NORFOLK SOUTHERN

HM-1

UNITED STATES

HAZARDOUS MATERIALS INSTRUCTIONS FOR RAIL

EFFECTIVE JANUARY 1, 2019

The following are a summary of changes issued since the publication of the Hazardous Materials Instructions for Rail dated January 1, 2015.

PAGE	ITEM	REVISED	CHANGES
2	Section 1 – 2.a	1/1/19	Added “Canadian” regulations
3	Table 2	1/1/19	Update List of Time Sensitive Commodities and by 20 day vs 30 day
4	Table 3	1/1/19	Update list of TIH commodities
5	Section 1 – 6.b	1/1/19	Added wording “and remove classification code” (updated wording in section) and added reference to OTMA.
5	Section 1 – 6.b (1)(b)	1/1/19	Modified language for “One Time Movement Authority (OTMA)
5	Section 1 – 6.b (1)(c)	1/1/19	Remove “OSS” and replace with “Revenue Waybilling”
6	Section 2 – 1.c	1/1/19	Add word for clarification - “paper” document
6	Section 2 – 2.b	1/1/19	Removed reference to UPS hazardous materials packet
7	Section 2 – 3.b	7/11/18	Dropped wording about ERG information printed as part of the train consist as advised in OB-7 issued July 11, 2018. Renumbered 3.c to 3.b and corrected “MSDS” to “SDS”
7	Section 2 – 5.d.Exception	1/1/19	Changed wording - removed “tank car” and added Class 9 hazardous substances that are not hazardous wastes or marine pollutants
8	Section 2 – 6	1/1/19	Moved Item “Identification Number” to Item 3 and reorder the remaining sections accordingly
9	Section 2 – 6. New d. 3.	1/1/19	Modified language - change wording from begin with Residue/Last Contained to “include the phrase”.

PAGE	ITEM	REVISED	CHANGES
9	Section 2 – 6. New e	1/1/19	Modified language – to include reference to “Hazard Class” and “Divisions”.
9	Section 2 – 6.f	1/1/19	Corrected typo of “4.2” to “4.3”
10	Section 2 – 6.g(8)	1/1/19	Added exception for “krill meal, PGIII” in position (8) then reorder list accordingly
11	Section 2 – 6.h(12)	1/1/19	Corrected language for “Emergency Response Plan” to “Emegrency Response Assistance Plan (ERAP)”
11	Section 2 – 6.h(21)	1/1/19	Added section (21) “Non-Odorized” or “Not-Odorized” notation for non-odorized liquefied petroleum gas
14	Section 2 – 11.a (1)	1/1/19	Remove item (1) “proper shipping name” and renumber list
15	Section 2 – 12.a & b	1/1/19	Replaced the wording for sections a and b with emphasis on “immediately” sharing emergency response information
18	Section 3 – 2.f(1)(b)(ii)	1/1/19	Updated car certificate dimensions
20	Section 4 – 1	1/1/19	Added Note: “Not all hazardous material shipments require placards”
20	Section 4 – 2	1/1/19	Edited the placard sizes and removed Note at the end of placard section
24	Section 4 – 2.b	1/1/19	Changed wording concerning mixed loads of hazardous materials for clarification.
24	Section 4 – 2.c (8)	1/1/19	Edited wording
25	Section 4 – 2.c (11)	1/1/19	Edited wording
27	Section 4 – Marking	1/1/19	Edited wording
30	Section 4 – 4.d (1)	1/1/19	Edit wording and only need to be displayed on “one side” not “both sides”
30	Section 4 – 4.d (2)	1/1/19	Edited wording

PAGE	ITEM	REVISED	CHANGES
31	Section 4 – 4.f (1)	1/1/19	Edited wording
32	Figure 9	1/1/19	Updated tank car qualification dates, so example is not out of date
33	Section 4 – 4.h (3)	1/1/19	Edited wording
34	Section 4 – 4.i	1/1/19	Removed “Inspection for” from title, edited wording and removed wording concerning shipping papers
34	Section 4 – 4.j	1/1/19	Added Item 4.j for “Sour Crude Oil Marks” and added Figure 11 (Sour Crude Oil Mark)
35	Section 5 – 1	1/1/19	Updated Switching Chart Figure # sited to Figure12
35	Section 5 – 2	1/1/19	Edited wording for clarification – “before coupling, position yourself”
35	Section 5 – 4.a (2)	1/1/19	Added “residue/empty” instead of “empty”
36	Figure 11	1/1/19	Changed to Figure 12
38	Section 6 – 1	1/1/19	Updated Figure # sited to Figure13
38	Section 6 – 2	1/1/19	Edited definition of a train by updating 2.c and adding 2.d which is also referenced in switching definition
38	Section 6 – 3. Note 2	1/1/19	Edited wording
39	Section 6 – 4.b (5)	11/6/15	Ops. Bulletin 23 – additional restrictions on buffer cars for bulk commodity trains containing hazardous materials (ethanol, crude oil, etc.)
39	Section 6 – 4.c	1/1/19	Removed Item 4.c – redundant and covered in other sections.
40	Figure 12	1/1/19	Changed to Figure 13
42	Section 7 – 2.a	1/1/19	Key Train definition: Edited wording to clarify this includes “Toxic Inhalation Hazard”

PAGE	ITEM	REVISED	CHANGES
42	Section 7 – 2.b	1/1/19	Key Train definition: Edited wording to clarify “any combination of hazardous materials”
43	Section 7 – 4.a EXCEPTION	8/14/17	Ops Bulletin 16 - Inserted EXCEPTION section wording in SP-3 for Key Train speed limit restriction in HTUA applicable to trains carrying 20 or more loaded tank cars of Class 3 Flammable Liquids or Crude Oil
44	Section 8 – 2.b	1/1/19	Edited wording to clarify “sideswipes” are accidents and are reportable.
45	Section 8 – 4.a	1/1/19	Edited wording to specify that crew members should move “uphill and upwind the evacuation distances recommended in the Emergency Response Guidebook”.
47	Section 8 – 5.c	1/1/19	Edited wording – noted inspect hazmat (all car types) and added a note “do not step in the material (includes both liquids and solids)”. Also, advised crew to move “uphill” in addition to moving upwind.
46	Section 8 – 6.a (2)	1/1/19	Added “immediately” to instruction to provide emergency responders a copy of the emergency response information. Edited order of items b through e
47	Section 8 – 7	1/1/19	Edited wording in entire section
47	Section 8 – 8	1/1/19	Added NS ERP and Yard Evacuation information
50	Section 9 – 5.a	10/25/18	Updated list of RSSM interchange location exceptions.
52-53	Section 9 – 6.a and Figure 13	1/1/19	Renumbered Figure 13 to Figure 14

PAGE	ITEM	REVISED	CHANGES
54	Section 10 – General Requirements	1/1/19	Added requirement that all hazardous material tank car loading and unloading activities need to be coordinated through the NS Hazardous Materials Group.
55	Section 10 – 2.b(10)	1/1/19	Added wording to “verify that Test Dates are current”.
56	Section 10 – 2.b(16)(a)	1/1/19	Inserted new section (a) stating “placards must match the hazard class and 4-digit identification number on the paperwork”, and updated numbering for items b through f.

ALL
EXPOSURES
CAN
BE
SAFEGUARDED

UNITED STATES
HAZARDOUS MATERIALS INSTRUCTIONS FOR RAIL

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RAILROAD SPECIAL HAZMAT INSTRUCTIONS

NORFOLK SOUTHERN CORPORATION

1. GENERAL REQUIREMENT

These rules govern all employees of Norfolk Southern Corporation (NS) and its railroad subsidiaries. On the effective date all employees must transport and handle hazardous materials in compliance with the ***United States Hazardous Materials Instructions for Rail*** **(HM-1)**.

2. APPLICABILITY TO FOREIGN LINES

Foreign line carriers with trackage rights on NS are governed by the ***United States Hazardous Materials Instructions for Rail***. If the foreign line railroad has adopted and issued a comparable document containing the ***United States Hazardous Materials Instructions for Rail***, foreign line employees are not required to maintain and have accessible while on duty a current copy of the NS version of the document.

NS employees when operating on a foreign railroad are not required to have a copy of the foreign line hazardous materials manual if the foreign line carrier is governed by the ***United States Hazardous Materials Instructions for Rail***.

3. EFFECTIVE DATE

These instructions take effect 12:01 AM, Eastern Standard Time, Monday, January 1, 2019. They supersede all previous rules and instructions inconsistent herewith.

Further instructions may be issued by proper authority.

Mike J. Wheeler

Executive Vice President and Chief Operating Officer

Norfolk Southern Corporation

NORFOLK SOUTHERN VISION

Be the safest, most customer-focused and successful transportation company in the world.

INTRODUCTION

1. PURPOSE

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

2. POLICY

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

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

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

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

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

3. QUESTIONS

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

SECTION 1 — GENERAL INFORMATION

1. DEFINITION OF HAZARDOUS MATERIALS

a. Hazardous materials are defined by the Secretary of Transportation as hazardous substances, hazardous wastes, marine pollutants, elevated temperature materials, and materials designated in the Hazardous Materials Table found in the U.S. Code of Federal Regulations (49 CFR 172.101).

b. Hazardous materials are classified according to their chemical and/or physical properties. There are nine numeric classes, some of which may be divided into divisions and two worded classes. 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.

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, Canadian and/or 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

a. All loaded hazardous material shipments and residue/empty time-sensitive hazardous material shipments (see **Table 2**) must be forwarded towards the destination serving yard or applicable interchange as follows:

(1) 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

(2) when less than 5 day week service is performed, on the first available train toward the destination.

EXCEPTION: The 48 hour rule does not apply to shipments that are constructively placed or set out for repair.

b. All Toxic Inhalation Hazard (TIH) shipments must be delivered into the customer's facility at the next available switch after the TIH shipments have arrived in the railroad's yard at final destination. For ease of reference, TIH's commonly transported by NS include the commodities identified in **Table 3**.

If delivery cannot take place, Operations Service & Support (OSS) must be notified immediately with the reason for failure, and an alternative switching schedule, when applicable, must be scheduled.

TABLE 1. HAZARD CLASSES AND DIVISIONS
Numbered Classes and Divisions
1 — *Explosives* 1.1 — Explosive with mass explosion hazard 1.2 — Explosive with projection hazard 1.3 — Explosive with predominantly fire hazard 1.4 — Explosive with no significant blast hazard 1.5 — Very insensitive explosive; blasting agent 1.6 — Extremely insensitive detonating substance **2 — *Gases*** 2.1 — Flammable gas 2.2 — Non-flammable, 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 Liquid **ORM-D (Other Regulated Materials)** *(Exempt from placarding and labeling in rail transportation, but subject to packaging, marking, and possibly, shipping paper requirements.)*

TABLE 2. TIME-SENSITIVE SHIPMENTS			
(1) Chloroprene, Stabilized	UN1991	4907223	20-Day
(2) Ethylene, Refrigerated Liquid	UN1038	4905735	20-Day
(3) Flammable Liquid, N.O.S. (Methyl Methacrylate Monomer, Uninhibited)	UN1993	4907255	20-Day
(4) Hydrogen Chloride, Refrigerated Liquid	UN2186	4920504	20-Day
(5) Hydrogen, Refrigerated Liquid	UN1966	4905745	20-Day
(6) Vinyl Fluoride, Stabilized	UN1860	4905793	20-Day
(7) Styrene Monomer, Stabilized	UN2055	4907265	30-Day
(8) Styrene Monomer, Stabilized (Recycled)	UN2055	4907235	30-Day

TABLE 3. TOXIC INHALATION HAZARD (TIH) SHIPMENTS COMMONLY TRANSPORTED ON NS	
(1) Acetone Cyanohidrin, Stabilized	UN1541
(2) Allyl Alcohol	UN1098
(3) Anhydrous Ammonia	UN1005
(4) Chlorine	UN1017
(5) Chloropicrin	UN1580
(6) Dimethyl Sulfate	UN1595
(7) Ethylene Oxide	UN1040
(8) Hydrogen Chloride, Refrigerated Liquid	UN2186
(9) Hydrogen Fluoride, Anhydrous	UN1052
(10) Methyl Bromide	UN1062
(11) Phosphorous Trichloride	UN1809
(12) Sulfur Dioxide	UN1079
(13) Sulfur Trioxide, Stabilized	UN1829
(14) Sulfuric Acid, Fuming	UN1831
(15) Toxic By Inhalation Liquid, Corrosive, N.O.S.	UN3390

NOTE: A comprehensive list of TIH materials is found in the HM-1 Appendix and in Appendix A of AAR Circular OT-55 “Recommended Railroad Operating Practices for Transportation of Hazardous Materials”.

4. EXCEPTIONS FOR U.S. GOVERNMENT MATERIAL

a. Department of Energy (DOE) and Department of Defense (DOD) shipments made for the purpose of national security and accompanied by escorts (personnel specifically designated by or under the authority of DOD or DOE) are **not** subject to DOT regulations or to the instructions in this book.

b. Escorts must travel in a separate transport vehicle from the rail car carrying the hazardous materials.

c. The escorts must have in their possession a document certifying that the shipment is for the purpose of national security.

5. INTERNATIONAL SHIPMENTS

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

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

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

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

(1) returning residue shipments;

or

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

6. OVERWEIGHT HAZARDOUS MATERIALS CARS

a. A hazardous material car discovered in transportation to exceed the maximum allowable total gross weight on rail may be forwarded in transportation without any movement restriction provided the overloaded amount is:

(1) 1% or less of the allowable gross weight on rail, rounded up to the next 100 lbs. for cars weighed on weigh-in-motion scales (for example, if the allowable gross weight is 263,000 lbs., the weight may not exceed 265,700 lbs.).

(2) 1,000 lbs. or less of the allowable gross weight on rail for static scales.

b. OSS must be immediately notified to put a HAZMAT HOLD and remove classification code on a hazardous material car discovered in transportation exceeding the unrestricted maximum allowable total gross weights described above. The car may <u>not</u> be forwarded in transportation unless:

(1) The car is overloaded by 10,000 lbs. or less, and the following actions are completed to authorize the car to move.

(a) OSS will require the shipper to complete and sign a Waiver of Liability;

(b) OSS will require the shipper to obtain a One Time Movement Authority (OTMA) from the Federal Railroad Administration (FRA), requesting that car be authorized to move to the closest point (either the origin or destination);

(c) Revenue Waybilling will add the FRA OTMA number to the shipping papers; and

(d) NS Mechanical Dept. must perform a visual inspection of the car to determine if there are any signs of distress, and if it is safe to move.

(2) If the car is overloaded by more than 10,000 lbs., OSS will coordinate with the shipper and the NS Hazardous Materials Group to off-load product from the car, below the allowable gross weight on rail.

SECTION 2 — REQUIRED DOCUMENTATION

1. GENERAL REQUIREMENTS

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

a. Acceptable shipping papers.

b. Acceptable emergency response information.

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

The use of a RIT Device (Remote Intelligence Terminal) cannot be used as a substitute for the required hazardous material documentation listed above. A member of the crew must have the required shipping papers, emergency response information, and current position of the hazardous material shipments in the train on a printed document.

NOTE: The purpose of this documentation is to provide railroad personnel and emergency response personnel with accurate information about the hazardous materials. Therefore, keep all current hazardous material documents neat and orderly and ensure that they are available in case of an emergency or for inspection. Properly discard superseded documents to eliminate the possibility of confusing or inconsistent information.

2. ACCEPTABLE SHIPPING PAPERS

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

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

b. **Customer-produced documents** — for example, bills of lading or switch lists.

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

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

e. A **hazardous waste manifest**.

3. ACCEPTABLE EMERGENCY RESPONSE INFORMATION

a. The ***Emergency Response Guidebook*** (ERG) contains acceptable emergency response information.

b. Similar information provided by the customer — for example, a Safety Data Sheet (SDS).

4. DOCUMENT INDICATING POSITION-IN-TRAIN

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

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

5. CHECKING FOR SHIPPING PAPERS

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

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

b. Moving hazardous material shipments in a train.

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

d. Switching hazardous material shipments outside a yard.

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

EXCEPTION: Although they may remain placarded and marked, residue/empty packages of "Elevated Temperature Material" and Class 9 hazardous substances that are not hazardous wastes or marine pollutants do not require hazardous material shipping papers and emergency response information.

6. REVIEWING SHIPPING PAPER ENTRIES

Review the shipping description entries for each hazardous material on the shipping papers and make sure that the following entries (a–g in **Figure 1**) are present. (**Figure 1** shows two formats, each having two acceptable variations for displaying the shipping description entries.)

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

FIGURE 1. SHIPPING DESCRIPTION ENTRIES
Vertical Format
GATX 12345 (a) 1/TC (b) UN1830 (e) SULFURIC ACID (c) 8 (d) PGII (f) RQ (SULFURIC ACID) (h3) EMERGENCY CONTACT: 800-424-9300 (g) HAZMAT STCC = 4930040 (h11)
Horizontal Format
UTLX 12345 (a) 1/TC (b) // UN1017 (e) // CHLORINE (c) // 2.3 (5.1, 8) (d) // RQ (CHLORINE) (h3) // POISON-INHALATION HAZARD (h6) // ZONE B (h7) // MARINE POLLUTANT (CHLORINE) (h4) // EMERGENCY CONTACT: 800-424-9300 (g) // HAZMAT STCC = 4920523 (h11)
Items (a) through (g) are required entries for the basic hazardous materials description. Item (h) refers to additional entries that may appear. Typically, items (b) through (f) are in the sequence shown; however, certain items (technical name and subsidiary hazard class) may appear in parentheses between items (b) through (f).

b. Total Quantity Notation

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

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

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

(b) number and type of packages; for example, “12 drums”, “12 UN 1A1”, “15 4G”, or “2 UN 3H1 JERRICAN”.

(3) For Class 1 materials, the quantity shown must be the Net Explosive Mass.

c. Identification Number

A 4-digit identification number must appear on the shipping papers with the prefix “UN” (United Nations) or “NA” (North America) as appropriate.

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, see the definition in the Glossary and the list of hazard classes and divisions in **Table 1.**

(1) For certain hazardous materials, the subsidiary hazard class(es)/division(s) will appear after the primary hazard class. 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 “Combustible Liquid” 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 may show a compatibility group letter after the hazard class (for example, “1.1A”). The letter has no significance in rail transportation.

f. Packing Group

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

EXCEPTIONS: Hazard Classes 1.1, 1.2, 1.3, 1.4, 1.5, 1.6, 2.1, 2.2, 2.3, 4.1 (self-reactive liquids or solids, types B–F), 5.2, 6.2, 7, and ORM-D do not require the packing group notation. In addition, the following identification numbers from Classes 3, 4.2, 4.3, 5.1, 8, and 9 do not require the packing group notation:

NA1365	UN3121	UN3269	UN3343	UN3477
UN2426	UN3127	UN3316	UN3363	
UN2990	UN3166	UN3334	UN3473	
UN3072	UN3171	UN3335	UN3476	

g. Emergency Response Telephone Number

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

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 may contain one or more of these entries:

(1) "Residue: Last Contained ..." (for packages emptied to the maximum extent possible).

(2) "HOT" notation added before a proper shipping name for elevated temperature materials.

(3) "RQ" for Reportable Quantity notation of a hazardous substance.

(4) "MARINE POLLUTANT" notation.

(5) "POISON" or "TOXIC" notation.

(6) "POISON (TOXIC)-INHALATION HAZARD (PIH or TIH)" or "INHALATION HAZARD (IH)" notation.

(7) Hazard Zone notation ("ZONE A," "ZONE B," "ZONE C," or "ZONE D").

(8) "LIMITED QUANTITY" or "LTD QTY" notation.

(9) FRA Movement Approval (for example, "FRA 0109123"), DOT Special Permit (for example, "SP 9271"), Special Approval Number (for example, "SA 920403"), or Competent Authority Number (for example, "CA 9701001").

(10) DOT-113 notation ("DOT-113, Do Not Hump or Cut-Off in Motion").

(11) Hazardous Materials Response Code (STCC "48xxxxx" or "49xxxxx").

(12) Certain shipments described using Canadian regulations may contain both an Emergency Response Assistance Plan (ERAP) number and its activation telephone number (e.g., "ERP-2-1008 (800-555-5555) // SPECIAL COMMODITY").

(13) Box of asterisks with or without wording (not required by DOT, but may appear on railroad-produced documents).

(14) Shipper's Certification.

(15) "OIL" notation.

(16) Additional radioactive material entries.

(17) Name and address of the place of business in Canada of the consignor.

(18) Additional hazardous waste shipping description entries (see **Section 2, Item 11a**).

(19) An EX number for Air Bag Inflators or Modules classified as Class 9. **NOTE:** Recycled Air Bag Inflators or Modules do not require the EX number entry but must have the words "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 PAPERS OR REQUIRED ENTRIES ARE NOT AVAILABLE

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

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

b. Take one of these three actions:

(1) Correct the existing document. Contact the customer or your supervisor, request the entries required to complete the shipping description, and legibly print those entries in the appropriate sequence (see **Section 2, Item 6**).

or

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

or

(3) Use a radio waybill.

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

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

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

NOTE: If a radio waybill form is not available, legibly print the required hazardous material information on a sheet of paper including the car's initials and number (see **Section 2, Item 6**).

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

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

8. CHECKING FOR EMERGENCY RESPONSE INFORMATION

a. When accepting and transporting hazardous material shipments, make sure a copy of the emergency response information for each shipment (see **Section 2, Item 3**) is available.

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

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FIGURE 2. EXAMPLE RADIO WAYBILL

NOTE: Print legibly

HAZARDOUS MATERIAL

1. Train Number_____
2. Number of Cars from Head End_____
   (Update the position-in-train documents)
3. Car Initial & No._____
4. Total Quantity Notation (Circle One):
   Tank Car Car Load Residue last Contained Other
   If Other, specify weight or volume_____

***** DESCRIPTION OF ARTICLES *****

5. Number of Packages/Car_____
6. UN/NA Id. No. _____
7. Proper Shipping Name_____
   _____
8. Technical Name (_____)
9. Primary Hazard Class_____
   Secondary Hazard Class_____
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 Number(s):_____
    _____
15. Additional Information_____
    _____
16. ERP Plan No.:_____
    (Canadian Shipments Only)
17. ERP Telephone No.: (_____)_____- _____
    (Canadian Shipments Only)
18. Emergency Contact (_____) _____-_____
    (_____) _____-_____

Completed:

Date: _____ /_____ /_____ Time: _____ : _____ AM
MO DAY YR PM

9. CHECKING FOR POSITION-IN-TRAIN DOCUMENT

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

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

(1) update the documents already in your possession;

or

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

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

10. HANDLING SHIPPING PAPERS RECEIVED FROM A CUSTOMER

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

a. Check for appropriate hazardous material entries.

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

11. HANDLING HAZARDOUS WASTE SHIPPING PAPERS AND MANIFESTS

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

(1) Name, address, and telephone number of the hazardous waste generator.

(2) Name and address of the hazardous waste disposal facility.

(3) Name of transporter.

(4) Waste manifest number.

(5) Special handling instructions.

b. Before picking up a rail car containing hazardous waste from a hazardous waste generator, either:

(1) the shipper/generator will sign the original hazardous waste manifest if they have the authority to sign on behalf of the company;

or

(2) a member of the train crew, or another designated railroad employee, must sign on behalf of the company in the "Transporter acknowledgement" section of the manifest.

c. When delivering rail cars of hazardous waste to a disposal facility, either:

(1) the disposal facility has an agreement with the company to forward the signed manifest directly to Revenue Waybilling;

or

(2) a train crewmember or other designated employee must obtain a handwritten signature by a person representing the disposal facility on the manifest or on the shipping paper if the manifest is not available, which then must be forwarded to Revenue Waybilling.

12. HANDLING REQUESTS FOR SHIPPING PAPERS OR EMERGENCY RESPONSE INFORMATION

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

a. Immediately share any requested information from the shipping papers for the shipment, and provide an extra copy of the train list/consist when available. **Note:** Retain any waybills and a copy of the train list/consist until you can deliver them to the first railroad manager on the scene.

b. Immediately provide a copy of the emergency response information provided with the shipment.

SECTION 3 — CAR 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., 1,000 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 make up, adequate buffer cars, shiftable loads and temperature control equipment (see Position-In-Train Chart, Instructions 1 through 5) as well as mechanical requirements, visually inspect each loaded or residue/empty hazardous material shipment (including flat cars transporting placarded or marked trailers or containers) and adjacent rail cars, **from ground level** (do not climb on or go under the car) and check for:

- Leakage.
- Required placards and markings (including stenciling, car certificates, and qualification dates — see **Section 4** for details).
- Secure fastening of closures.
- 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. ***(This inspection must take place from the ground, at a close enough distance so that any problems can be readily identified, and must NOT be performed from a moving vehicle.)***

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

  - Do not accept or move the rail car.
  - Immediately move yourself and others to a safe location away from the rail car before using radios and cell phones to make notifications.
  - For cars at a customer’s facility, immediately contact local plant personnel. If local plant personnel are not available or cannot explain what you see, immediately contact the Train Dispatcher or Yardmaster.
  - For cars on interchange tracks or in the yard, immediately contact the Train Dispatcher or Yardmaster.

a. Inspecting All Car Types (from ground level)

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

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

(b) Look for a vapor cloud.

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

NOTE: If you find a hazardous material shipment leaking, follow the instructions in **Item 3** of this section and in **Section 8 (Emergency Response), Item 5**.

(2) Make sure placards and markings are appropriate for the shipment in good condition and displayed correctly (see **Section 4, Placards and Markings**).

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

(a) All customer loading and unloading lines are disconnected.

(b) Derails, chocks, and blue flags are removed.

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

b. Inspecting Tank Cars (from ground level)

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

(1) Protective housing covers are closed.

(2) Manway cover swing bolts are up and in place.

(3) All valves and fittings appear to be closed and secure.

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

NOTE: When heater coil caps are provided, they must be applied.

(5) "Double shelf couplers" and roller bearings are present.

c. Inspecting Placarded/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 Placarded/Marked Hopper Cars (from ground level)

Check that discharge gates are closed and secured.

e. Inspecting Placarded/Marked Intermodal Cars (from ground level)

(1) Make sure that an intermodal tank container of hazardous materials is not transported with a container above or below the tank.

(2) Placards must be fully visible when containers are loaded in a well car.

(3) Intermodal tanks must be placed so that any bottom outlet valves are pointed toward the ends of the well car or platform

f. 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 Certificate**) are displayed on both sides of the rail car.

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

(ii) Car certificates are either 18 cm (7.1 in) by 18 cm (7.1 in) or 15 cm (5.9 in) by 20 cm (7.9 in) in size.

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

3. HANDLING DEFECTS

When a hazardous material shipment does not appear to be 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.

FIGURE 3. CAR CERTIFICATE

_____ Railroad

No. 1 _____ Station, _____, 20 _____

I hereby certify that I have this day personally examined

Car Number _____ and that the car is in condition for service and complies with the FRA Freight Car Safety Standards (49 CFR Part 215) and with the Requirements for freight cars used to transport explosives prescribed by the DOT Hazardous Materials Regulations (49 CFR Part 174).

_____

(Qualified Person Designated Under 49 CFR 215.11)

No. 2 _____ Station, _____, 20 _____

I have this day personally examined the above car and hereby certify that the explosives in or on this car, or in or on vehicles or in containers have been loaded and braced; that placards have been applied, according to the regulations prescribed by the Department of Transportation; and that the doors of cars so equipped fit or have been stripped so that sparks cannot enter.

_____

(Shipper or his authorized agent)

_____

(Qualified Person Designated Under 49 CFR 215.11)

No. 3 _____ Station, _____, 20 _____

I hereby certify that I have this day personally supervised the loading of the vehicles or containers on and their securement to the above car.

_____

(Shipper or railway employee inspecting loading and securement)

NOTE 1: A shipper must decline to use a car not in proper condition.

NOTE 2: All certificates, where applicable, must be signed.

SECTION 4 — PLACARDS AND MARKINGS

1. GENERAL REQUIREMENT

Hazardous material shipments that are not properly placarded and marked, whether loaded or containing a residue, must NOT be accepted for transportation or transported unless they are specifically excluded from this requirement in Section 2 below.

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 papers 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, hazard class/division number, and possibly, text. (See **Figure 4** for pictures of placards.) Text indicating the hazard is not required on placards other than the Class 7 (Radioactive) and DANGEROUS placards; however, for shipments originating internationally, text may not appear on a Class 7 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** 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 Poisonous (toxic) material, inhalation hazard, Hazard Zone A, and Hazard Zone B

7 Radioactive Yellow III label or exclusive use shipments of low specific activity (LSA) materials and surface contaminated objects

FIGURE 4.
PLACARDS FOR HAZARDOUS MATERIALS BY HAZARD CLASS

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 2 *(Gases)*

Division 2.1
(Flammable Gas)

Division 2.1 (Flammable Gas in cryogenic form in DOT-113 Tank Car)

Division 2.2
(Non-flammable Gas)

Division 2.3 Zone A
(Poison Gas)

Division 2.3 Other than Zone A
(Poison Gas)

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.

Oxygen

Anhydrous Ammonia
Canadian Only

Class 3 *(Flammable Liquids)*

Class 3
(Flammable Liquid)

Class 3 *(Combustible Liquids)*

Class 3
(Combustible Liquid)

FIGURE 4.
PLACARDS FOR HAZARDOUS MATERIALS BY HAZARD CLASS

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 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)], PGII, or PGIII

Division 6.1
PGIII

NOTE: The word "TOXIC" can be used in place of the word "POISON."

Class 7 ***(Radioactive Materials)***

Class 7
(Radioactive Material)

Class 8 ***(Corrosive Materials)***

Class 8
(Corrosive Material)

Class 9
(Miscellaneous Hazardous Materials)

Class 9
(Miscellaneous Hazardous Material)

Class 9
(Mixed Load)

U.S. Canadian

b. Placards are required when transporting total weight of **1,001 lbs. (454 kg) or more** of these hazard classes:

NOTE: Placards may be displayed for quantities less than 1,001 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 Non-flammable, nonpoisonous compressed gas

3 Flammable liquid

4.1 Flammable solid

4.2 Spontaneously combustible material

5.1 Oxidizer

5.2 Organic peroxide, other than "organic peroxide, Type B, liquid or solid, temperature controlled" in **2a** above

6.1 Poisonous (toxic) material other than materials poisonous (toxic) by inhalation

NOTE: For U.S. transportation of Class 6.1, PGIII, a PGIII placard may be used in place of a POISON (TOXIC) placard.

8 Corrosive material

9 Miscellaneous hazardous material

EXCEPTION: For U.S. transportation only, Class 9 placards are not required. However, bulk shipments of Class 9 materials must be marked with the identification number (see **Section 4, Item 4**).

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

Mixed loads of hazardous materials only including commodities listed in **Section 4**, **Item b**.

c. Placards are not required for:

(1) Hazardous material shipments with less than 1,001 lbs. (454 kg) total weight, provided the hazard classes are included in **Item b** above

(2) ORM-D (Other Regulated Materials - D)

(3) Class 6.2 (Infectious Substances)

(4) Class 9 (U.S./Canadian) materials that display the identification number

(5) Limited Quantity (LTD QTY) shipments when identified as such on shipping papers

(6) Cryogenic atmospheric gases, other than Oxygen (for example, Argon)

(7) Combustible liquids in non-bulk packaging (i.e., drums), usually found in intermodal shipments, unless the material is a hazardous substance or hazardous waste

(8) Rail cars and intermodal tank containers of hazardous materials which have been cleaned and purged

(9) Shipments listed as Radioactive White I and Yellow II labels on shipping papers

(10) Class 1.4S

(11) Shipments of molten sulfur moving to or from Canada, provided the letters and numerals “UN2448”, or the numerals “2448” 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 2.1 Flammable Gases loaded in DOT113 tank cars including tank cars containing only a residue of the material.

(3) Hazard Class 2.3 or 6.1 Poison Inhalation Hazard Zone A 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 **Item 2b** of this section.

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

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

NOTE: Subsidiary placards must be displayed when the subsidiary class is 2.3, 4.3, or 6.1 with the notation POISON-INHALATION HAZARD or TOXIC-INHALATION HAZARD present on the shipping papers.

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

(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 paper 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 a customer's facility or siding and a placard is not correct, does not meet the standards above, or is missing:

(1) Notify the customer, Train Dispatcher, Yardmaster, or your supervisor, as appropriate.

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

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

4. MARKING REQUIREMENTS AND INSPECTING FOR MARKINGS

Marking — a descriptive commodity name, identification number, caution (such as inhalation hazard, elevated temperature material, marine pollutant, fumigant, non-odorized, sour crude oil), or tank car specification and qualification dates stencils displayed on hazardous material shipments.

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

a. Identification Number Mark

(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 materials (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. (4,000 kg) or more of non-bulk packages of hazardous materials, with the same proper shipping name and identification number, are loaded at one location and the transport vehicle does not contain any other hazardous or non-hazardous materials.

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

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

(3) Identification numbers must not be displayed on:

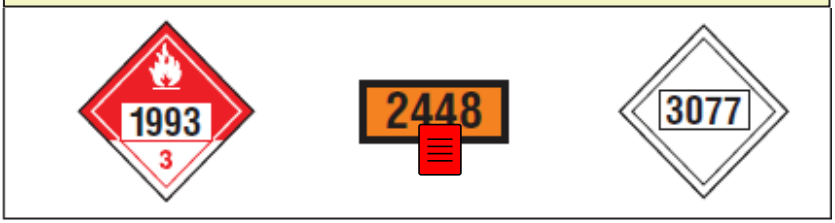
(a) EXPLOSIVES 1.1, 1.2, 1.3, 1.4, 1.5, or 1.6 placards.

(b) RADIOACTIVE placards.

(c) DANGEROUS placards.

(d) Subsidiary placards.

FIGURE 5. IDENTIFICATION NUMBERS



(4) Make sure that the identification numbers appear as required above and agree with the shipping paper entries.

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

(a) Notify the customer, Train Dispatcher, Yardmaster, or your supervisor, as appropriate.

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

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

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

b. MARINE POLLUTANT Mark

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

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

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

(a) Notify the customer, Train Dispatcher, Yardmaster, or your supervisor, as appropriate.

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

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

FIGURE 6. MARINE POLLUTANT MARK

c. ELEVATED TEMPERATURE MATERIAL Mark

(1) For a material described on the shipping papers with the words "HOT," "ELEVATED TEMPERATURE," or "MOLTEN" and transported in a bulk packaging, the ELEVATED TEMPERATURE MATERIAL mark must be displayed on two opposing sides of the bulk packaging, in one of the following valid formats:

(a) The word "HOT" stenciled on the packaging itself.

(b) The words "MOLTEN SULFUR" (or "MOLTEN SULPHUR") or "MOLTEN ALUMINUM" (or "MOLTEN ALUMINIUM"), as appropriate, stenciled on the packaging itself.

(c) The international ELEVATED TEMPERATURE MATERIAL symbol (see **Figure 7**).

(d) The word HOT displayed on a plain white square-on-point configuration having the same outside dimensions as a placard (see **Figure 7**).

NOTE: Residue/empty shipments that last contained ELEVATED TEMPERATURE MATERIAL (HOT), such as asphalt, are not considered hazardous materials and do not require hazardous material shipping description entries on the shipping paper. When the shipping paper indicates empty, the shipment may be accepted and moved in rail transportation without the hazardous material shipping description entries, even though the ELEVATED TEMPERATURE MATERIAL 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 ELEVATED TEMPERATURE MATERIAL 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 mark is not legible or is missing **en route**, notify the Train Dispatcher, Yardmaster, or your supervisor, as appropriate. They will arrange to correct the problem at the next inspection point.

FIGURE 7. ELEVATED TEMPERATURE MATERIAL MARK

d. LIMITED QUANTITIES Mark

(1) For a material listed on the shipping papers as “LIMITED QUANTITY” or “LTD QTY”, the LIMITED QUANTITIES mark (see Figure 8) must be displayed on one side and both ends of trailers/containers as explained below.

(a) The LIMITED QUANTITIES mark is required:

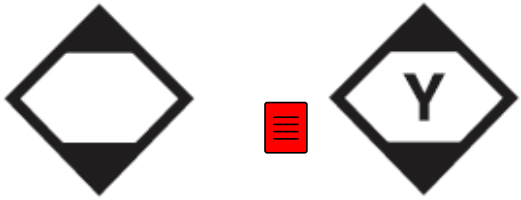
(i) When the entire load of hazardous materials is limited quantities.

(ii) For a mix of non-hazardous materials and hazardous materials in limited quantity.

(b) The LIMITED QUANTITIES mark is not required when there are limited quantities and other hazardous materials NOT in limited quantities, but you would placard for the regular hazardous materials.

(2) A package displaying the LIMITED QUANTITIES mark is not subject to additional marking requirements for non-bulk packages (e.g., proper shipping name or identification number marking) unless it contains a hazardous substance or a hazardous waste.

FIGURE 8. LIMITED QUANTITIES MARK



e. INHALATION HAZARD Mark

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

NOTE: When the words “INHALATION HAZARD” appear on the placards, the “INHALATION HAZARD” mark is not required on the bulk packaging.

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

(a) Notify the customer, Train Dispatcher, Yardmaster, or your supervisor, as appropriate.

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

(3) When the “INHALATION HAZARD” marking is illegible or missing **en route**, notify the Train Dispatcher, Yardmaster, or your supervisor, as appropriate. They will arrange to correct the problem at the next inspection point.

f. Commodity Name

(1) For intermodal tank containers transporting any hazardous materials and for tank cars transporting certain hazardous materials, the commodity name must appear on two opposing sides of the intermodal tank container or tank car. The commodity name (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 papers and may include the technical name, although it is not specifically required.

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

(a) Notify the customer, Train Dispatcher, Yardmaster, or your supervisor, as appropriate.

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

(3) When the commodity name on a tank car is discovered illegible or missing **en route**, notify the Train Dispatcher, Yardmaster, or your supervisor, as appropriate. They will arrange to correct the problem at the next inspection point.

NOTE: See Appendix for a list of materials that require the commodity name to be stenciled on tank cars.

g. Tank Car Qualification Dates

(1) Make sure the stencils describing the tank car specification (e.g. DOT 111A100W1) and qualification dates are legible (see **Figure 9**). 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.

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

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

FIGURE 9. TANK CAR QUALIFICATION DATE (New Style Example)

	STATION STENCIL	QUALIFIED	DUE
TANK QUALIFICATION	ABC-1	2014	2024
THICKNESS TEST	ABC-1	2014	2024
SERVICE EQUIPMENT	ABC-1	2014	2024
PRD VALVE: 75 PSI	DEF-1	2014	2024
LINING	ABC-1	2014	2024
88.B.2 INSPECTION	ABC-1	2014	2024
STUBB SILL INSPECTION	ABC-1	2014	2024

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: Fumigant mark is required on each point of entry to a trailer or container.

(3) Shipping Description Entries

(a) For U.S. shipments that are fumigated, information on the shipping papers is not required.

(b) For International (Canadian and IMDG) shipments verify that the information for the shipment on the shipping papers includes the following entries — 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 transporting non-odorized liquefied petroleum gas (LPG) must be legibly marked NON-ODORIZED or NOT ODORIZED on two opposing sides, either near the marked proper shipping name or near the placard(s).

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

j. Sour Crude Oil Mark

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 11)** which must be displayed at each location (e.g. manway) where exposure to hydrogen sulfide vapors may occur. The square-on-point must be black or red on a white or other contrasting background, and the skull and crossbones symbol must be black, located in the center of the square-on-point, and clearly visible.

FIGURE 11. SOUR CRUDE OIL MARK

SECTION 5 — SWITCHING

1. GENERAL REQUIREMENT

Switch placarded hazardous material shipments only in compliance with the restrictions on the Switching Chart (see **Figure 12**).

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. It 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 6** and the required documentation requirements in **Section 2**.

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

2. SAFETY

Before coupling, position yourself toward the end of a tank car, at least 15 feet, and more if possible, from the manway and valves. Contents of tank cars may splash during or immediately following coupling due to improperly secured closures or the impact of coupling.

3. WHEN TO USE THE SWITCHING CHART

Refer to the Switching Chart:

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

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

4. HOW TO USE THE SWITCHING CHART

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

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

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

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

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

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

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

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

FIGURE 12.
SWITCHING CHART

NORFOLK SOUTHERN HAZARDOUS MATERIALS SWITCHING CHART

HOW TO USE THIS CHART

Select the applicable column of the Switching Chart by:

a. Identifying the placard or markings applied to the car;

b. Determining the load or residue status of the car by the notation "RESIDUE: LAST CONTAINED" on the paperwork;

c. Identifying the car type involved by observation (e.g., tank car, hopper car, gondola, etc.); and then

d. Finding the applicable section, based on the placard marking applied, the load or empty status, and the car type.

Read and follow the restrictions associated with the placard or markings as indicated by "X"s in the columns.

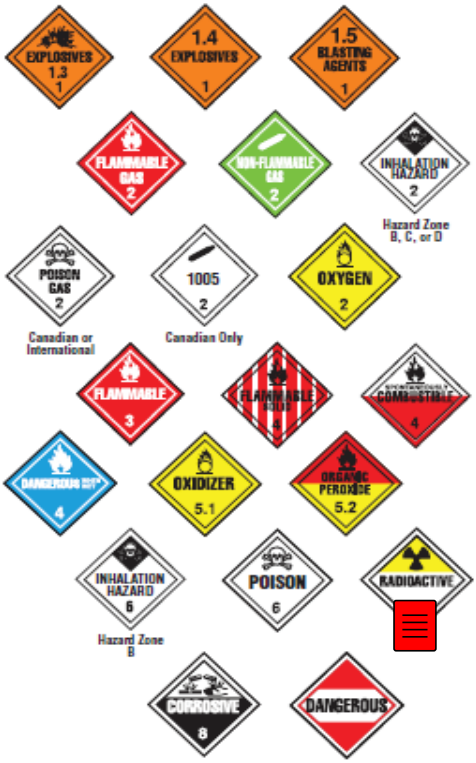
EQUIVALENT PLACARDS

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

NOTE: The words "POISON" and "TOXIC" can be used interchangeably on placards displayed in Group 3. Flat car means any loaded TOFC or COFC.

	GROUP 1	GROUP 2
		Hazard Zone A Hazard Zone A DOT-113 Tank Car
RESTRICTIONS	Any Car	Any Car
1 Must be separated from a locomotive by at least one non-placarded car or by one Group 4 placarded or marked car. Do not place where there is any probable danger of fire such as switch heaters. Do not place under bridges, under overpasses, or along passenger stations.	X	
2 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.	X	X
3 Must not be cut off in more than two cars. No more than two car cuts can couple into these cars.	**Not Allowed per Restriction 2**	**Not Allowed per Restriction 2**
4 When using hand brakes: • Do not cut cars off until all preceding cars are clear of the lead. • Do not cut off any cars to follow until the lead is clear.		

FIGURE 12.
SWITCHING CHART

GROUP 3			GROUP 4
			
Loaded Tank Car	Any Flat Car	Other Loaded Car / Residue Tank Car	Any Car
	X		
X	Not Allowed per Restriction 2		
X			

SECTION 6 — TRAIN PLACEMENT

1. GENERAL REQUIREMENT

Place placarded hazardous material shipments in a train so as to comply with the instructions on the Position-in-Train Chart (**see Figure 13**).

NOTE: Correct hazardous materials train placement errors at the first location that allows switching, once an error is identified.

A **Train** is one or more locomotives coupled, with or without rail cars, displaying a marker, requiring an appropriate air brake test.

When taking charge of trains at initial terminals and at outlying locations, Conductors must physically observe the first six (6) cars of their train to ensure the correct placement of placarded hazardous material cars. This requirement is not applicable for intermodal trains and it does not apply at crew change points when a direct physical transfer is made between crews.

2. WHEN TO USE THE POSITION-IN-TRAIN CHART

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

a. Before a train departs the initial terminal.

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

c. When moving hazmat cars to or from interchange tracks that are owned and operated by another railroad.

d. When moving hazmat cars to or from a shipper's facility or industry tracks into or out of the yard.

3. HOW TO USE THE POSITION-IN-TRAIN CHART

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

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

NOTE 1: When placards are displayed but are not required by regulation (permissive placarding), the rail car must be switched as required for the placard displayed.

NOTE 2: Molten sulfur identified on the shipping paper as a 4.1, moving to or from Canada and displaying the letters and numerals "UN2448" or the numerals "2448" and the words "MOLTEN SULFUR" (or "MOLTEN SULPHUR") is exempt from placarding and will be treated the same as Group 5 on the Position-in-Train Chart.

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

NOTE: The notation "RESIDUE: LAST CONTAINED" on the shipping papers indicates a residue/empty shipment.

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

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

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

4. GENERAL INFORMATION

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

b. A buffer car is a:

(1) Non-placarded rail car.

(2) Rail car with a placard or marking shown in Group 5 on the Position-in-Train Chart .

(3) Residue/empty tank car, as long as it complies with Restriction #2 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.

(5) For a loaded bulk commodity train containing hazardous materials (ethanol, crude oil, etc.), a buffer car must:

- Weigh a minimum of 45 tons, and
- Be at least 41 feet long and not exceeding 70 feet in length.

c. A locomotive, working or not working and regardless of placement in a train, is always considered as a locomotive for train placement of hazardous materials. A locomotive can NEVER be counted as a buffer car for train placement purposes.

FIGURE 13.
POSITION-IN-TRAIN CHART

NORFOLK SOUTHERN HAZARDOUS MATERIALS POSITION-IN-TRAIN CHART

HOW TO USE THIS CHART

Select the applicable column of the Position-in-Train Chart by:

a. Finding the placard or markings applied to the car;
b. Determining the load or residue status of the car by the notation "RESIDUE: LAST CONTAINED" on the paperwork;
c. Identifying the type of car involved by inspection; and then
d. Finding the appropriate column based on the placard applied, load or residue status, and car type.

Read and follow the restrictions associated with the placard or markings as indicated by "X"s in the columns.

EQUIVALENT PLACARDS

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

NOTE: The words "POISON" and "TOXIC" can be used interchangeably on placards displayed in Group 4.

		GROUP 1	GROUP 2	
			Hazard Zone A Hazard Zone A	
RESTRICTIONS		Any Car	Loaded Tank Car	Residue Tank Car
1	When train length permits, must not be nearer than the 6th car from a locomotive or any occupied caboose, shoving platform, or passenger car. If length does not permit, must be near the middle of the train.	X	X	
2	Locomotive, any occupied caboose, shoving platform or passenger car.	X	X	X
3	Open-top cars (including bulkhead flats) when any of the lading protrudes beyond the car ends or if shifted would protrude beyond the car ends.	X	X	
4	Loaded flat cars except closed TOFC/COFC equipment, multi-levels, and other specially equipped cars with tie-down devices for handling vehicles.	X	X	
5	Railroad wheels loaded on wheel car flats, in gondolas with no ends, or loaded with the axles above the top of the cars.	X	X	
6	Any rail cars, transport vehicles, or freight containers with temperature control equipment or internal combustion engine, when running or not.	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 in Group 5.	X	X	

MUST NOT BE NEXT TO

FIGURE 13.
POSITION-IN-TRAIN CHART

GROUP 3	GROUP 4			GROUP 5
Any Car	Loaded Tank Car	Residue Tank Car	Other Loaded Car	Loaded Tank Car
	X			
X	X	X		
	X			X
	X			X
	X			X
	X			
X	X		X	

SECTION 7 — 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 loaded tank cars containing materials that require the phrase “Poison Inhalation Hazard”, “Toxic Inhalation Hazard”, or “Inhalation Hazard” **on the shipping papers**;

or

b. 20 or more loaded hazardous material shipments or intermodal portable tank loads having any combination of hazardous materials;

or

c. one or more loads of Spent Nuclear Fuel (SNF) or High Level Radioactive Waste (HLRW) moving under the following HazMat STCCs or Hazardous Materials Response Codes — 4929142, 4929143, 4929144, 4929147.

EXCEPTION: Do not count box cars, trailers, or containers carrying mixed loads of 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. When a computer-generated train consist/train list is not available, or hazardous material cars are added to a train, the Conductor must review the shipping papers for all hazardous material cars and determine Key Train status.

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

4. INSTRUCTIONS FOR OPERATING KEY TRAINS

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

EXCEPTION: Key Trains carrying 20 or more loaded tank cars of Combustible Liquids or Class 3 Flammable liquids, or a combination thereof, are restricted to 40 MPH within High Threat Urban Areas (HTUA). When applicable, the restriction will be indicated on the Wheel Report as follows: “40 MPH SPEED RESTRICTION THROUGH HTUAs”. Crews picking up Combustible Liquids or Class 3 Flammable Liquids en route should refer to their paper work to determine if these additional cars will require their train to be restricted, or contact OSS for assistance. High Threat Urban Areas are identified by milepost limits in Division Timetables or by Operations Bulletins, and in **Section 9**.

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

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

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

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

e. Unless relieved of the requirement to do so by the operating railroad’s Train Dispatcher, the crew operating a Key Train on a foreign railroad must, at the earliest opportunity, notify the foreign railroad’s Train Dispatcher that the train is a Key Train as defined by the operating railroad.

SECTION 8 — EMERGENCY RESPONSE

1. GENERAL REQUIREMENT

In case of a hazardous materials incident, safety is the first consideration. Your responsibility, when observing an incident, is to determine the status of the incident and to immediately report the incident to the Train Dispatcher or Yardmaster.

NOTE: Do not allow a leaking hazardous material shipment to continue in transportation until the leak is resolved (e.g., repaired, reconditioned, or overpacked).

2. REPORTABLE INCIDENTS

Reportable incidents include:

a. All unintentional or accidental releases (including very minor leaks) of hazardous materials in transportation.

b. All derailments and accidents (including sideswipes) involving rail cars containing either a hazardous material, substance, or waste, including residue shipments, in which the:

(1) packaging is damaged;

or

(2) car is derailed and not upright, regardless of damage, leaks, or releases.

c. All releases of any petroleum product (including oil, diesel fuel, gasoline, etc.) or other materials that can cause environmental damage. For example, spills on shorelines next to water, or spills that cause a sheen on the water.

When in doubt, report all release incidents, regardless of the amount of material involved.

3. WHEN AN EMERGENCY OCCURS

SAFETY IS OF FIRST IMPORTANCE.

Carry out the following actions as closely as possible; however, on-scene judgment based on actual circumstances must be the final guide for protecting people, property, and the environment.

a. Make an emergency call, as radio rules require.

b. Look for a fire or vapor cloud.

c. Rescue the injured if qualified, without endangering yourself or others. Warn and keep everyone at a safe distance until it can be determined what, if any, chemicals are involved.

4. WHEN A FIRE OR VAPOR CLOUD IS VISIBLE

a. Take the shipping papers (including the emergency response information) and the ***Emergency Response Guidebook*** and move yourself and other crew members uphill and upwind the evacuation distances recommended in the ***Emergency Response Guidebook***.

b. Stay out of ditches and low areas.

c. ***Do Not Smoke or use fusees.***

d. Provide the Train Dispatcher or Yardmaster with as much of the following information as possible:

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

(2) type of emergency;

(3) status of crewmembers;

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

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

(6) resources required to handle situation (for example, fire, ambulance, and law enforcement agencies); and

(7) location where a crewmember with shipping papers will meet arriving emergency response personnel.

e. Once you are in a safe location, identify yourself and cooperate with the local emergency response personnel as noted in **Item 6** of this section.

5. WHEN NO FIRE OR VAPOR CLOUD IS VISIBLE

a. Review the shipping papers for hazardous material shipments.

b. Take the shipping papers (including the emergency response information) and 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 materials.

c. If you encounter a hazardous materials release (regardless of car type – tank, hopper, or box), unusual smells, or noises during this inspection:

(1) avoid all contact with the material and its vapor;

(2) do not step in the material (includes both liquids and solids)

(3) move yourself and other crewmembers uphill and upwind the evacuation distance recommended in the ***Emergency Response Guidebook***.

(4) stay out of ditches and low areas.

(5) remove all possible ignition sources. ***Do Not Smoke;*** and

(6) warn all bystanders to stay away;

d. After completing the inspection, notify the Train Dispatcher or Yardmaster with as much of the following information as possible:

(1) status of crewmembers;

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

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

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

(5) location where a crewmember with shipping papers will meet arriving emergency response personnel.

e. Once you are in a safe location, identify yourself and cooperate with the local emergency response personnel as noted in **Item 6** of this section.

6. COOPERATING WITH LOCAL EMERGENCY RESPONDERS

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

(1) Provide an extra copy of the train consist/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 provide a copy of the emergency response information provided with the shipment or copy of DOT Emergency Response Guide.

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

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

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

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

7. 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.

8. EMERGENCY RESPONSE PLANS

In the event of an emergency situation NS has plans to respond and manage incidents, with a primary objective of protecting life and health (employees and the general public), protecting the environment and minimizing property damage, complying with regulatory requirements, and restoring train operations.

a. The Norfolk Southern Corporate Emergency Response Plan (ERP) has been developed to provide guidance and standard operating procedures to employees responding to emergency situations. These situations may include, but not limited to, derailments, releases of hazardous materials and natural disasters such as earthquakes, floods and hurricanes.

All employees should be familiar with the Corporate ERP, which is accessible electronically at several locations including the OWP, ERC, Environmental Protection Website, and Desktop Link.

https://owp.nscorp.com/Pages/ERP.aspx

b. Several NS yards have Yard Evacuation Plans, These are required at all NS hump classification yards, system flat switching yards, and regional flat switching yards. Other yards locations have also been selected based on factors such as yard throughput traffic, facility size, hazmat traffic volumes, and locations where there are 10+ employees working at the same facility.

The Local Safety & Service Planning Committee is responsible for developing and maintaining an Evacuation Plan for each required yard/terminal. All division and terminal supervision **must** be familiar with the Evacuation Plan at their facility and ensure that all employees know how to access it and are familiar with the plan.

Where applicable, Yard Evacuation Plans and maps should be posted at visible locations and accessible to employees for review.

SECTION 9 — RAIL SECURITY SENSITIVE MATERIALS

1. GENERAL REQUIREMENT

Loaded rail cars, trailers, or containers carrying any Rail Security Sensitive Materials (RSSM) must be handled in accordance with the rules in this section.

2. RAIL SECURITY SENSITIVE MATERIAL DEFINITION

A "Rail Security Sensitive Material" or RSSM is described in either a, b, or c below:

a. A rail car, trailer, or container containing more than 5,000 lbs. of a Division 1.1, 1.2, or 1.3 explosive material.

b. A loaded tank car containing a Toxic Inhalation Hazard (TIH). A list of commonly transported TIH materials is included in **Section 1, Table 3**.

c. A rail car containing a highway-route controlled quantity of Class 7 (radioactive) material shipped under any of the following HazMat STCCs or Hazardous Materials Response Codes — 4929142, 4929143, 4929144, 4929147.

3. INSTRUCTIONS FOR RECEIVING RSSM SHIPMENTS FROM A SHIPPER

a. Loaded rail cars, trailers or containers of RSSM shipments may only be picked up from a Rail Secure Area in a customer's facility. A Rail Secure Area is a pre-designated physically secure location identified by a rail hazardous materials shipper or receiver for the purpose of inspecting, preparing, loading, storing, and/or unloading RSSM shipments.

b. When picking up a loaded Rail Security Sensitive Material from a shipper:

(1) A hazardous materials and security inspection must be performed as instructed in **Section 3 — Car Inspection**.

(2) The shipper must have a representative physically present at the car when the railroad pulls the car so that "Positive Control" is maintained at all times.

(3) The shipper representative and the Conductor must both complete a Chain-of-Custody form.

(4) The shipper will be supplied the Chain-of-Custody form by the OSS or may use its own form with the same required information. The Conductor must ensure that any time RSSM is picked up, the crew completes a Chain-of-Custody form, and the Conductor must fax the completed form to OSS at the end of their shift but prior to the Hours of Service limit.

(5) If the industry work order indicates that an RSSM shipment is to be pulled and there is no shipper representative present or a Chain-of-Custody form is not completed, the shipment must not be pulled from the customer's facility.

4. INSTRUCTIONS FOR DELIVERING RSSM TO A CONSIGNEE

When delivering RSSM shipments to NS customers, the Chain-of-Custody documentation and "Positive Control" requirements for RSSM shipments is only required for customers located in a High Threat Urban Area or HTUA. HTUA locations have been designated by the U.S. Department of Homeland Security based on the threat, vulnerability, and consequences calculated for various metropolitan areas.

The following HTUA locations are located on the Norfolk Southern system:

- Atlanta, GA
- Baltimore, MD
- Buffalo, NY
- Charlotte, NC
- Chicago, IL
- Cincinnati, OH
- Cleveland, OH
- Columbus, OH
- Detroit, MI
- Jacksonville, FL
- Jersey City/Newark, NJ
- Kansas City, MO
- Louisville, KY
- Memphis, TN
- New Orleans, LA
- Philadelphia, PA
- Pittsburgh, PA
- St. Louis, MO
- Toledo, OH
- Washington, DC

a. Loaded rail cars, trailers or containers of RSSM shipments may only be placed in the consignee's pre-designated Rail Secure Area in the customer's facility.

b. When delivering a loaded Rail Security Sensitive Material to a consignee in a HTUA:

(1) The consignee must have a representative physically present at the car when the railroad delivers the car so that "Positive Control" is maintained at all times.

(2) The consignee representative and the Conductor must both complete a Chain-of-Custody form.

(3) Receivers of RSSM shipments will be noted on industry work orders. The Conductor must ensure that any time RSSM is delivered, the crew completes a Chain-of-Custody form, and the Conductor must fax the completed form to OSS at the end of their shift but prior to the Hours of Service limit.

(4) If the industry work order indicates that an RSSM shipment is to be delivered and there is no consignee representative present or a Chain-of-Custody form is not completed, **the shipment must not be placed at the customer's facility.**

5. INSTRUCTIONS FOR INTERCHANGING RSSM SHIPMENTS

a. The instructions for interchanging RSSM shipments do not apply at the following interchange locations:

Connecting Carrier	Location
AGR	Kimbrough, AL
AGR	McIntosh, AL
BNSF	Birmingham, AL
CERA	Marion, IN
CGR	Mobile, AL
CHR	Palmerton, PA
CSXT	Brunswick, GA
CSXT	Evansville, IN
CSXT	Hopewell, VA
CSXT	Valdosta, GA
FGLK	Geneva, NY
GFRR	Adel, GA
GFRR	Albany, GA
GITM	Anguilla Jct., GA
HPTD	High Point, NC
ICRK	Anderson, IN
IN	Montpelier, OH

Connecting Carrier	Location
KCS	Hattiesburg, MS
LRWY	Sayre, PA
LVRR	Northumberland, PA
MDDE	Townsend, DE
MIDH	Middletown, PA
MNJ	Campbell Hall, NY
NBER	Tyrone, PA
OHIC	Bayard, OH
RBMN	Reading, PA
RJCL	Massillon, OH
RSR	Silver Springs, NY
SAPT	Savannah, GA
TPW	Logansport, IN
TYBR	Fairless, PA
TZPR	East Peoria, IL
VR	Valdosta, GA

The requirements for interchange of RSSM shipments do not apply if the interchange occurs between Conrail and NS, and the interchange takes place within the following monitored and staffed rail yards:

(1) Harrisburg Division: North Jersey — Oak Island and Croxton

(2) Harrisburg Division: South Jersey — Pavonia and Stoney Creek

(3) Dearborn Division: Detroit — Livernois, North Yard and River Rouge

b. Loaded rail cars, trailers or containers of RSSM shipments may only be interchanged at an attended location, which is defined as:

(1) a location where a railroad employee or authorized representative is physically located in reasonable proximity to the RSSM rail car;

(2) can reasonably detect unauthorized access or unlawful activity near the rail car; and

(3) the person in attendance can promptly respond to unauthorized access or activity near the rail car. For example, someone capable of immediately contacting law enforcement or other authorities to investigate.

c. When delivering or receiving RSSM shipment in interchange:

(1) Both of the interchanging rail carriers are required to complete a Chain-of-Custody form. These Chain-of-Custody forms will be included in the crew's paperwork when an RSSM car is present in the train.

(2) Both interchanging carriers must have a representative physically present at the car at the time of pickup or delivery.

(a) When a foreign line carrier brings an interchange cut or train to an NS yard, the NS Yardmaster will be the chain-of-custody contact (either directly or by voice communication) in attended yards. The NS Yardmaster should complete the Chain-of-Custody form.

(b) When interchange cuts or trains are delivered by NS crews to a foreign line carrier yard, the crew should contact OSS or the NS Yardmaster and request a Wheel Report for the interchange cut, prior to departure. The Wheel Report will include the Chain-of-Custody forms. The Conductor must ensure that the Chain-of-Custody form is completed.

(3) The NS Yardmaster or Conductor completing the Chain-of-Custody form when cars are handled in interchange must **fax** the completed form to OSS during or at the end of their shift. Chain-of-Custody information must be provided to OSS prior to the crew's Hours of Service limit.

(4) When <u>delivering</u> RSSM shipments in interchange, if the foreign line does not have a representative present to document the Chain-of-Custody, the shipment must not be interchanged.

(5) When <u>picking up</u> RSSM shipments at interchange from a foreign line carrier who has left the cars unattended, the NS crew may pickup the RSSM cars provided:

(a) Yardmaster, control station, or supervisor, is made aware of the unattended status and has authorized the pickup (after attempting to reach the delivering carrier).

(b) A hazardous materials and security inspection is performed as instructed in **Section 3 — Car Inspection**.

(c) A Chain-of-Custody form is completed and the notation "Unattended" is entered in the blank space provided for the foreign carrier employee first and last name.

6. CHAIN-OF-CUSTODY FORM

a. An example of the Chain-of-Custody form is shown in **Figure 14**.

b. The following information must be completed on the Chain-of-Custody form:

(1) the date and time;

(2) the location of the industry or interchange;

(3) the shipper, consignee, or rail carrier name when picking up or delivering RSSM shipments;

(4) the first and last names of the representatives participating in the transfer (NS employees, foreign rail carrier, shipper, or consignee as applicable); and

(5) the car initials and number for all RSSM shipments.

c. Chain-of-Custody information must be provided to OSS prior to the crew's Hours of Service limit. If a crew determines they will not be able to fax the Chain-of-Custody form to OSS prior to expiration of their Hours of Service limit, information from the form must be provided to OSS using an alternate means; including use of a radio. A phone may be used but only if all FRA and Norfolk Southern requirements governing the on-duty use of electronic devices have been met. The Chain-of-Custody paperwork must then be faxed to OSS at the start of the crew's next tour of duty.

FIGURE 14. CHAIN-OF-CUSTODY FORM FOR RSSM SHIPMENTS

NOTE: Print legibly

The listed or attached Rail Security Sensitive Materials (RSSM) have changed custody between the parties listed:

Date: _____ /_____ /_____ Time: _____ : _____ AM PM *(Circle One)*
(DD/MM/YYYY)

Place / Pull / Interchange Location: _____
(Circle One) *(Location Name)*

Interchange Location: _____
(Please enter Milepost Number, Name of Rail Yard, or Designated Siding Name)

Shipper / Consignee: _____
(Circle One) *(Company Name)*

Shipper / Consignee: _____
(Circle One) *(Employee First and Last Name)*

Foreign Carrier: _____ _____
(Road Initial) *(Employee First and Last Name)*

Norfolk Southern: _____ _____
(Employee First and Last Name) *(NS ID #)*

Initial	Number	Initial	Number
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____

Completed copy should be faxed to OSS @ 1-800-476-0180 prior to end of shift.

SECTION 10 — LOADING/UNLOADING TANK CARS

1. GENERAL REQUIREMENTS

All hazardous material tank car loading and unloading activities need to be coordinated through the NS Hazardous Materials Group other than routine non-emergency scheduled loading and unloading of approved commodities at NS TBT facilities and yard deliveries and/or pickups of diesel, lube oil, used oil and heating oil.

All NS personnel involved in the loading/unloading of tank cars MUST have appropriate function specific training to perform this task. This Section is intended to assist loaders/unloaders of hazardous materials to ensure cars are loaded in accordance with the regulations.

According to DOT regulations, if a tank car leaks in transit during normal rail operations it is assumed the car was not properly prepared and inspected prior to being released for transportation. The shipper and/or loader may be liable for all costs associated with the response and clean-up, and can be subject to penalties for failure to comply with the requirements.

This Section is divided into two sections. The first will cover requirements that are applicable to all types of tank cars. The second section will review the proper securement practices for general service tank cars.

For further information please refer to the U.S. Department of Transportation requirements found in 49 CFR Sections 173.31 and 174.67 of the Hazardous Material Regulations. In Canada, these requirements are found in Canadian General Standards Board 43.147, Part IV, Sections 30.14 through 30.17, as referenced in the Canadian Transport Dangerous Goods Regulations.

2. REQUIREMENTS FOR ALL TANK CARS

a. To ensure safe operations prior to loading or unloading:

(1) Put a caution sign, commonly known as a blue flag, into place, at both ends of the car if it can be approached from either direction.

(2) Check the hand brakes to make certain they have been applied.

(3) Chock wheels in each direction.

(4) Prevent entry into the track by locking the switch and/or locking a derail.

(5) If there is a string of tank cars coupled together, a minimum of one must have its wheels chocked, and adequate hand brakes set to prevent movement of the cars.

b. No person may offer for transportation a tank car containing a hazardous material, including a residue, unless it is determined that the tank car is in proper condition for safe transportation.

Prior to loading or unloading, inspect the following parts of the car:

(1) Examine the safety appliances including steps, grab-irons, ladders, and platforms, to ensure that none are broken, loose, or missing.

(2) Look under the car to make sure that brake rigging is not broken or dragging.

(3) Cars must be equipped with roller bearings. Look at the end cap and be certain all three bolts are in place.

(4) Tank cars must be equipped with double shelf couplers.

(5) Inspect the trucks and couplers to make certain there are no visible defects.

(6) Examine the tank shell and heads for defects such as dents, cracks, and evidence of leaks. The jacket on a tank car should not be torn or have significant damage.

(7) Check all piping, valves, fittings & gaskets, including those not used, for evidence of leaks or corrosion.

(8) Look for missing or loose bolts.

(9) Examine pressure relief device (PRD), including any frangible disc, to ensure it is present and there is no sign of leakage. Tank cars with a frangible disc will be stenciled with the burst pressure of the frangible disc and may be stenciled: “Not for Flammable Liquids” or “Not for Flammable or Poisonous Liquids”.

(10) Verify that the tank car is a Specification Tank (CTC, AAR, DOT, or TC) and is compatible with the product, and that Test Dates are current.

(11) Check tank car linings, coating, or material, to confirm they are compatible with the commodity being transported. For example, some Class 8 corrosive materials, such as acids, must be shipped in tank cars that have a certain lining or coating.

(12) Make sure any special protective features that may be required, such as head shields or thermal barriers, are present.

(13) Make sure all required markings and stenciling are legible. The Proper Shipping Name must be marked, on two sides, in lettering that is at least 3.9" high for all commodities listed in the Appendix. This includes all flammable gases, poison gases, and certain other high hazard materials (refer to **Section 4, Item 4f**).

(14) Make sure the tank car qualification dates are current. If any of the due dates have been exceeded, do **NOT** load car (refer to **Section 4, Item 4g**).

(15) Make sure the identification number is displayed on the placard, orange panel, or white “square-on-point” marker. Most commonly, the identification number will be displayed on a placard with the identification number 3.5" high in the center. For example, a flammable gas placard with identification number 1075 marked in the center (refer to **Section 4, Item 4a**).

(16) Make sure placards are readily visible from the direction they face and are displayed on both sides and both ends of the rail car. Placards must:

(a) match the hazard class and 4-digit identification number on the paperwork;

(b) be securely attached or placed in a holder;

(c) be displayed so that the words, or identification number, read horizontally from left to right;

(d) be located clear of appurtenances such as ladders as much as possible;

(e) be located so that dirt and water will not be thrown upon them; and

(f) be maintained so that color, format, legibility and visibility are not substantially reduced.

c. When loading a tank car, be certain to:

(1) Know how much outage is required for the material and the tank car, and at a minimum leave this amount of outage when loading. Outage is defined as the amount by which the car falls short of being liquid full (usually expressed as a percent or volume).

(2) Do not overload by weight or volume.

(3) Monitor the car to make certain nothing is leaking.

d. Prior to releasing a car, either loaded or residue:

(1) Check that car is not overloaded.

(2) Ensure all fittings, **including those not used**, are properly closed. All caps and/or plugs must be in place, properly tightened by the use of the proper tool, and attached by a cable or chain to prevent misplacement.

(3) Verify that protective covers are closed and secure.

(4) Check to ensure caps for interior heater coil inlet/outlet pipes are on the pipes.

Always use a check list when examining tank cars. Remember that any defects must be corrected prior to the shipment of the tank car.

3. SUPPLEMENTAL REQUIREMENTS FOR GENERAL SERVICE TANK CARS

a. General service tank cars (generally designated by the DOT 111 tank car specification), are used to transport liquids or “flow-able” solids. Most general service tank cars have valves and fittings which are visible on the top of the tank car, which may include:

(1) Top-operated bottom outlets;

(2) Top valves & fittings (liquid valves, vapor valves, and vacuum relief valves);

(3) Manway;

(4) Interior or exterior heater coil systems; and

(5) Pressure relief devices including safety valves and safety vents.

b. Bottom outlets can be operated either from the bottom of the tank car or from the top of the car. Both types of bottom outlets must be checked to make certain they operate properly and are not leaking prior to loading.

(1) A recommended practice is to remove the bottom outlet cap or plug during loading. Make certain the outlet valve is closed and any auxiliary valves are open while loading and check that there is no leakage through the valve.

NOTE: Place a container under bottom valve to catch any possible leakage.

(2) Check that the bottom outlet cap and/or plug are attached to the car by a chain or cable to prevent misplacement of the cap or plug.

(3) Examine the condition of the gasket in the outlet cap and the threads on the outlet cap and plug.

(4) When a car is equipped with a top-operated bottom outlet valve, be certain to secure the packing nut to prevent leakage. The operating handle must be attached by a chain or cable to prevent misplacement.

(5) Make certain there are no leaks when finished loading or unloading, and then secure the operating handle in the closed position.

c. If a tank car is equipped with interior heater coils, they must be checked for leakage.

(1) During loading, leave the outlet caps off the heater pipes and watch for leakage through the pipes.

(2) After the car is loaded, secure the heater coil caps on the pipes to prevent a leak in case a heater coil fails in transit.

d. Check all top valves for operation (including liquid valve and vapors valve).

(1) Examine valves for evidence of leaking through the plug, where the valve attaches to the car, and/or through the valve stem.

(2) All valves must be closed when the car is shipped and the closures tight, even fittings not used at your location. Listen to vacuum relief valves for evidence they are not closing properly and allowing vapors to escape.

(3) When the top valves are not under a protective cover, handles for the valves must be removed.

(4) All protective covers must be pinned in the closed position during transportation.

e. Manway bolts and gaskets must be inspected.

(1) Manway gaskets must be checked for condition, positioning, and compatibility with the material in the tank car.

(2) Manway gaskets should stay in place when the manway is opened. If it does not then it could be the wrong size and may slip out of position when the manway is closed. **NOTE:** Failure of manway gaskets is a significant source of leaks in transportation.

(3) Manway bolts must be tightened in a “Star” pattern to ensure that the manway is evenly tightened and there is a good seal on the gasket.

f. When a tank car is equipped with a safety vent, both sides of the rupture disc must be checked for damage. When the rupture disc is examined, make certain it is marked with a burst pressure rating that matches the safety vent burst pressure stencil on the tank car.

g. Prior to shipment of the tank car, verify that closures are secure and not leaking by either doing a pressure test or by holding the car for 24-hours and then re-inspecting the car.

GLOSSARY

Buffer Car — (1) a non-placarded rail car, (2) a rail car with a placard or marking shown in Group 5 on the Position-in-Train Chart, (3) a residue/empty tank with no other restrictions, or a placarded rail car with no other restrictions, or (4) a placarded rail car other than a tank car. For a loaded bulk commodity train containing hazardous materials (ethanol, crude oil, etc.), a buffer car must weigh a minimum of 45 tons and be at least 41 feet long and not exceeding 70 feet in length.

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

Container — Any freight container, intermodal (IM) portable tanks, portable tank, or portable bin.

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

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

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

Hazardous Material — A substance or material which the Secretary of Transportation has determined to be capable of posing an unreasonable risk to health, safety, and property when transported in commerce. The term "hazardous material" includes hazardous substances, hazardous wastes, elevated temperature materials (HOT or MOLTEN), and marine pollutants.

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

Hazardous Waste Manifest — A document specifically for tracking hazardous wastes in transportation. It contains the shipping description and identifies the waste generator, each transporter, and the disposal facility.

Hazard Zone — One of four levels of inhalation hazard (Hazard Zones A through D) assigned to gases, and one of two levels of hazard (Hazard Zones A and B) assigned to liquids that are poisonous/toxic by inhalation. For example, when the hazard zone is "A," it is shown on the shipping paper as "Zone A." Zone A is the most hazardous, and Zone D is the least hazardous.

Improvised Explosive Device (IED) — 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.

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

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

Marking — A descriptive commodity name, identification number, caution (such as INHALATION HAZARD, HOT, MOLTEN, or MARINE POLLUTANT), or tank car specification and qualification date displayed on hazardous material shipments. (See **Section 4** for marking requirements.)

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 papers, which mean "Not Otherwise Specified."

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

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

Packing Group — A grouping of hazardous materials according to the degree of danger:

- Packing Group I (shown as "PGI" or "I" on the shipping papers) indicates great danger.
- Packing Group II (shown as "PGII" or "II" on the shipping papers) indicates medium danger.
- Packing Group III (shown as "PGIII" or "III" on the shipping papers) indicates minor danger.

Placard — A sign measuring 10¾ by 10¾ inches square-on-point, communicating a hazard by symbol, color, and words or numbers. Some placards must be displayed on a square background which is white with a black border (see **Figure 4, pages 20–21** for examples of placards).

Placarded Car — A rail car displaying placards in accordance with DOT regulations.

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

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

Radio Waybill — A form used to record shipping description entries provided orally.

Rail Car — Equipment used in rail transportation. For example, box car, flat car, gondola car, hopper car, tank car, or caboose, but not a locomotive.

Residue — The hazardous material remaining in a packaging, including a tank car, after its contents have been unloaded to the maximum extent possible. It is indicated on the shipping papers by the phrase "RESIDUE: LAST CONTAINED" in association with the basic description.

Special Permit — A document issued by the Associate Administrator under the authority of 49 U.S.C. 5117 permitting a person to perform a function that is not otherwise permitted under subchapter A or C of this chapter, or other regulations issued under 49 U.S.C. 5101 et seq. (e.g., Federal Motor Carrier Safety routing requirements). The terms "special permit" and "exemption" have the same meaning for purposes of subchapter A or C of this chapter or other regulations issued under 49 U.S.C. 5101 through 5127.

Shipper's Certification — A signed (or electronically printed) declaration on the shipping paper provided by the shipper to the first transporter for a loaded hazardous material shipment. It indicates compliance with the DOT regulations. The certification must be signed by hand or mechanically. It may read either:

> "This is to certify that the above-named materials are properly classified, described, packaged, marked, and labeled and are in proper condition for transportation according to the applicable regulations of the Department of Transportation."
>
> **or**
>
> "I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name, and are classified, packaged, marked, and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations."
>
> **NOTE:** A shipper's certification is required on any shipping paper that the customer provides to the crew for loaded hazardous material cars.

Shipping Paper — Any document providing the appropriate entries for a hazardous material shipment. (See **Section 2** for shipping paper requirements.)

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

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

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

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

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

APPENDIX

A tank car containing any of the following materials must be marked on each side with the key words of the proper shipping name specified for the material or with a common name authorized for the material, such as Liquefied Petroleum Gas:

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

(2) The parts of the names above that appear in italics are not required to be stenciled.

This list includes all TIH materials found in Appendix A of AAR Circular OT-55-Q “Recommended Railroad Operating Practices for Transportation of Hazardous Materials”. With very few exceptions, the TIH commodities handled on NS are listed inTable 3 of the HM-1.

Appendix A:
List of Poison Inhalation Hazard (PIH) or Toxic Inhalation Hazard Chemicals (TIH)
(Hazard Zone A, B, C, or D)
Sorted by Hazard Class and Proper Shipping Name
January 19, 2016

HMRC	Proper Shipping Name	UN/NA#	Packing Group	Hazard Zone	Hazard Class	Canada Only
NON-FLAMMABLE GASES, HAZARD CLASS 2.2						
4904211	AMMONIA SOLUTION	UN3318			2.2	
4904210	AMMONIA, ANHYDROUS	UN1005			2.2	
4904879	AMMONIA, ANHYDROUS	UN1005			2.2	
POISON GASES, HAZARD CLASS 2.3						
4920190	ADSORBED GAS, TOXIC, CORROSIVE, N.O.S.	UN3516		A	2.3	
4920551	ADSORBED GAS, TOXIC, CORROSIVE, N.O.S.	UN3516		B	2.3	
4920552	ADSORBED GAS, TOXIC, CORROSIVE, N.O.S.	UN3516		C	2.3	
4920553	ADSORBED GAS, TOXIC, CORROSIVE, N.O.S.	UN3516		D	2.3	
4920191	ADSORBED GAS, TOXIC, FLAMMABLE, CORROSIVE, N.O.S.	UN3517		A	2.3	
4920554	ADSORBED GAS, TOXIC, FLAMMABLE, CORROSIVE, N.O.S.	UN3517		B	2.3	
4920555	ADSORBED GAS, TOXIC, FLAMMABLE, CORROSIVE, N.O.S.	UN3517		C	2.3	
4920557	ADSORBED GAS, TOXIC, FLAMMABLE, CORROSIVE, N.O.S.	UN3517		D	2.3	
4920192	ADSORBED GAS, TOXIC, FLAMMABLE, N.O.S.	UN3514		A	2.3	
4920558	ADSORBED GAS, TOXIC, FLAMMABLE, N.O.S.	UN3514		B	2.3	
4920560	ADSORBED GAS, TOXIC, FLAMMABLE, N.O.S.	UN3514		C	2.3	
4920561	ADSORBED GAS, TOXIC, FLAMMABLE, N.O.S.	UN3514		D	2.3	
4920193	ADSORBED GAS, TOXIC, N.O.S.	UN3512		A	2.3	
4920562	ADSORBED GAS, TOXIC, N.O.S.	UN3512		B	2.3	
4920563	ADSORBED GAS, TOXIC, N.O.S.	UN3512		C	2.3	
4920564	ADSORBED GAS, TOXIC, N.O.S.	UN3512		D	2.3	
4920194	ADSORBED GAS, TOXIC, OXIDIZING, CORROSIVE, N.O.S.	UN3518		A	2.3	
4920565	ADSORBED GAS, TOXIC, OXIDIZING, CORROSIVE, N.O.S.	UN3518		B	2.3	
4920566	ADSORBED GAS, TOXIC, OXIDIZING, CORROSIVE, N.O.S.	UN3518		C	2.3	
4920567	ADSORBED GAS, TOXIC, OXIDIZING, CORROSIVE, N.O.S.	UN3518		D	2.3	
4920198	ADSORBED GAS, TOXIC, OXIDIZING, N.O.S.	UN3515		A	2.3	
4920568	ADSORBED GAS, TOXIC, OXIDIZING, N.O.S.	UN3515		B	2.3	
4920569	ADSORBED GAS, TOXIC, OXIDIZING, N.O.S.	UN3515		C	2.3	
4920572	ADSORBED GAS, TOXIC, OXIDIZING, N.O.S.	UN3515		D	2.3	
4920360	AMMONIA SOLUTIONS	UN3318		D	2.3	
4920359	AMMONIA, ANHYDROUS	UN1005		D	2.3	

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HMRC	Proper Shipping Name	UN/NA#	Packing Group	Hazard Zone	Hazard Class	Canada Only
4920135	ARSINE	UN2188		A	2.3	
4920176	ARSINE, ADSORBED	UN3522		A	2.3	
4920349	BORON TRICHLORIDE	UN1741		C	2.3	
4920522	BORON TRIFLUORIDE	UN1008		B	2.3	
4920573	BORON TRIFLUORIDE, ADSORBED	UN3519		B	2.3	
4920715	BROMINE CHLORIDE	UN2901		B	2.3	
4920399	CARBON MONOXIDE, COMPRESSED	UN1016		D	2.3	
4920511	CARBON MONOXIDE, REFRIGERATED LIQUID	NA9202		D	2.3	
4920559	CARBONYL FLUORIDE	UN2417		B	2.3	
4920351	CARBONYL SULFIDE	UN2204		C	2.3	
4920523	CHLORINE	UN1017		B	2.3	
4920189	CHLORINE PENTAFLUORIDE	UN2548		A	2.3	
4920352	CHLORINE TRIFLUORIDE	UN1749		B	2.3	
4920574	CHLORINE, ADSORBED	UN3520		B	2.3	
4920516	CHLOROPICRIN AND METHYL BROMIDE MIXTURES	UN1581		B	2.3	
4920547	CHLOROPICRIN AND METHYL BROMIDE MIXTURES	UN1581		B	2.3	
4920392	CHLOROPICRIN AND METHYL CHLORIDE MIXTURES	UN1582		B	2.3	
4920527	COAL GAS, COMPRESSED	UN1023		C	2.3	
4920102	COMMPRESSED GAS, TOXIC, FLAMMABLE, CORROSIVE, N.O.S.	UN3305		A	2.3	
4920303	COMMPRESSED GAS, TOXIC, FLAMMABLE, CORROSIVE, N.O.S.	UN3305		B	2.3	
4920304	COMMPRESSED GAS, TOXIC, FLAMMABLE, CORROSIVE, N.O.S.	UN3305		C	2.3	
4920305	COMMPRESSED GAS, TOXIC, FLAMMABLE, CORROSIVE, N.O.S.	UN3305		D	2.3	
4920301	COMPRESSED GAS, TOXIC CORROSIVE, N.O.S.	UN3304		D	2.3	
4920324	COMPRESSED GAS, TOXIC CORROSIVE, N.O.S.	UN3304		B	2.3	
4920379	COMPRESSED GAS, TOXIC FLAMMABLE, N.O.S.	UN1953		D	2.3	
4920103	COMPRESSED GAS, TOXIC OXIDIZING, CORROSIVE, N.O.S.	UN3306		A	2.3	
4920101	COMPRESSED GAS, TOXIC, CORROSIVE, N.O.S.	UN3304		A	2.3	
4920331	COMPRESSED GAS, TOXIC, CORROSIVE, N.O.S.	UN3304		C	2.3	
4920165	COMPRESSED GAS, TOXIC, FLAMMABLE, N.O.S.	UN1953		A	2.3	
4920378	COMPRESSED GAS, TOXIC, FLAMMABLE, N.O.S.	UN1953		C	2.3	
4920396	COMPRESSED GAS, TOXIC, FLAMMABLE, N.O.S.	UN1953		B	2.3	
4920181	COMPRESSED GAS, TOXIC, N.O.S.	UN1955		A	2.3	
4920373	COMPRESSED GAS, TOXIC, N.O.S.	UN1955		D	2.3	
4920375	COMPRESSED GAS, TOXIC, N.O.S.	UN1955		C	2.3	
4920570	COMPRESSED GAS, TOXIC, N.O.S.	UN1955		B	2.3	
4920307	COMPRESSED GAS, TOXIC, OXIDIZING, CORROSIVE, N.O.S.	UN3306		C	2.3	

HMRC	Proper Shipping Name	UN/NA#	Packing Group	Hazard Zone	Hazard Class	Canada Only
4920308	COMPRESSED GAS, TOXIC, OXIDIZING, CORROSIVE, N.O.S.	UN3306		D	2.3	
4920104	COMPRESSED GAS, TOXIC, OXIDIZING, N.O.S.	UN3303		A	2.3	
4920309	COMPRESSED GAS, TOXIC, OXIDIZING, N.O.S.	UN3303		C	2.3	
4920310	COMPRESSED GAS, TOXIC, OXIDIZING, N.O.S.	UN3303		D	2.3	
4920337	COMPRESSED GAS, TOXIC, OXIDIZING, N.O.S.	UN3303		B	2.3	
4920395	CYANOGEN	UN1026		B	2.3	
4920178	CYANOGEN CHLORIDE, STABILIZED	UN1589		A	2.3	
4920107	DIBORANE	UN1911		A	2.3	
4920398	DICHLOROSILANE	UN2189		B	2.3	
4920174	DINITROGEN TETROXIDE	UN1067		A	2.3	
4920353	ETHYLENE OXIDE	UN1040		D	2.3	
4920342	ETHYLENE OXIDE AND CARBON DIOXIDE MIXTURE	UN3300		D	2.3	
4920180	FLUORINE, COMPRESSED	UN1045		A	2.3	
4920510	GAS IDENTIFICATION SET	NA9035			2.3	
4920534	GAS SAMPLE, NON-PRESSURIZED, TOXIC, FLAMMABLE, N.O.S.	UN3168			2.3	
4920536	GAS SAMPLE, NON-PRESSURIZED, TOXIC, N.O.S.	UN3169			2.3	
4920354	GERMANE	UN2192		B	2.3	
4920575	GERMANE, ADSORBED	UN3523		B	2.3	
4920515	HEXAETHYL TETRAPHOSPHATE AND COMPRESSED GAS MIXTURES	UN1612		C	2.3	
4920528	HEXAFLUOROACETONE	UN2420		B	2.3	
4920502	HYDROGEN BROMIDE, ANHYDROUS	UN1048		C	2.3	
4920503	HYDROGEN CHLORIDE, ANHYDROUS	UN1050		C	2.3	
4920504	HYDROGEN CHLORIDE, REFRIGERATED LIQUID	UN2186		C	2.3	
4920348	HYDROGEN IODIDE, ANHYDROUS	UN2197		C	2.3	
4920122	HYDROGEN SELENIDE ANHYDROUS	UN2202		A	2.3	
4920172	HYDROGEN SELENIDE, ADSORBED	UN3526		A	2.3	
4920513	HYDROGEN SULFIDE	UN1053		B	2.3	
4920115	INSECTICIDE GASES, TOXIC FLAMMABLE, N.O.S.	UN3355		A	2.3	
4920550	INSECTICIDE GASES, TOXIC, N.O.S.	UN1967		C	2.3	
4920381	LIQUEFIED GAS, TOXIC FLAMMABLE, N.O.S.	UN3160		D	2.3	
4920105	LIQUEFIED GAS, TOXIC, CORROSIVE, N.O.S.	UN3308		A	2.3	
4920311	LIQUEFIED GAS, TOXIC, CORROSIVE, N.O.S.	UN3308		B	2.3	
4920313	LIQUEFIED GAS, TOXIC, CORROSIVE, N.O.S.	UN3308		C	2.3	
4920315	LIQUEFIED GAS, TOXIC, CORROSIVE, N.O.S.	UN3308		D	2.3	
4920108	LIQUEFIED GAS, TOXIC, FLAMMABLE, CORROSIVE, N.O.S.	UN3309		A	2.3	
4920314	LIQUEFIED GAS, TOXIC, FLAMMABLE, CORROSIVE, N.O.S.	UN3309		B	2.3	
4920316	LIQUEFIED GAS, TOXIC, FLAMMABLE, CORROSIVE, N.O.S.	UN3309		C	2.3	

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4920318	LIQUEFIED GAS, TOXIC, FLAMMABLE, CORROSIVE, N.O.S.	UN3309		D	2.3	
4920164	LIQUEFIED GAS, TOXIC, FLAMMABLE, N.O.S.	UN3160		A	2.3	
4920380	LIQUEFIED GAS, TOXIC, FLAMMABLE, N.O.S.	UN3160		C	2.3	
4920382	LIQUEFIED GAS, TOXIC, FLAMMABLE, N.O.S.	UN3160		B	2.3	
4920195	LIQUEFIED GAS, TOXIC, N.O.S.	UN3162		A	2.3	
4920368	LIQUEFIED GAS, TOXIC, N.O.S.	UN3162		C	2.3	
4920369	LIQUEFIED GAS, TOXIC, N.O.S.	UN3162		D	2.3	
4920571	LIQUEFIED GAS, TOXIC, N.O.S.	UN3162		B	2.3	
4920110	LIQUEFIED GAS, TOXIC, OXIDIZING, CORROSIVE, N.O.S.	UN3310		A	2.3	
4920312	LIQUEFIED GAS, TOXIC, OXIDIZING, CORROSIVE, N.O.S.	UN3310		B	2.3	
4920320	LIQUEFIED GAS, TOXIC, OXIDIZING, CORROSIVE, N.O.S.	UN3310		C	2.3	
4920325	LIQUEFIED GAS, TOXIC, OXIDIZING, CORROSIVE, N.O.S.	UN3310		D	2.3	
4920111	LIQUEFIED GAS, TOXIC, OXIDIZING, N.O.S.	UN3307		A	2.3	
4920317	LIQUEFIED GAS, TOXIC, OXIDIZING, N.O.S.	UN3307		B	2.3	
4920319	LIQUEFIED GAS, TOXIC, OXIDIZING, N.O.S.	UN3307		C	2.3	
4920321	LIQUEFIED GAS, TOXIC, OXIDIZING, N.O.S.	UN3307		D	2.3	
4920518	METHYL BROMIDE	UN1062		C	2.3	
4920355	METHYL MERCAPTAN	UN1064		C	2.3	
4920394	METHYLCHLOROSILANE	UN2534		B	2.3	
4920113	NITRIC OXIDE AND DINITROGEN TETROXIDE MIXTURES	UN1975		A	2.3	
4920112	NITRIC OXIDE, COMPRESSED	UN1660		A	2.3	
4920175	NITROGEN TRIOXIDE	UN2421		A	2.3	
4920509	NITROSYL CHLORIDE	UN1069		C	2.3	
4920344	OIL GAS, COMPRESSED	UN1071			2.3	
4920530	ORGANIC PHOSPHATE, MIXED WITH COMPRESSED GAS	NA1955		C	2.3	
4920173	OXYGEN DIFLUORIDE, COMPRESSED	UN2190		A	2.3	
4920535	PARATHION AND COMPRESSED GAS MIXTURE	NA1967		C	2.3	
4920356	PERCHLORYL FLUORIDE	UN3083		B	2.3	
4920184	PHOSGENE	UN1076		A	2.3	
4920160	PHOSPHINE	UN2199		A	2.3	
4920171	PHOSPHINE, ADSORBED	UN3525		A	2.3	
4920326	PHOSPHORUS PENTAFLUORIDE	UN2198		B	2.3	
4920576	PHOSPHORUS PENTAFLUORIDE, ADSORBED	UN3524		B	2.3	
4920106	SELENIUM HEXAFLUORIDE	UN2194		A	2.3	
4920357	SILICON TETRAFLUORIDE	UN1859		B	2.3	
4920577	SILICON TETRAFLUORIDE, ADSORBED	UN3521		B	2.3	
4920167	STIBINE	UN2676		A	2.3	

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4920508	SULFUR DIOXIDE	UN1079		C	2.3	
4920187	SULFUR TETRAFLUORIDE	UN2418		A	2.3	
4920526	SULFURYL FLUORIDE	UN2191		D	2.3	
4920188	TELLURIUM HEXAFLUORIDE	UN2195		A	2.3	
4920347	TRIFLUOROACETYL CHLORIDE	UN3057		B	2.3	
4920346	TRIFLUOROCHLOROETHYLENE, STABILIZED	UN1082		C	2.3	
4920371	TUNGSTEN HEXAFLUORIDE	UN2196		B	2.3	
FLAMMABLE LIQUIDS, HAZARD CLASS 3						
4909276	ETHYLENE OXIDE AND PROPYLENE OXIDE MIXTURES	UN2983	1		3	T
4907423	ISOCYANATES, FLAMMABLE, TOXIC, N.O.S.	UN2478	C		3	T
SPONTANEOUSLY COMBUSTIBLE, HAZARD CLASS 4.2						
4916138	PENTABORANE	UN1380	1	A	4.2	
OXIDIZERS, HAZARD CLASS 5.1						
4918505	BROMINE PENTAFLUORIDE	UN1745	1	A	5.1	
4918507	BROMINE TRIFLUORIDE	UN1746	1	B	5.1	
POISONS, HAZARD CLASS 6.1						
4921402	2-CHLOROETHANAL	UN2232	1	B	6.1	
4921495	2-METHYL-2-HEPTANETHIOL	UN3023	1	B	6.1	
4921741	3,5-DICHLORO-2,4,6- TRIFLUOROPYRIDINE	NA9264	1	B	6.1	
4921401	ACETONE CYANOHYDRIN, STABILIZED	UN1541	1	B	6.1	
4927007	ACROLEIN, STABILIZED	UN1092	1	A	6.1	
4921019	ALLYL ALCOHOL	UN1098	1	B	6.1	
4923113	ALLYL CHLOROFORMATE	UN1722	1	B	6.1	
4921004	ALLYLAMINE	UN2334	1	B	6.1	
4923209	ARSENIC TRICHLORIDE	UN1560	1	B	6.1	
4921727	BROMOACETONE	UN1569	2	B	6.1	
4921558	CHLOROACETONE, STABILIZED	UN1695	1	B	6.1	
4921439	CHLOROACETONITRILE	UN2668	1	B	6.1	
4923117	CHLOROACETYL CHLORIDE	UN1752	1	B	6.1	
4921204	CHLOROFORMATES, TOXIC, CORROSIVE, FLAMMABLE, N.O.S.	UN2742	2		6.1	T
4921414	CHLOROPICRIN	UN1580	1	B	6.1	
4921791	CHLOROPICRIN MIXTURES, N.O.S.	UN1583	1		6.1	T
4921746	CHLOROPIVALOYL CHLORIDE	NA9263	1	B	6.1	
4921248	CROTONALDEHYDE	UN1143	1	B	6.1	
4921010	CYCLOHEXYL ISOCYANATE	UN2488	1	B	6.1	
4921254	DIKETENE, STABILIZED	UN2521	1	B	6.1	
4921405	DIMETHYL SULFATE	UN1595	1	B	6.1	
4921251	DIMETHYLHYDRAZINE, SYMETRICAL	UN2382	1	B	6.1	
4921202	DIMETHYLHYDRAZINE, UNSYMMETRICAL	UN1163	1	B	6.1	
4921020	ETHYL CHLOROFORMATE	UN1182	1	B	6.1	
4927035	ETHYL ISOCYANATE	UN2481	1	A	6.1	

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4921745	ETHYL PHOSPHONOTHIOIC DICHLORIDE, ANHYDROUS	NA2927	1	B	6.1	
4921742	ETHYL PHOSPHONOUS DICHLORIDE, ANHYDROUS	NA2845	1	B	6.1	
4921744	ETHYL PHOSPHORODICHLORIDATE	NA2927	1	B	6.1	
4921404	ETHYLDICHLOROARSINE	UN1892	1	B	6.1	
4921420	ETHYLENE CHLOROHYDRIN	UN1135	1	B	6.1	
4921497	ETHYLENE DIBROMIDE	UN1605	1	B	6.1	
4927006	ETHYLENEIMINE, STABILIZED	UN1185	1	A	6.1	
4921722	HEXACHLOROCYCLOPENTADIENE	UN2646	1	B	6.1	
4921028	HYDROCYANIC ACID, AQUEOUS SOLUTIONS	UN1613	1	B	6.1	
4921239	HYDROGEN CYANIDE, SOLUTION IN ALCOHOL	UN3294	1	B	6.1	
4927014	HYDROGEN CYANIDE, STABILIZED	UN1051	1	A	6.1	
4923111	HYDROGEN CYANIDE, STABILIZED	UN1614	1		6.1	T
4927004	IRON PENTACARBONYL	UN1994	1	A	6.1	
4921211	ISOBUTYL CHLOROFORMATE	NA2742	1	B	6.1	
4927036	ISOBUTYL ISOCYANATE	UN2486	1	A	6.1	
4921699	ISOCYANATOBENZOTRI- FLUORIDES	UN2285	2		6.1	T
4921252	ISOPROPYL CHLOROFORMATE	UN2407	1	B	6.1	
4927037	ISOPROPYL ISOCYANATE	UN2483	1	A	6.1	
4921797	METAL CARBONYLS, LIQUID, N.O.S.	UN3281	1		6.1	T
4921440	METHACRYLONITRILE, STABILIZED	UN3079	1	B	6.1	
4921245	METHANESULFONYL CHLORIDE	UN3246	1	B	6.1	
4927038	METHOXYMETHYL ISOCYANATE	UN2605	1	A	6.1	
4921438	METHYL BROMIDE AND ETHYLENE DIBROMIDE MIXTURES, LIQUID	UN1647	1	B	6.1	
4927008	METHYL CHLOROFORMATE	UN1238	1	A	6.1	
4927012	METHYL CHLOROMETHYL ETHER	UN1239	1	A	6.1	
4921304	METHYL IODIDE	UN2644	1	B	6.1	
4927009	METHYL ISOCYANATE	UN2480	1	A	6.1	
4921487	METHYL ISOTHIOCYANATE	UN2477	1	B	6.1	
4921255	METHYL ORTHOSILICATE	UN2606	1	B	6.1	
4921695	METHYL PHOSPHONIC DICHLORIDE	NA9206	1	B	6.1	
4921008	METHYL PHOSPHONOUS DICHLORIDE	NA2845	1	B	6.1	
4927022	METHYL VINYL KETONE, STABILIZED	UN1251	1	A	6.1	
4921275	METHYLDICHLOROARSINE	NA1556	1	B	6.1	
4927011	METHYLHYDRAZINE	UN1244	1	A	6.1	
4921730	N-BUTYL CHLOROFORMATE	UN2743	1	B	6.1	
4921027	N-BUTYL ISOCYANATE	UN2485	1	B	6.1	
4927010	NICKEL CARBONYL	UN1259	1	A	6.1	
4921756	N-PROPYL CHLOROFORMATE	UN2740	1	B	6.1	
4927025	N-PROPYL ISOCYANATE	UN2482	1	A	6.1	
4921793	NITRILES, LIQUID, TOXIC, N.O.S.	UN3276	1		6.1	T
4921792	NITRILES, TOXIC, FLAMMABLE, N.O.S.	UN3275	1		6.1	T

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4921796	ORGANOARSENIC COMPOUND, LIQUID, N.O.S.	UN3280	1		6.1	T
4921794	ORGANOPHOSPHORUS COMPOUND, LIQUID, TOXIC, N.O.S.	UN3278	1		6.1	T
4921795	ORGANOPHOSPHORUS COMPOUND, TOXIC, FLAMMABLE, N.O.S.	UN3279	1		6.1	T
4921473	PERCHLOROMETHYLMERCAPTAN	UN1670	1	B	6.1	
4921216	PHENYL ISOCYANATE	UN2487	1	B	6.1	
4921413	PHENYL MERCAPTAN	UN2337	1	B	6.1	
4921587	PHENYLCARBYLAMINE CHLORIDE	UN1672	1	B	6.1	
4921437	PHOSPHORUS OXYCHLORIDE	UN1810	1	B	6.1	
4921016	PHOSPHORUS TRICHLORIDE	UN1809	1	B	6.1	
4921207	SEC-BUTYL CHLOROFORMATE	NA2742	1	B	6.1	
4927039	SULFURYL CHLORIDE	UN1834	1	A	6.1	
4927026	TERT-BUTYL ISOCYANATE	UN2484	1	A	6.1	
4921463	TETRANITROMETHANE	UN1510	1	B	6.1	
4921465	THIOPHOSGENE	UN2474	1	B	6.1	
4921462	TITANIUM TETRACHLORIDE	UN1838	1	B	6.1	
4921024	TOXIC BY INHALATION LIQUID, CORROSIVE, N.O.S.	UN3390	1	B	6.1	
4921287	TOXIC BY INHALATION LIQUID, CORROSIVE, N.O.S.	UN3390	1	B	6.1	
4921288	TOXIC BY INHALATION LIQUID, CORROSIVE, N.O.S.	UN3390	1	B	6.1	
4927028	TOXIC BY INHALATION LIQUID, CORROSIVE, N.O.S.	UN3389	1	A	6.1	
4921441	TOXIC BY INHALATION LIQUID, FLAMMABLE, CORROSIVE, N.O.S.	UN3489	1	B	6.1	
4927031	TOXIC BY INHALATION LIQUID, FLAMMABLE, CORROSIVE, N.O.S.	UN3488	1	A	6.1	
4921003	TOXIC BY INHALATION LIQUID, FLAMMABLE, N.O.S.	UN3384	1	B	6.1	
4921029	TOXIC BY INHALATION LIQUID, FLAMMABLE, N.O.S.	UN3384	1	B	6.1	
4927019	TOXIC BY INHALATION LIQUID, FLAMMABLE, N.O.S.	UN3383	1	A	6.1	
4921000	TOXIC BY INHALATION LIQUID, N.O.S.	UN3382	1	B	6.1	
4927018	TOXIC BY INHALATION LIQUID, N.O.S.	UN3381	1	A	6.1	
4921023	TOXIC BY INHALATION LIQUID, OXIDIZING, N.O.S.	UN3388	1	B	6.1	
4927024	TOXIC BY INHALATION LIQUID, OXIDIZING, N.O.S.	UN3387	1	A	6.1	
4921458	TOXIC BY INHALATION LIQUID, WATER-REACTIVE, FLAMMABLE, N.O.S.	UN3491	1	B	6.1	
4927034	TOXIC BY INHALATION LIQUID, WATER-REACTIVE, FLAMMABLE, N.O.S.	UN3490	1	A	6.1	
4921006	TOXIC BY INHALATION LIQUID, WATER-REACTIVE, N.O.S.	UN3386	1	B	6.1	
4927023	TOXIC BY INHALATION LIQUID, WATER-REACTIVE, N.O.S.	UN3385	1	A	6.1	

HMRC	Proper Shipping Name	UN/NA#	Packing Group	Hazard Zone	Hazard Class	Canada Only
4921213	TRIMETHOXYSILANE	NA9269	1	B	6.1	
4921063	TRIMETHYLACETYL CHLORIDE	UN2438	1	B	6.1	
4821019	WASTE ALLYL ALCOHOL	UN1098	1	B	6.1	
4821722	WASTE HEXACHLOROCYCLO- PENTADIENE	UN2646	1	B	6.1	
4821029	WASTE, TOXIC BY INHALATION LIQUID, FLAMMABLE, N.O.S.	UN3384	1	B	6.1	
CORROSIVES, HAZARD CLASS 8						
4932010	BORON TRIBROMIDE	UN2692	1	B	8	
4936110	BROMINE	UN1744	1	A	8	
4930204	CHLOROSULFONIC ACID	UN1754	1	B	8	
4933327	ETHYL CHLOROTHIOFORMATE	UN2826	2	B	8	
4930024	HYDROGEN FLUORIDE, ANHYDROUS	UN1052	1	C	8	
4931201	NITRIC ACID, RED FUMING	UN2032	1	B	8	
4932379	SULFUR CHLORIDES	UN1828	1		8	T
4930050	SULFUR TRIOXIDE, STABILIZED	UN1829	1	B	8	
4930030	SULFURIC ACID, FUMING	UN1831	1	B	8	
4935231	TRICHLOROACETYL CHLORIDE	UN2442	2	B	8	
4830030	WASTE SULFURIC ACID, FUMING	UN1831	1	B	8	

FORM 12162 Rev. (10/08) ITEM# 203688

RADIO WAYBILL

NOTE: Print legibly

HAZARDOUS MATERIAL

1. Train Number _____
2. Number of Cars from Head End _____
   (Update the position-in-train documents)
3. Car Initial & No. _____
4. Total Quantity Notation (Circle One):
   Tank Car Car Load Residue last Contained Other
   If Other, specify weight or volume _____

*** DESCRIPTION OF ARTICLES ***

5. Number of Packages/Car _____
6. UN/NA Id. No. _____
7. Proper Shipping Name _____
   _____
8. Technical Name (_____)
9. Primary Hazard Class _____
   Secondary Hazard Class_____
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 Number(s): _____
    _____
15. Additional Information _____
    _____
16. ERP Plan No.: _____
    (Canadian Shipments Only)
17. ERP Telephone No.: (_____)_____-_____
    (Canadian Shipments Only)
18. Emergency Contact (_____)_____-_____
    (_____)_____-_____

Completed:

Date: _____ /_____ /_____ Time: _____ : _____ AM PM
MO DAY YR

CHAIN-OF-CUSTODY FORM FOR RSSM SHIPMENTS

NOTE: Print legibly

The listed or attached Rail Security Sensitive Materials (RSSM) have changed custody between the parties listed:

Date: _____/_____/_____ Time: _____ : _____ AM PM *(Circle One)*
(DD/MM/YYYY)

Place / Pull / Interchange Location: _____
(Circle One) *(Location Name)*

Interchange Location: _____
(Please enter Milepost Number, Name of Rail Yard, or Designated Siding Name)

Shipper / Consignee: _____
(Circle One) *(Company Name)*

Shipper / Consignee: _____
(Circle One) *(Employee First and Last Name)*

Foreign Carrier: _____ _____
(Road Initial) *(Employee First and Last Name)*

Norfolk Southern: _____ _____
(Employee First and Last Name) *(NS ID #)*

Initial	Number	Initial	Number
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____

Completed copy should be faxed to OSS @ 1-800-476-0180 prior to end of shift.

NOTES

FOR EMERGENCIES INVOLVING NORFOLK SOUTHERN TRACK OR EQUIPMENT USE RADIO DTMF CODE

911

OR

CALL THE NORFOLK SOUTHERN POLICE COMMUNICATION CENTER

1-800-453-2530

(24 HOURS)

Please refer hazardous material questions to The Safety & Environmental Department at hmreports@nscorp.com