.
- 2. When a dragging equipment or high/wide/shifted load condition is indicated, the car (hazmat or not) must be set out. However, the indicated car may remain in the train if inspected by mechanical personnel and no defects are found or the condition is corrected.

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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 documents.
- B. Acceptable emergency response information.
- C. A document showing the current position of the hazardous material shipment in the train.

Notes:

- 1. DOT Special Permit 20954 and Transport Canada Equivalency Certificate SR-13374 authorizes the use of electronic means to maintain and communicate on board train consist and shipping information in lieu of paper documentation. BNSF's Mobile Train Reporting (MTR) complies with special permit 20954 and equivalency certificate SR-13374.
- 2. 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 updated, neat and orderly and ensure that they are available in case of an emergency or for inspection.
- 3. Electronic documents are only acceptable in lieu of paper documents with DOT Special Permit 20954 (United States) or Transport Canada Equivalency Certificate SR-13374 (Canada).
- 4. Special Permits can be accessed through BNSF Rules and Instructions within the Rules and Timetables App and on the Employee Portal, Hazmat Department page.

2. Acceptable Shipping Documents

Any one of the following documents is an acceptable shipping document 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. **BNSF-produced documents** — for example, train consists, train lists, wheel reports, waybills, industry work orders, or other similar electronic or paper documents
- B. **A connecting carrier's documents**
- C. **A hand-printed document (printed, not cursive letters)** — for example, radio waybills

Note: Train crews must possess and maintain a document (electronic or paper) that complies with Section 11.4 Document Indicating Position in Train prior to pulling hazardous material shipments from a customer facility. A hand-printed document or customer bill of lading/shipping paper is not an acceptable shipping document when pulling a hazardous material shipment at a customer facility, interchange point, or other location; however, a hand printed document is acceptable to correct a problem found during transportation.

3. Acceptable Emergency Response Information

Any one of the following documents is acceptable emergency response information:

- A. **Emergency Response Guidebook (ERG)** or ERG mobile application.
- B. Emergency response information that is part of the train list/consist.
- C. Similar information provided by the customer — for example, a Safety Data Sheet (SDS).

4. Document Indicating Position in Train

A. Required Documentation

Before moving hazardous material shipments in a train, a member of the crew must have a compliant document (paper or electronic) that shows the following:

- 1. Current position in the train of each hazardous material shipment (loaded and residue/empty).
- 2. Train origin and destination.
- 3. Railroads emergency contact phone number.
- 4. "Special Permit SP-20954/Equivalency Certificate SR-13374".

B. Train List Updates (Pickups and Setouts)

When making pickups or setouts, both Mobile Train Reporting (MTR) or a paper document and the BNSF computer system must be updated prior to proceeding. Updates are made through the following method:

- 1. Primary Method - Mobile Train Reporting (MTR).
 - a. MTR is the primary method for maintaining and updating the train list.
 - b. When cellular connectivity issues are experienced while using MTR, the crew may continue operating provided the train list within MTR is maintained with any changes.
 - c. MTR will automatically update the BNSF computer system once cellular connectivity is re-established.
- 2. Secondary Method - Voice Train Reporting (VTR): VTR may be used to update the BNSF computer system when:
 - a. MTR is unavailable,
 - b. MTR is experiencing connectivity issues that prevent updates or
 - c. A paper document is being used .
- 3. Final Method – Customer Support Assistance:
 - a. If both MTR and VTR are unavailable, contact Customer Support to update the BNSF computer system.
- C. When MTR is not being used, the train crew must maintain the required document by hand-printing updates directly on the paper document or by attaching additional documents to reflect the current train consist information.
- D. When transporting hazardous material shipments to or from a shipper's facility or on an industrial lead into or out of the yard, at least one member of the crew must possess a document (paper or electronic) that:
 - 1. Complies with Section II.4.A, and
 - 2. Is maintained in accordance with Section II.4.B.

This requirement applies regardless of type of service (yard, local, or road) or method of operation (yard limits, restricted limits, industrial spur, etc.).

- E. Trains using Mobile Train Reporting (MTR)
 - 1. To ensure an accurate train list is maintained for trains carrying hazardous materials, the train crew must refresh their train list in the MTR application once their train has passed the first available AEI reader, after:
 - a. Departing the initial terminal.
 - b. Experiencing a change to the train's consist. (i.e. pickup/setout, etc).
- AEI reader locations are identified in Item 4. Subdivision Specific Rules Information within the Division Timetable.

Note: The train crew must possess and maintain either an electronic version or paper copy (using Train Consist Change Form) that accurately reflects any changes to rail cars within a train containing hazardous materials. All changes must also be updated in BNSF computer system prior to train movement.

5. Checking for Shipping Documents

Make sure that a member of the crew has a paper or electronic 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 (see Section II, item 2 c).
- 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 documents 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 packages of Class 9 that are not hazardous substances, hazardous wastes or marine pollutants do not require hazardous material shipping documents and emergency response information.

6. Reviewing Shipping Document Entries

Review the shipping description entries for each hazardous material on the shipping documents 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) 1TC (B) UN1830 (C) SULFURIC ACID (D) 8 (E) PG II (F) RQ (SULFURIC ACID) (H3) EMERGENCY CONTACT: 800-424-9300 (G) HAZMAT STCC = 4930040 (H10)
Horizontal Format UTLX 12345 (A) 1TC (B) // UN1017 (C) // CHLORINE (D) // 2.3 (5.1, 8) (E) // RQ (CHLORINE) (H3) // POISON-INHALATION HAZARD (H5) // ZONE B (H6) // MARINE POLLUTANT (CHLORINE) (H4) // EMERGENCY CONTACT: 800-424-9300 (G) // HAZMAT STCC = 4920523 (H10)
Items (A) through (G) are required entries and items (C) through (F) are referred to as the basic description. Item (H) refers to additional entries that may appear.

Figure 1. Shipping Description Entries

A. Reporting marks (initials) and number

The shipping document 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

- 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).
- For **non-bulk packaging**, the total quantity is given by both:
 - Weight or volume (including the unit of measure); for example, “**100 lbs.**”, “**55 gal.**”, “**5 kg**” or “**208 L**”,
and
 - Number and type of packages; for example “**12 drums**”, “**12 boxes**” or “**12 UN1A1**”.
- For Class 1 materials, the quantity must be the net explosive mass.

C. Identification Number

A 4-digit number preceded by “UN”, “NA” or “ID” assigned to a hazardous material.

D. 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 must include the phrase “Residue: Last Contained” in association with the basic description, including the proper shipping name.
4. For waste shipments, the word “Waste” will precede or be part of the proper shipping name of the material.

E. Hazard Class/Division - numeric or worded

Reference: For further information on hazard classes/divisions, 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/division will appear in parentheses after the primary hazard class/division. For example, Ethylene Oxide is listed as “2.3 (2.1)”, and Chlorine is listed as “2.3 (5.1, 8)”.
2. The hazard class need not be repeated for Combustible Liquids, N.O.S. shipments.
3. Divisions 1.1, 1.2, 1.3, 1.4, 1.5, and 1.6 will show a compatibility group letter after the division (1.1A). The letter has no significance in rail transportation.

F. Packing Group

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

Exceptions: Divisions 1.1, 1.2, 1.3, 1.4, 1.5, 1.6, 2.1, 2.2, 2.3, 4.1 (self-reactive liquids or solids, types B-F), 5.2, 6.2, and class 7, do not require the packing group notation. In addition, there are specific commodities in Classes / Divisions 3, 4.2, 4.3, 5.1, 8 and 9 that do not require the packing group notation. If the Packing Group is not required, the field will be blank.

G. Emergency Response Telephone Number

Shipping documents for hazardous materials must show a 24-hour emergency response telephone number. This telephone number must include the area code, the international access code, or the “+” (plus) sign, country code, and city code.

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

Exceptions: Emergency response telephone numbers are not required when the hazardous material is shown as 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. Krill meal, PG III.
9. Refrigerating machine.
10. Vehicle, flammable gas powered or vehicle, flammable liquid powered.
11. Wheelchair, electric.

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" or "INHALATION HAZARD" 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 ("FRA 0109123"), DOT Special Permit ("DOT-SP 9271"), Special Approval Number ("SA 920403"), or Competent Authority Number ("CA 9701001").
10. DOT-113 notation ("DOT-113, Do Not Hump or Cut Off in Motion").
11. Hazardous Material Response Code (Hazmat STCC "48xxxxx" or "49xxxxx").
12. Certain shipments described using Canadian regulations may contain both an Emergency Response Assistance Plan number and its activation telephone number (e.g., "ERAP-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)


```
*****
*                HAZMAT                *
*****
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14. Shipper's Certification (Not required for residue shipments).
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.
20. For International shipments, the notation, "Dangerous Goods in Excepted Quantities" as appropriate.
21. "Non-Odorized" or "Not-Odorized" notation for non-odorized liquefied petroleum gas.

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

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

- A. Do not move the car until the appropriate shipping document or the required entries on the shipping paper are present.
- B. Take one of these three actions:
 1. Correct the existing document, contact your supervisor or customer service, 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. Use a radio waybill.
 - a. Contact your supervisor or dispatcher and request the appropriate entries for a radio waybill (see Figure 2, Example of Radio Waybill).
The supervisor or dispatcher will provide the requested entries to you via radio or telephone.
 - 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 document 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.
or
 3. If item 1 and/or item 2 are unsuccessful and the shipping description entries are not available, move the train to the first location where the car(s) without proper shipping documents can be set out and then set out the car(s) without proper shipping documents.

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, a member of the crew must have a document (paper or electronic) that complies with Section II.4 Document Indicating Position-in-Train.
- 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,
 2. Create a hand-printed list using the Train Consist Change Form to show the position in train of each hazardous material shipment.
 3. Report any changes or updates (see Section II.4.B Position-in-Train Document) prior to movement.

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. The list must also note the origin and destination, BNSF emergency contact phone number 800-832-5452 and notate Special Permit SP-20954/Equivalency Certificate SR-13374.

Hazardous Material Radio Waybill			
NOTE: Print legibly ***** * HAZMAT * *****			
1.	Train Number		
2.	Number of Cars from Head End		
3.	Car Initial & No.		
4.	1/ Car Load or Residue Last Contained	(Circle One)	
*** Description of Articles ***			
5.	Number of Packages/Car		
6.	UN/NA Id. No.		
7.	Proper Shipping Name		
8.	Technical Name (		
9.	Primary Hazard Class		
	Subsidiary Hazard Class(es) (		
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 Special Permit(s)		
15.	Additional Information		
16.	ERP Plan No.:		
	(Canadian Shipments Only)		
17.	ERP Telephone No.:		
	(Canadian Shipments Only)		
18.	Emergency Contact: (		
	(		
Contract Number or Shipper Name.			
Completed:			
	Date:		
	Time:		
	MO DAY YR		

Figure 2. Example of Radio Waybill

10. Handling Hazardous Waste Shipping Documents and Manifests

- A. The shipping document 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 documents 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. Do not accept or sign waste manifests from shipper locations. Call BNSF Customer Support and notify that customer needs assistance with waste waybill procedures.

11. Handling Requests for Shipping Documents or Emergency Response Information

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

- A. If MTR is being used:
 - 1. Offer to email a copy of the shipping documents with emergency response information to local emergency responders via the Railroad Supplied electronic device (Preferred Method)
 - 2. If cellular coverage does not allow the shipping documents to be emailed, the information can be air dropped via the Railroad Supplied electronic device
 - 3. If air drop does not work, allow first responder to review in the Railroad Supplied electronic device
 - 4. First responders can request shipping documents by calling the BNSF Resource Operations Communication Center (ROCC) at 800-832-5452
- B. If MTR is not being used:
 - 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. Immediately share a copy of the emergency response information provided with the shipment.

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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

In addition to inspecting rail cars for compliance with train makeup and mechanical component inspection, visually inspect each loaded or residue/ empty hazardous material shipment (including flat cars transporting placarded or marked trailers or containers) **from ground level** (do not climb on or go under the car) and check for:

1. Leaking and/or visible content on the outside of the car.
2. Required placards and markings, including stenciling, car certificates, and tank car qualification dates (see Section IV - Placards and Markings),
3. Closures are secure, including but not limited to bottom outlet caps, bottom outlet valve handles, protective housing covers and manway cover securement bolts
and
4. Signs of tampering, such as suspicious items or items that do not belong, the presence of an "Improvised Explosive Device" (IED), and other signs that the security of the car may have been compromised.

Note: Where an indication of tampering or a foreign object is found, take the following actions:

1. Do not accept or move the rail car.
2. Immediately move yourself and others to a safe location away from the rail car before using radios and cell phones to make notifications.
3. For cars at a customer's facility, immediately contact local plant personnel. If local plant personnel are not available or cannot correct the issue, immediately contact the train dispatcher or the Service Interruption Desk company line 817-593-6823 or the ROCC at 800-832-5452.
4. For cars on interchange tracks or in the yard, immediately contact the yardmaster, train dispatcher, or the Service Interruption Desk company line 817-593-6823 or the ROCC at 800-832-5452.

A. Inspecting All Car Types (from ground level)

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

1. Look for leaking contents – drips, wetness, odor or material on the car or on the ground.

Note: If you find a hazardous material shipment leaking, or if there is a hazardous material residue/spillage on the outside of the car (excluding Molten Sulfur), 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 Placarded/Marked Tank Cars (from ground level)

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

1. Insure that it is not leaking.
 - a. Look for wetness or accumulation of the material.
 - b. Look for a vapor cloud.
 - c. Listen for hissing sounds of the contents escaping.

Note: if you find a hazardous material shipment leaking, or if there is hazardous material residue/spillage on the outside of the car (excluding Molten Sulfur), follow the instructions in item 3 of this section and in Section VIII (Emergency Response), item 5.

2. Protective housing covers are closed.
3. Manway cover swing bolts are up and in place.
4. All valves, valve handles and fittings appear to be closed and secure.
5. Visible plugs or caps (including bottom outlet caps) or other fittings are securely in place.

Note: When heater coil caps are provided, they must be applied.
6. “Double shelf couplers” are present for all tank cars.
7. Operating platform access, other than to ladders, must have the safety chains/bars applied.

C. Inspecting Placard/Marked Gondola cars (from ground level)

1. Look for loosely fastened gondola covers.
2. Make sure the cover or tie downs do not foul any safety appliances.

D. Inspecting Placard/Marked Hopper cars (from ground level)

Check that discharge gates are closed and secured.

E. Inspecting Shipments Placarded EXPLOSIVES 1.1 or 1.2 (from ground level)

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

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

Figure 3. Car Certificate

F. Inspecting Placarded/Marked Intermodal Shipments (from ground level)

In addition to completing other inspection requirements in this section:

1. Make sure that an intermodal tank container of hazardous material is not transported with a container above or below the tank. (No Double Stack configuration).
2. Make sure that placards are fully visible when containers are loaded in a well car.
3. Make sure that intermodal tank containers are placed so that the bottom outlet valves are pointed toward the ends of the well or platform.

3. Handling Defects

When a hazardous material shipment does not appear to be properly prepared for transportation, or signs of tampering, such as suspicious items are found:

- 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, whether loaded or containing a residue, must not be accepted for transportation or transported unless they are properly placarded and marked. However, not all hazardous material shipments require placards.

2. Placard Requirements

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

Note: Unless the shipping documents indicate that the shipment is a Limited Quantity, most international shipments (including Canada and Mexico) of hazardous materials require placards.

Placard—a sign measuring at least 250 mm (9.8 in) by 250 mm (9.8 in), square on point, communicating a hazard by symbol, color, and words or numbers. (see Figure 4 for pictures of placards). Text indicating the hazard is not required on placards other than the DANGEROUS and Radioactive placards; however, for shipments originating internationally, text may not appear on a Radioactive placard. The hazard class text does not have to be in English, except for the DANGEROUS placard, as long as the size, color, hazard class, and symbol are correct.

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 (toxic) by inhalation.
- 4.3 Dangerous when wet material.
- 5.2 Organic peroxide, Type B, liquid or solid, temperature controlled.
- 6.1 Material poisonous (toxic) by inhalation.
- 7 Radioactive Yellow III label or exclusive use shipments of low specific activity (LSA) materials and surface contaminated objects.

- B. For non-bulk packages (capacity less than 119 gallons or 882 pounds) 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.

Note: Placards may be displayed for a total weight 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 (nontoxic) compressed gas.

- 3 Flammable liquid.

- 4.1 Flammable solid.

- 4.2 Spontaneously combustible material.

- 5.1 Oxidizer.

- 5.2 Organic peroxide, other than “organic peroxide, Type B, liquid or solid, temperature controlled” in 2a above .

- 6.1 Poisonous (toxic) material, (other than material poisonous (toxic) by inhalation).

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

- 8 Corrosive material.

- 9 Miscellaneous hazardous material.

Exception: For U.S. transportation only, Class 9 placards are not required for non-bulk shipments.. However, bulk shipments of Class 9 materials transported in the US one of the following is acceptable:

1. Class 9 placard with identification number.
2. White square-on-point configuration containing the identification number.
3. Orange panel containing the identification number (see Section IV, item 4).

- 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. Class 6.2 (Infectious Substances).
 3. Class 9 (US Transportation Only) materials that display the identification number.
 4. Limited Quantity (LTD QTY) shipments when identified as such on shipping documents.
 5. Cryogenic atmospheric gases, other than Oxygen (Argon, Carbon Dioxide, Nitrogen).
 6. Combustible liquids in non-bulk packaging (i.e., drums), usually found in intermodal shipments, unless the material is a hazardous substance or hazardous waste.
 7. Rail cars and intermodal tank containers which have been cleaned and purged of hazardous material.
 8. Shipments listed as Radioactive White I and Radioactive Yellow II on shipping documents.
 9. Class 1.4S.
 10. Shipments of Molten Sulfur, provided 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 (Toxic)-Inhalation Hazard Zone A material.
 3. Hazard Class 2.1 flammable gases loaded in DOT-113 tank cars, including tank cars containing only a residue of the material.
- F. The DANGEROUS placard may be used instead of separate placards for each hazard class 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 2 B.
- Note:** When 2,205 lbs. (1,000 kg.) or more of one class of material is loaded at one loading facility, the placards for that class as specified in item 2 B of this section must also be applied.
- G. Some shipments of hazardous materials require subsidiary placards that represent secondary hazards. Subsidiary placards must not display a 4-digit identification number, but will display the hazard class or division number.
- Note:** Subsidiary placards must be displayed when the subsidiary class is 2.3, 6.1 with the notation Poison-Inhalation Hazard or Toxic-Inhalation Hazard is present on the shipping documents, or when the subsidiary class is 4.3.

- H. For residue/empty hazardous material shipments, the rail car, trailer, or container must remain placarded in the same manner as the loaded shipment, unless the packaging:
1. Has been cleaned of residue,
or
 2. Has been purged of vapor to remove any hazard,
or
 3. Has been 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.
 4. Contains a residue of an elevated temperature. These shipments may remain placarded in the same manner as when it contained a greater quantity of the material even though the material no longer meets the definition for an elevated temperature material.
 5. Contains a residue of a Hazardous Substance, Class 9, that does not meet the definition of another hazard class and is not a hazardous waste or marine pollutant. These shipments may remain marked, labeled, and or placarded in the same manner as when it contained a greater quantity of the material even though the material no longer meets the definition for a Hazardous Substance.

3. Inspecting for Placards

- A. Make sure that all required placards are:
1. Consistent with the shipping document information.
 2. On both sides and both ends of the shipment.
 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 enroute, notify the train dispatcher, yardmaster, or your supervisor, as appropriate. Corrections must be made at the next inspection point.

Class 1 (Explosives)     Division 1.1 (Explosive with Mass Explosion Hazard) Division 1.2 (Explosive with Projection Hazard)     Division 1.3 (Explosive with Predominantly a Fire Hazard) Division 1.4 (Explosive with no Significant Blast Hazard) Division 1.5 (Very Insensitive Explosive) Division 1.6 (Extremely Insensitive Explosive)	Class 4 (Flammable Solids & Reactive Solids/Liquids)     Division 4.1 (Flammable Solid) Division 4.2 (Spontaneously Combustible)   Division 4.3 (Dangerous When Wet Material)
Class 2 (Gases)     Division 2.1 (Flammable Gas) Division 2.1 (Flammable Gas in cryogenic form in DOT 113 Tank Car)     Division 2.2 (Nonflammable Gas) Division 2.3 Zone A (Poison Gas)  Note: Authorized only for U.S. to Canada or Canada to U.S. shipments. Anhydrous Ammonia (Canadian)   Division 2.3 Other than Zone A (Poison Gas)   Oxygen International Placard   Note: The word "TOXIC" can be used in place of the word "POISON". May appear in conjunction with U.S. "POISON" GAS Placard (INHALATION HAZARD CLASS 2) on Canadian or International Shipments.	Class 5 (Oxidizers & Organic Peroxides)     Division 5.1 (Oxidizer) Division 5.2 (Organic Peroxide) Class 6 (Poisonous Materials)     Division 6.1 Zone A [Poison or Toxic Inhalation Hazard (PIH or TIH)] Division 6.1 Zone B [Poison or Toxic Inhalation Hazard (PIH or TIH)]    Division 6.1 PGI [Other than Poison or Toxic Inhalation Hazard (PIH or TIH)] Division 6.1 PGII (POISON), or PGIII Division 6.1 PGIII Note: The word "TOXIC" can be used in place of the word "POISON" Class 7  Class 7 (Radioactive Material) Class 8   Class 8 (Corrosive Material)
Class 3 (Flammable Liquids)   Class 3 (Flammable Liquid)	Class 9 (Miscellaneous Hazardous Materials)   Class 9 (Miscellaneous Hazardous Material)
Combustible Liquids   Combustible Liquid	Mixed Load   U.S. Canadian

Figure 4. Placard Chart

Text indicating the hazard is not required on placards other than the DANGEROUS and Radioactive placards; but, for shipments originating internationally, text may not appear on a 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.

4. Marking Requirements and Inspecting for Markings

Marking - a descriptive commodity name, identification number, caution, such as INHALATION HAZARD, HOT, MOLTEN, MARINE POLLUTANT, FUMIGANT, or NON-ODORIZED (NOT ODORIZED), tank car specification and qualification dates stencils, or sour crude oil identification displayed on hazardous material shipments.

Make sure the markings above are displayed on bulk packages as follows:

A. Identification Number Markings

1. Identification number markings must appear on both sides and both ends either on the placard or in close proximity to the placard, when a placard is required:

- a. Bulk packages of hazardous material (including Class 9 when no placard is required).

Note: Identification number markings are not required on the ends of multi-compartmented tank cars transporting more than one hazardous material having different DOT identification numbers.

- b. Rail cars, trailers, and containers when 8,820 lbs. (4000 kg.) or more of non-bulk packages of hazardous material, 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 material.

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. CLASS 7 RADIOACTIVE placards.
 - c. DANGEROUS placards.
 - d. Subsidiary placards.
4. Make sure the identification numbers appear as required above and agree with the shipping document entries.
5. When picking up a hazardous material shipment at the customer's facility, a siding or 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 enroute, notify the train dispatcher, yardmaster, or your supervisor, as appropriate. Corrections must be made 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 documents 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 packaging (see 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 enroute, notify the train dispatcher, yardmaster, or your supervisor, as appropriate. Corrections must be made at the next inspection point.

C. HOT Mark

1. For a material described on the shipping documents 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),

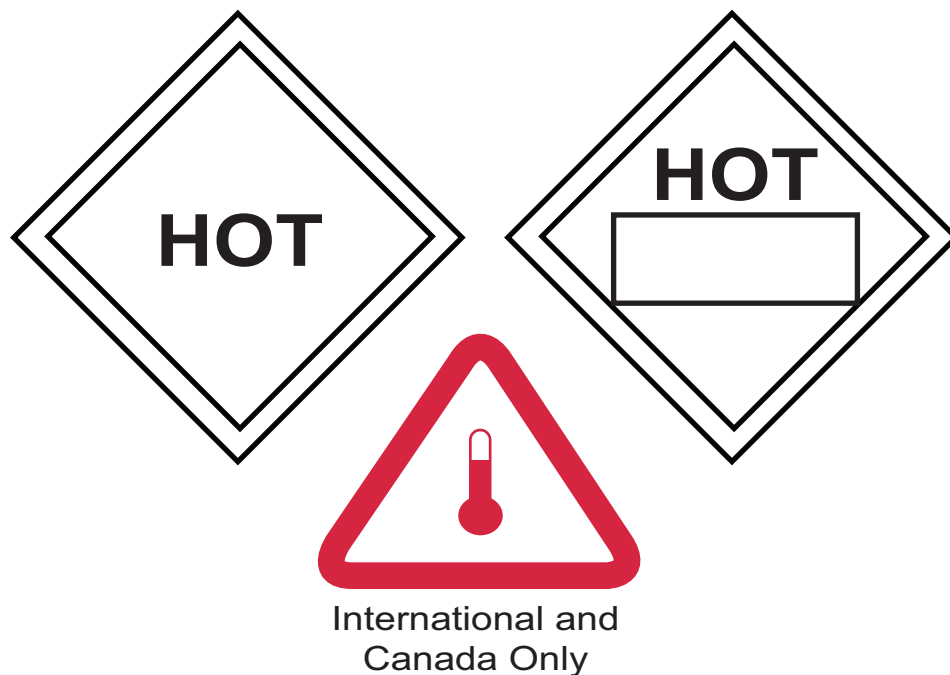


Figure 7. Hot Mark

or

- b. On the packaging itself.

Note 1: The word "HOT" is not required for bulk packagings of molten aluminum or molten sulfur marked "MOLTEN ALUMINUM" or "MOLTEN SULFUR," as appropriate.

Note 2: Residue/empty shipments that last contained an elevated temperature material (HOT), such as asphalt, are not considered hazardous materials and do not require hazardous material shipping description entries on the shipping document. When the shipping document indicates 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 an elevated temperature material (HOT) mark is not legible or is missing enroute, notify the train dispatcher, yardmaster, or your supervisor, as appropriate. Corrections must be made at the next inspection point.

D. LIMITED QUANTITY Mark

Shipments which include hazardous materials in limited quantities may display a Limited Quantity marking on at least one side or end of trailer/container when:

- a. Trailer/container is being shipped/received internationally.
- b. Trailer/container is being shipped to or from Canada.

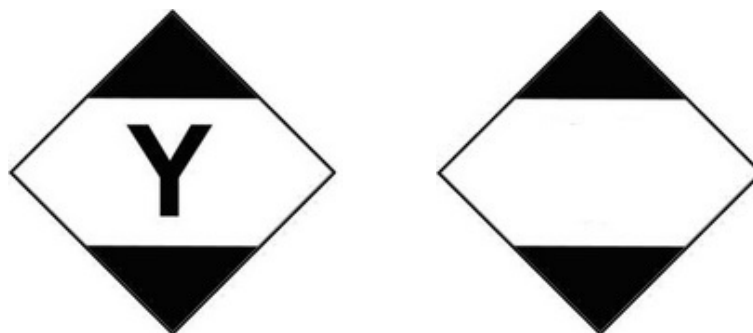


Figure 8. Limited Quantity Marking

Note: A package displaying the Limited Quantity marking is not subject to additional marking requirements for non-bulk packages (e.g. proper shipping name or identification number marking) unless it contains a hazardous substance or a hazardous waste.

E. INHALATION HAZARD Mark

1. For a material described on the shipping documents as "Poison (Toxic)-Inhalation Hazard" or "Inhalation Hazard," the words "INHALATION HAZARD" must appear (at least 3.9 inches in height for tank cars and at least 2 inches in height for intermodal tank containers) 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 enroute, notify the train dispatcher, yardmaster, or your supervisor, as appropriate. Corrections must be made at the next inspection point.

F. COMMODITY NAME

1. The commodity name is required on intermodal tank containers transporting any hazardous material and on tank cars transporting certain hazardous materials. The commodity name (at least 3.9 inches in height for tank cars and at least 2 inches in height for intermodal tank containers) must match the proper shipping name on the shipping documents and may include the technical name, although it is not specifically required. The commodity name must be on two opposing sides of the intermodal tank container or tank car.
2. When accepting an intermodal tank container or tank car of hazardous material 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. When the commodity name on a tank car or intermodal tank container is discovered illegible or missing enroute, notify the train dispatcher, yardmaster, or your supervisor, as appropriate. They will arrange to correct the problem at the next inspection point.

Note: See Appendix A for list of materials that require the commodity name stencil on tank cars.

G. Tank Car Specification and Qualification Dates Stencils

1. Make sure the stencils describing the tank car specification and qualification dates are legible. These stencils will appear on both sides of the tank car toward the end on the right as you face the car.
2. Make sure the tank car qualification dates for pressure relief devices (PRD), tank, and interior heater coils are current (a car is currently within the qualification date until the last day of the year shown) (see Figure 9).

Note 1: When the car is loaded before the end of the year, it may be transported for unloading purposes but must be requalified before reloading.

Note 2: A tank car containing the residue of a hazardous material that is overdue its periodic qualification date may move and not be in violation of DOT regulations. The regulations only address loading a tank car overdue for its periodic qualification.

DOT 111A100W1

		Station Stencil	QUALIFIED	DUE
TANK QUALIFICATION		ABC-1	2021	2031
THICKNESS TEST		ABC-1	2021	2031
SERVICE EQUIPMENT		ABC-1	2021	2031
PRD Valve:	75 PSI	DEF-1	2021	2031
INT HTR		FGL-1	2021	2031
LINING		ABC-1	2021	2031
88.B.2 INSPECTION		ABC-1	2021	2031
STUB SILL INSPECTION		ABC-1	2021	2031

Figure 9. Tank Car Specification and Qualification Dates Stencils

3. When the qualification date is overdue, do not accept loaded tank cars from the shipper.
4. When found enroute, car may proceed to destination after contacting the supervisor.

H. FUMIGANT Mark

1. As information, the purpose of the FUMIGANT mark (see Figure 10) 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.
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.

Note: 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 documents is not required.
 - b. For International (Canadian and IMDG) shipments verify that the information for the shipment on the shipping documents includes the following entries - UN3359, Fumigated Unit, Class 9, name of the fumigant, amount of fumigant, date of fumigation, and any disposal information.



Figure 10. Fumigant Mark

I. Non-Odorized Marks

A tank car or intermodal tank container shipment 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 (see Figure 11).

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



Figure 11. Non-Odorized Mark

Shippers must include on shipping documents information that a shipment is not odorized (i.e. provide “NON-ODORIZED” or “NOT-ODORIZED” notation).

J. Sour Crude Oil Mark

1. US - A bulk packaging transporting petroleum crude oil containing hydrogen sulfide (i.e. sour crude oil) in sufficient concentration that its vapors may present an inhalation hazard must include a marking to warn of the toxic hazard (see Figure 12), which must be displayed at each location (manway) where exposure to hydrogen sulfide vapors may occur. The square-on-point must be black or red on a white or other contrasting background, and the skull and crossbones symbol must be black, located in the center of the square-on-point, and clearly visible.



Figure 12. Sour Crude Oil Mark

2. Canada - When bulk packages of petroleum crude oil (UN1267 or UN3494) contains hydrogen sulfide in sufficient concentration that vapors from the crude oil can present an inhalation hazard, the words “TOXIC BY INHALATION” or “TOXIC – INHALATION HAZARD” must be included next to the placard for the primary class (Class 3). The marking can be done by use of an inhalation hazard placard or by marking on the car.

V. SWITCHING

1. General Requirement

Switch placarded hazardous material shipments only in compliance with the restrictions on the Switching Chart (see Figure 13).

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.” Switching also includes making pickups and setouts at a customer’s facility or interchange points. Switching does **not** include moving rail cars to or from a shipper’s facility or industry track into or out of the yard.

Reminder: When moving rail cars to or from a shipper’s facility or on an industrial lead into or out of the yard, comply with both the train placement restrictions in Section VI and the documentation requirements in Section II.

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. Switching Chart

SWITCHING CHART												
GROUP A		GROUP B				GROUP C	GROUP D	GROUP E		GROUP F		HOW TO USE THIS CHART
Select the applicable column and row on the Switching Chart. To do so:		1. Identify the placards and/or markings applied to the car. 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. Use the shipping document to determine whether car is loaded or residue/empty. Note: Residue/empty tank cars are identified on switch lists, track list, and track inquiries with an "E" or "DE" in the appropriate field. The notation "RESIDUE: LAST CONTAINED" on the shipping documents indicates a residue/empty shipment.		3. Identify the car type involved by observation (e.g. tank car, hopper car, gondola, etc.).										
4. Find the applicable section on the chart, based on the placard or marking applied, the load/empty status, and the car type.		5. Follow the restrictions associated with the placard or marking as the "X"s in the columns indicated.										
Note: The word "TOXIC" can be used in place of the word "POISON" on placards		Cars with placards displaying 4-digit identification numbers will be handled the same as cars with word description placards.										
Equivalent Placards		=										
RESTRICTIONS		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 (e.g. switch heaters). Do not place under bridges, under overpasses or along passenger stations.										
2) These cars must not be:		• Cut off in motion, • Struck by any free rolling car, or • Coupled into with more force than needed to make the coupling.										
3) These cars must not be cut off in more than two car culls. No more than two car cuts can couple into these cars.												
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 additional cars until the lead is clear.										

GROUP A	GROUP B				GROUP C	GROUP D	GROUP E		GROUP F		Any Car
EXPLOSIVES 1.1 1	EXPLOSIVES 1.3 1,3	EXPLOSIVES 1.4 1	1.5 BLASTING AGENTS 1	OXYGEN 2	INHALATION HAZARD 2	RADIOACTIVE 7	INHALATION HAZARD 2	INHALATION HAZARD 6	1.6 EXPLOSIVES 1	CL	CL
N1	N3	N4	N5	OX	PA	SN UN2919 UN3328 UN3329 UN3331	PO	PC	N6	NF	
EXPLOSIVES 1.2 1	NON-FLAMMABLE GAS 2	DANGEROUS 4	FLAMMABLE 3	FLAMMABLE SOLID 4	INHALATION HAZARD 6	FLAMMABLE GAS 2	PL	FG	COMBUSTIBLE 3	MA	MA
N2	NG	DW	FL	FS		FG DOT 113 Tank Car (Loads or Residue/ Empty)		IH	CL	MA	
EXPLOSIVES 1.1 1	COMBUSTIBLE 4	OXIDIZER 5.1	ORGANIC PEROXIDE 5.2	POISON 6					9	HOT	MA
N1	NS	OM	OP	PB					N9	MA	
EXPLOSIVES 1.2 1	RADIOACTIVE 7	CORROSIVE 8	DANGER	DANGEROUS				PO	MA	MA	MA
N2	RM	CM	Canada DA	US					MA	MA	MA
Any Car	Loaded Tank Car	Other Loaded Car	Any Loaded Car	Any Car	Loaded Tank Car	Other Loaded Car	Any Car	Any Car	Any Car	Any Car	Any Car
X											
X		X**	X	X							

* Authorized only for U.S. to Canada or Canada to U.S. shipments.
** Applies only to placarded flatcars, freight containers, trailers, portable tanks, tote bins, intermodal portable tanks, or U.N. portable tanks.

VI. TRAIN PLACEMENT

1. General Requirement

- A. Place placarded hazardous material shipments in a train so as to comply with the instructions on the Position-in-Train Chart (Figure 14).
- B. Correct hazardous material train placement errors at the first location that allows switching, once the error is identified.

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 enroute.
- C. When delivering cars to or picking cars up at interchange tracks that are owned and operated by another railroad.

Note: Position-in-train and shipping document rules always apply regardless of type of service (yard, local, or road) or method of operation (yard limits, restricted limits, industrial spur, etc.).

Reminder: When moving rail cars to or from a shipper's facility or on an industrial lead into or out of the yard, comply with both the train placement restrictions in Section VI and the documentation requirements in Section II. See also Section V. Switching, General Requirements, Item 1, and the definition of switching in the glossary.

3. 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 Restriction # 3 on the Position-in-Train Chart.
 - 4. Placarded rail car, other than a tank car, as long as it complies with Restriction # 7 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.

5. Operational Controls

- A. An employee may not deadhead in an engine (DP or dead-in-tow) while using DOT Special Permit 20996.
- B. An engine (DP or dead-in-tow) must remain locked to prevent unintended occupancy during operation while using DOT Special Permit 20996.

6. **Manned (Occupied) Helper Units (Per DOT Special Permit SP 21757)**

A manned helper unit consist can be placed next to a placarded car as identified in the Placement in Train Chart under the following conditions:

1. An occupied helper unit consist placed at the rear end of a train must use a minimum of two locomotives, immediately adjacent to a placarded car. The train crew's position must be furthest away from any adjacent placarded car.
2. An occupied helper unit consist placed in the middle portion of the train must use a minimum of three locomotives. The helper unit crew's position must be in the middle locomotive with one locomotive between the crew and a placarded car.
3. For middle or near middle helper consists where train length prevents compliance with item 2 above (less than three locomotives). The train crew must occupy the helper locomotive that is furthest away from any adjacent placarded car.
4. Locomotives in the helper consist that are being used as buffers, must be unoccupied and locked.
5. Helper units using this provision must not exceed a trip length of 50 miles.

7. **Shiftable Load Placement for Trains Destined to or Operating in Canada**

Any placarded hazardous materials shipment, whether loaded or residue/empty, may not be placed next to an open top rail car (including bulkhead flats), when:

- The contents protrude beyond the car ends.
- The contents, if shifted, would protrude beyond the car ends.

POSITION-IN-TRAIN-CHART								
GROUP A	GROUP B			GROUP C	GROUP D	GROUP E		HOW TO USE THIS CHART
EXPLOSIVES 1.1 1	EXPLOSIVES 1.3 1	EXPLOSIVES 1.4 1	BLENDING AGENTS 1.5 1	INHALATION HAZARD 2	RADIOACTIVE 7	EXPLOSIVES 1.6 1	CL	Select the applicable column of the Position-in-Train chart. To do so: 1. Identify the placards and/or markings applied to the car.
EXPLOSIVES 1.1 1	FLAMMABLE GAS 2	FLAMMABLE 3	OXYGEN 2	INHALATION HAZARD 6		COMBUSTIBLE 3	N9	2. Use the shipping document to determine whether car is loaded or residue/empty. Note: The notation: "RESIDUE: LAST/CONTAINED" on the shipping document indicate a residue/empty shipment.
EXPLOSIVES 1.2 1	FG	FS	DANGEROUS	PL				3. Identify the car type involved by observation (e.g. tank car, hopper car, gondola, etc.).
EXPLOSIVES 1.2 1	NG	IH	DW	POISON GAS 2		PG III 6	MA	4. Find the applicable section on the chart, based on the placard or marking applied, the load/empty status, and the car type.
EXPLOSIVES 1.2 1	CM	NS	OP	POISON GAS 2		HOT	MA	5. Follow the restrictions associated with the placard or marking as the "X's" in the columns indicate.
RADIOACTIVE 7	PC	PB	DA	1005 2		MA	MA	* Authorized only for U.S. to Canada or Canada to U.S. shipments
								The word "TOXIC" can be used in place of the word "POISON" on placards
								Cars with placards displaying 4-digit Identification numbers will be handled the same as cars with word description placards.
								Equivalent Placards =
Any Car	Loaded Tank Car	Residue Tank Car	Other Loaded Car	Loaded Tank Car	Residue Tank Car	Other Loaded Car	Any Car	RESTRICTIONS
X	X			X				1) Must not be nearer than the 6th car from the lead engine consist (operating or dead-in-tow), or occupied caboose/business car. If the train does not have at least five buffer cars, then all available buffer cars must be placed between the placarded car and the head end engine consist (operating or dead-in-tow)/or occupied caboose/business car. The available buffer cars must be equally divided to protect both head end engine consist or occupied caboose/business car. Exception: In a loaded or empty bulk commodity unit train, only one buffer car is required to be placed between the placarded car and the head end engine consist.
X				X				Manned Helper Units—Must not be nearer than the 6th car from an occupied helper unit(s). See Section VI. 6. Helper Units for required operational controls.
X				X				2) Unoccupied Engine (DP or dead-in-tow). Note: Engine (DP or dead-in-tow) must remain locked to prevent unintended occupancy during operation.
X	X	X		X	X			3) Lead engine consist, occupied helper, caboose or business car.
X	X			X			X	4) Open top cars (including bulkhead flats), when any of the contents protrude beyond the car ends or, if shifted, would protrude beyond the car ends. (See Section VI. 7. Shiftable load placement for trains destined to or operating in Canada).
X	X			X				5) Loaded flat cars (including railroad wheels on wheel flats), gondolas without ends, or loads with axes extending above car tops. Excludes closed TOFC/OFC equipment, multi-levels, and specially equipped cars with vehicle tie-down devices.
X	X			X				6) Any rail cars, transport vehicles, or freight containers with temperature control equipment or internal combustion engine whether running or not.
X	X		X	X			X	7) Any placarded car in another placarding Group, except it may be next to any residue placarded car or any car placarded or marked as a Group E.

Figure 14. Position-in-Train Chart

9. SCHI Table

PLACARD	SCHI	DESCRIPTION	HAZARD CLASS
	CH	Chlorine	Class 2.3 Chlorine
	CL	Combustible Liquid	Class 3 Worded Hazard Class: Combustible Liquid
	CM	Corrosive	Class 8 (Corrosive Material)
	DA	Dangerous	Dangerous (Mixed Load)
	DW	Dangerous When Wet	Class 4.3 (Dangerous When Wet Material)
	FG	Flammable Gas	Class 2.1 (Flammable Gas)
	FL	Flammable	Class 3 (Flammable Liquids)
	FS	Flammable Solid	Class 4 (Flammable Solids)
	IH	Inhalation Hazard	US: Class 2.2 (Inhalation Hazard)
	MA	Marked (UN/ NA Number)	Identification Number Markings
	NF	Division 6.1 PGIII	* Class 6.1 Poisonous (toxic) material
	NG	Nonflammable Gas	Class 2.2 (Nonflammable Gas)

PLACARD	SCHI	DESCRIPTION	HAZARD CLASS
No Placard	NP	No Placards Required	No Placard
	NS	Spontaneously Combustible	Class 4.2 (Spontaneously Combustible)
	N1	Explosive 1.1	Class 1.1 (Explosive with Mass Explosion Hazard)
	N2	Explosive 1.2	Class 1.2 (Explosive with Projection Hazard)
	N3	Explosive 1.3	Class 1.3 (Explosion with Predominately a Fire Hazard)
	N4	Explosive 1.4	Class 1.4 (Explosion with no Significant Blast Hazard)
	N5	Explosive 1.5	Class 1.5 (Very Insensitive Explosive)
	N6	Explosive 1.6	Class 1.6 (Extremely Insensitive Explosive)
	N9	Class 9	Class 9 (Miscellaneous Hazardous Materials)
	OM	Oxidizer	Class 5.1 (Oxidizer)
	OP	Organic Peroxide	Class 5.2 (Organic Peroxide)
	OX	Oxygen	Class 2 (Gases)

PLACARD	SCHI	DESCRIPTION	HAZARD CLASS
	PA	Poison Gas Placard on a White Square Background	Class 2.3 Zone A (Poison Gas)
	PB	Poison	* Class 6.1 (Other than Poison or Toxic Inhalation Hazard (PIH or TIH))
	PC	Poison Inhalation Zone B Placard without the White Square Background	Class 6.1 Zone B (Poison or Toxic Inhalation Hazard (PIH or TIH))
 	PL	Poison Placard on a White Square Background	* Class 6.1 Zone A (Poison Gas)
 	PO	Poison Gas	Class 2.3 Other than Zone A (Poison Gas) Canada: Class 2.3 (Inhalation Hazard) Anhydrous Ammonia
	RM	Radioactive Material	Class 7 (Radioactive Material)
	SN	Spent Nuclear Fuel of High-Level Radioactive Waste	Class 7 (Radioactive Material) UN2919, UN3328, UN3329, UN3331 Only)

* **Note:** The word "TOXIC" may be used in place of the word "POISON"

Figure 15. Special Car Handling Instructions (SCHI) Codes

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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 car loads of Spent Nuclear Fuel (SNF) or High Level Radioactive Waste (HLRW) moving under the following ID numbers UN2916, UN2917, UN2919, UN3328, UN3329, or UN3331.
or
- B. One (1) or more tank car loads of Poison or Toxic Inhalation Hazard (PIH or TIH) (Hazard Zone A, B, C, or D), anhydrous ammonia (UN1005), or ammonia solutions (UN3318).
or
- C. Twenty (20) car loads, twenty (20) intermodal portable tank loads, or any combination of these loads totaling twenty (20) or more, transporting any hazardous material.

Exception: Except for intermodal portable tank loads, do not count trailers, containers, or intermodal rail cars transporting hazardous materials when determining Key Train status.

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. After picking up or setting out hazardous material shipments enroute, the Key Train status may change. When using Mobile Train Reporting (MTR), MTR will recalculate the Key Train status. If MTR is not being used, the conductor must determine whether or not Key Train status has changed and, if so, promptly notify the train dispatcher.
- C. Unless relieved of the requirement to do so by the BNSF train dispatcher, the crew operating a Key Train on a foreign railroad must, at the earliest opportunity, notify the other railroad’s train dispatcher that the train is a Key Train as defined by BNSF’s US Hazardous Material Instructions for Rail.

4. Instructions for Operating Key Trains

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

Note 1: Where lower speed restrictions are in effect, or when the train is restricted to a lower speed for other reasons, the lower speed governs.

Note 2: Key Trains are restricted to 10 MPH through any temporary 29 MPH freight train speed restriction.

Note 3: Consult current BNSF System Special Instructions, Division General Orders, and Timetables for the latest Key Train operating instructions.

Note 4: BNSF printed train lists for trains qualifying as a Key Train at the time the list is generated will display a banner that may include notifications regarding route specific speed restrictions.

- B. A Key Train will hold Main Track when practical.
- C. Only cars equipped with roller bearings will be allowed in a Key Train.
- D. When a Key Train is stopped by a trackside warning device, apply the following:
1. When a hot box/bearing or hot wheel condition is indicated, the car (hazmat or not) must be set out.
 2. When a dragging equipment or high/wide/shifted load condition is indicated, the car (hazmat or not) must be set out. However, the indicated car may remain in the train if the condition is corrected or inspected by mechanical personnel and no defects are found.
- E. When moving, Key Trains experiencing an emergency application of the brakes, whether intentional or not, must be protected as prescribed by Rule 6.23 and as supplemented in the current System Special Instructions All Subdivisions. In addition, the entire train must be inspected for derailed or defective cars. If the train is stopped at a location where it cannot be safely inspected (for example: on a bridge), the train may be moved, at the discretion of the appropriate supervisor or train dispatcher, to the nearest location where it can be SAFELY inspected, but at no more than 5 MPH.

VIII. EMERGENCY RESPONSE

1. General Requirement

When an emergency occurs, SAFETY IS OF FIRST IMPORTANCE.

- A. Make an emergency call as rules require.
- B. Look for a fire, vapor cloud or other release of materials.
- 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 documents (including the emergency response information) and the Emergency Response Guidebook and move yourself and other crew members uphill and upwind the evacuation distance recommended in the Emergency Response Guidebook. 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 (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 (fire, ambulance, and law enforcement agencies).
 - 7. Location where a crew member with shipping documents 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 documents and emergency response information.
 - 3. If necessary, move to the farthest distance recommended in:
 - a. Information from the Emergency Response Guidebook.
 - or
 - b. Other supplementary emergency response information printed as part of the train list or provided by the customer – for example, a Safety Data Sheet (SDS).

3. When No Fire or Vapor Cloud is Visible

- A. Review the shipping documents for hazardous material shipments.
- B. Take the shipping documents (including the emergency response information) and the Emergency Response Guidebook and inspect the train to identify the rail cars, trailers, or containers involved, and look for indications of the release of hazardous material.
- C. If you encounter a hazardous material release, unusual smells, or noises during this inspection:
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. Avoid contact with the material and its vapors.
 - 4. Move yourself and other crew members upwind and uphill the evacuation distance recommended in the Emergency Response Guidebook. Stay out of ditches and low areas.
 - 5. Eliminate any ignition sources (no smoking, no fusees).
 - 6. 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 (leaking, derailed, or on fire).
 - 3. Surroundings (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 (fire, ambulance, and law enforcement agencies).
 - 5. Location where a crew member with shipping documents 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 documents and emergency response information.
 - 3. If necessary, move to the farthest distance recommended in:
 - a. Information from the Emergency Response Guidebook.
 - or
 - b. Other supplementary emergency response information printed as part of the train list or provided by the customer – for example, a Safety Data Sheet (SDS).

4. Cooperating with Local Emergency Responders

- A. Immediately share any requested information from the shipping documents with emergency response personnel.
 1. If MTR is being used
 - a. Offer to email a copy of the shipping documents with emergency response information to local emergency responders via the Railroad Supplied electronic device (Preferred Method).
 - b. If cellular coverage does not allow the shipping documents to be emailed, the information can be air dropped via the Railroad Supplied electronic device.
 - c. If air drop does not work, allow first responder to review in the Railroad Supplied electronic device.
 - d. First responders can request shipping documents by calling the BNSF Resource Operations Communication Center (ROCC) at 800-832-5452.
 2. If MTR is not being used:
 - a. 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.
 - b. Immediately share a copy of the emergency response information provided with the shipment.
- B. Help emergency response personnel identify cars and the commodities involved. Use shipping documents 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.

Special Permit/Certificates

Special Permits and Certificates can be found through the Employee Portal Hazmat homepage and the Rules and Timetable app.

APPENDIX A

List of materials which must be marked on tank cars

Division 2.1 materials

Division 2.3 materials

Acrolein, stabilized

Ammonia, anhydrous, liquefied

Ammonia solutions (more than 50% ammonia)

Bromine or Bromine solutions

Bromine chloride

Chloroprene, stabilized

Dispersant gas or Refrigerant gas

Formic acid

Hydrocyanic acid, aqueous solutions

Hydrofluoric acid, solution

Hydrogen cyanide, stabilized (less than 3% water)

Hydrogen fluoride, anhydrous

Hydrogen peroxide, aqueous solutions (greater than 20% hydrogen peroxide)

Hydrogen peroxide, stabilized

Hydrogen peroxide and peroxyacetic acid mixtures

Nitric acid (other than red fuming)

Phosphorus, amorphous

Phosphorus, white dry or Phosphorus, white, under water or Phosphorus white, in solution, or Phosphorus, yellow dry or Phosphorus, yellow, under water or Phosphorus, yellow, in solution

Phosphorus white, molten

Potassium nitrate and sodium nitrate mixtures

Potassium permanganate

Sulfur trioxide, stabilized

Sulfur trioxide, uninhibited

Note: Many other materials, hazardous and non-hazardous, *may* have the name marked on the car at the discretion of the shipper or car owner. The above listed materials **must**, by regulation, have the name marked on each side of the tank car.

GLOSSARY

Approval

Written consent from DOT or another Competent Authority to perform a function that requires prior consent under the regulations.

Basic description

The identification number, proper shipping name, hazard class/ or division number, and packing group (if assigned) prescribed for a hazardous material.

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 (450 liters) for liquids, 882 pounds (400 kilograms) for solids, or a water capacity of greater than 1000 pounds (454 kilograms) for gases. For example, bulk bags, intermodal (IM) portable tanks, portable tanks, portable bins, gondola cars, hopper cars, or tank cars.

Carrier

A person (individual, corporation, company, etc.) who transports property in commerce by rail car, aircraft, motor vehicle, or vessel.

Commodity name

The proper shipping name or an authorized common name of a hazardous material.

Consumer commodity

A hazardous material that is packaged and distributed in a form intended or suitable for sale through retail sales agencies for consumption by individuals for personal care or household use. Consumer commodities are, typically, excepted from labeling, placarding and shipping document requirements.

Container

Any freight container (box) or intermodal tank container (intermodal (IM) portable tank, portable tank, UN portable tank, or portable bin).

Dangerous goods

A term used for “hazardous materials” in countries other than the United States.

Division

A subdivision of a hazard class; typically two numerals separated by a decimal point (2.1, 2.2, 2.3, 5.1, 5.2, etc.). For Class 1 (explosive materials), a “compatibility group letter” will be shown after the second numeral (1.1A, 1.4G, etc.).

Document

A piece of written, printed, or electronic matter that provides information or evidence or that serves as an official record.

Documentation

Complete shipping documents with the appropriate shipping description entries and acceptable emergency response information.

Elevated temperature material

A material which, when offered for transportation or when transported as a bulk package, is:

- A liquid at a temperature at or above 212°F (100°C);
- A liquid with a flash point at or above 100°F (38°C) that is intentionally heated and offered for transportation or transported at or above its flash point; or,
- A solid at a temperature at or above 464°F (240°C).

Contact with an elevated temperature material may result in thermal burns, in addition to other hazards associated with the material.

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.

Emergency response telephone number

The telephone number of an entity who is either knowledgeable of a hazardous material being shipped and has comprehensive emergency response and incident mitigation information for that material, or has immediate access to an entity who possesses such knowledge and information.

Engine

A locomotive propelled by any form of energy and used by a railroad.

Freight container

A reusable container having a volume of 64 cubic feet or more, designed and constructed to permit being lifted with its contents intact and intended primarily for containment of packages (in unit form) during transportation.

Fumigant

A poisonous/toxic agent in vapor form intended to destroy insects and vermin.

Hazard class

The category of hazard assigned to a material. A class may be subdivided into divisions for clarity. When talking about hazard classes/divisions, the hazard class/division can be expressed as a number or with words (for example: Class 3 (three) or Flammable Liquid; Division 2.1 (two-point-one) or Flammable Gas). A material will have a primary hazard class/division and may have one or more subsidiary hazard classes/divisions which represent additional hazards associated with the material.

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 documents. When moved in rail cars, trailers, or containers, hazardous material shipments may or may not be placarded or marked with an identification number.

Hazardous substance

A hazardous material that, as determined by the U.S. Environmental Protection Agency, has a detrimental effect on the environment. To be regulated in transportation, the quantity in one package must equal or exceed the material's "Reportable Quantity" ("RQ").

Hazardous waste

A material subject to the Hazardous Waste Manifest Requirements of the U.S. Environmental Protection Agency due to its potential threat to public health or the environment.

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 designated (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 document as "Zone A." Zone A is the most hazardous, and Zone D is the least hazardous.

Identification number

A 4-digit number preceded by "UN", "NA" or "ID" assigned to a hazardous material.

[TOC Home](#)**Improvised Explosive Device (IED)**

Is a device fabricated in an improvised manner incorporating explosives or destructive, lethal, noxious, pyrotechnic, or incendiary chemicals in its design. This device generally includes a power supply, a switch or timer, and a detonator or initiator.

Inhalation Hazard

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

Interchange

The process of transferring rail cars to or from another railroad.

Intermodal tank container

An intermodal (IM) portable tank, portable tank, UN portable tank, or portable bin.

International shipment

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

Limited quantity (LTD QTY)

A term used to indicate a hazardous material shipment which is allowed an exception to certain regulatory requirements because of the small amount of the material in a package.

Marine pollutant

A hazardous material that has a detrimental effect on marine/aquatic life.

Marking

A descriptive commodity name, identification number, instructions, caution (such as INHALATION HAZARD, HOT, MOLTEN, or MARINE POLLUTANT), weight, tank car specification and qualification dates stencils, or UN marks, or combinations thereof, displayed on hazardous material shipments. (See Section IV for marking requirements.)

Mobile Train Reporting (MTR)

Train Crew Mobile Train Reporting Tablets are company-issued Railroad Supplied electronic devices programmed to provide access to important work applications and documents anywhere, anytime—including at home and away-from-home terminals. This includes access to rules, timetables, system general orders, job aids, team manuals, playbooks, TYE Mobility, quick reference cards, on-the-job checklists, Concur, the DOT emergency response guide, work orders and more.

Movement Approval

A one time authorization to move a non-conforming package not meeting the applicable hazardous material regulations. This provides no relief of any regulations other than specifically stated in the approval.

N.O.S.

Initials, found on shipping documents, which mean "Not Otherwise Specified."

Non bulk packaging

Packaging with a capacity equal to or less than 119 gallons (450 liters) for liquids, 882 pounds (400 kilograms) for solids, or a water capacity of equal to or less than 1000 pounds (454 kilograms) for gases. 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 may not be subject to the hazardous material regulations when transported by rail.

Package

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

Packing group

A grouping of hazardous materials according to the degree of danger:

- Packing Group I (shown as "PG I" or "I" on the shipping documents) indicates great danger.
- Packing Group II (shown as "PG II" or "II" on the shipping documents) indicates medium danger.
- Packing Group III (shown as "PG III" or "III" on the shipping documents) indicates minor danger.

Placard

A sign measuring at least 250 mm (9.8 in) by 250 mm (9.8 in) 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 for examples of placards).

Placarded car

A rail car displaying placards in accordance with DOT regulations.

PIH/TIH

Poison (Toxic)-Inhalation Hazard.

Poison Inhalation Hazard (PIH)

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

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.

Primary hazard

The primary category of hazard assigned to a material. See also the definition of “hazard class”.

Proper shipping name

The name of a hazardous material as specified by the regulations.

Radio waybill

A form used to record shipping description entries provided via radio by dispatcher or customer service.

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.

Reportable quantity (RQ)

The minimum quantity (in pounds or kilograms) in one package, required for a hazardous material to meet the definition of a “hazardous substance”.

Residue

The hazardous material remaining in a packaging, including a tank car, after its contents have been unloaded to the maximum extent possible. It may be indicated on the shipping documents by the phrases “RESIDUE: LAST CONTAINED”, “EMPTY . . .”, or “MTY . . .” in association with the basic description.

Shipping description entries

The specific information required on a shipping document, including the “basic description”, number and type of packages, total quantity; and additional entries that may be applicable to the shipment (such as “RQ”, “Limited Quantity”/“LTD QTY”, “Marine Pollutant”, “Poison/Toxic Inhalation Hazard Zone A (or B, C or D)”, etc.).

Special Car Handling Instructions (SCHI) Code (specific to BNSF operations)

Two-letter code used to identify the hazard class(es)/division(s) and placard(s) which may be required for a hazardous material shipment.

Special Permit

A document issued by DOT permitting alternatives or variances to existing requirements which achieve at least the same safety level or are consistent with the public interest if a required safety level does not exist. The terms “special permit” and “exemption” have the same meaning. Special Permits can be accessed through the Rules and Timetables App and on the Employee Portal, Hazmat Department page.

Shipper's Certification

A signed (or electronically printed) declaration on the shipping document 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 document that the customer provides to the crew for loaded hazardous material cars.

Shipping document

Any document providing the appropriate required entries for a hazardous material shipment. (See section II for shipping document requirements).

Subsidiary hazard

A subsidiary category of hazard assigned to a material. See also the definition of "hazard class".

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 or microbiological name used in scientific and technical handbooks, journals, and texts to further identify a hazardous material.

TIH/PIH

Toxic (Poison)-Inhalation Hazard.

Toxic Inhalation Hazard (TIH)

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

Trailer

A cargo carrying body with permanent wheels on the rear end (also called a van or semitrailer).

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. A train with rail cars containing hazmat must obey position-in-train and shipping document rules if it moves from yard to industry or yard to yard, regardless of track.

Transport vehicle

A cargo-carrying vehicle such as an automobile, van, tractor, truck, semitrailer, tank car or rail car used for the transportation of cargo by any mode.

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.