

# ASSOCIATION OF AMERICAN RAILROADS

**K.B. Dorsey**  
*Executive Director - Tank Car Safety*

March 15, 2010

## **Circular No. OT-55-J**

(CPC-1210, Supplement 1)

**Subject:** Recommended Railroad Operating Practices for Transportation of Hazardous Materials

**TO:** MEMBERS AND PRIVATE CAR OWNERS

On March 11, 2010, AAR's Hazardous Materials (BOE) Committee approved changes to Appendices A, B, and C which were modified to incorporate the latest information available.

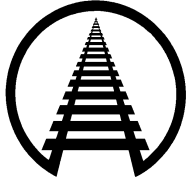
Changes include:

- The addition of Hazardous Material Response Code (HMRC) - 4821029, 4921029, and 4921027 to Appendix A and B
- The addition of Hazard Class Column to Appendix A and B
- The addition of HMRC 4925224, 4925225, and 4825181 to Appendix C
- The removal of HMRC 4920183 and replaced with HMRC 4920326 in order to place the hazardous material into the appropriate HMRC classification range
- The removal of HMRC 4920196 since HMRC 4920342 already exist for the exact same hazardous material

The revised standard is included in this circular and is in effect as of the publication date of this circular. Under the provisions of Standard S-050, which may be found on the TTCI web site ([www.AAR.com](http://www.AAR.com)), this circular reflects the final action on this matter.

Sincerely,

K.B. Dorsey



# ASSOCIATION OF AMERICAN RAILROADS

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Circular No. OT-55-J  
Effective March 17, 2009  
Appendices revised March 15, 2010

## **Recommended Railroad Operating Practices For Transportation of Hazardous Materials**

### **Road Operating Practices**

#### **I. "Key Trains"**

- A. Definition: A "Key Train" is any train with:
- one tank car load of Poison or Toxic Inhalation Hazard<sup>1</sup> (PIH or TIH) (Hazard Zone A, B, C, or D) or anhydrous ammonia, or;
  - 20 car loads or intermodal portable tank loads of a combination of PIH or TIH (Hazard Zone A, B, C or D), anhydrous ammonia, flammable gas, Class 1.1 or 1.2 explosives, and environmentally sensitive chemicals, or;
  - one or more car loads of Spent Nuclear Fuel (SNF), High Level Radioactive Waste (HLRW).
- Attached as Appendix, A and B are lists of PIH or TIH (Hazard Zone A, B, C or D) including anhydrous ammonia, Appendix C is a list of environmentally sensitive chemicals, Appendix D is a list of time sensitive materials and Appendix E is a list of SNF and HLRW with 49 Hazmat Codes.
- B. Restrictions:
1. Maximum speed -- "Key Train" - 50 MPH.
  2. Unless siding or auxiliary track meets FRA Class 2 standards, a Key Train will hold main track at meeting or passing points, when practicable.
  3. Only cars equipped with roller bearings will be allowed in a Key Train.
  4. If a defect in a "Key Train" bearing is reported by a wayside detector, but a visual inspection fails to confirm evidence of a defect, the train will not exceed 30 MPH until it has passed over the next wayside detector or delivered to a terminal for a mechanical inspection. If the same car again sets off the next detector or is found to be defective, it must be set out from the train.

#### **II. Designation of "Key Routes"**

- A. Definition: Any track with a combination of 10,000 car loads or intermodal portable tank loads of hazardous materials, or a combination of 4,000 car loadings of PIH or TIH (Hazard zone A, B, C, or D), anhydrous ammonia, flammable gas, Class 1.1 or 1.2 explosives, environmentally sensitive chemicals, Spent Nuclear Fuel (SNF), and High Level Radioactive Waste (HLRW) over a period of one year.

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<sup>1</sup> Poison Inhalation Hazard (PIH) and Toxic Inhalation Hazard (TIH) are used interchangeably and refer to the same list of chemicals.

B. Requirements:

1. Wayside defective bearing detectors shall be placed at a maximum of 40 miles apart on "Key Routes", or equivalent level of protection may be installed based on improvements in technology.
2. Main Track on "Key Routes" is inspected by rail defect detection and track geometry inspection cars or any equivalent level of inspection no less than two times each year; sidings are similarly inspected no less than one time each year; and main track and sidings will have periodic track inspections that will identify cracks or breaks in joint bars.
3. Any track used for meeting and passing "Key Trains" must be Class 2 or higher. If a meet or pass must occur on less than Class 2 track due to an emergency, one of the trains must be stopped before the other train passes.

III. **Yard Operating Practices**

- A. Maximum reasonable efforts will be made to achieve coupling of loaded placarded tank cars at speeds not to exceed 4 MPH.
- B. Loaded placarded tank cars of PIH or TIH (Hazard zone A, B, C or D), anhydrous ammonia, or flammable gas which are cut off in motion for coupling must be handled in not more than 2-car cuts; and cars cut off in motion to be coupled directly to a loaded placarded tank car of PIH or TIH (Hazard zone A, B, C, or D), anhydrous ammonia, or flammable gas must also be handled in not more than 2-car cuts.

IV. **Storage**

**Separation Distance for New Facilities**

Loaded Tank Cars and Storage Tanks from Mainline Class 2 Track or Higher

Activity	PIH (Zone A, B, C or D), Class 3, Division 2.1, Division 2.2 and all other Hazard Classes	Combustible Liquids, Class 8, and Class 9
Loading and Unloading	100 FEET	50 FEET
Storage of Loaded Tank Cars	50 FEET	25 FEET
Storage in Tanks	100 FEET	50 FEET

*Note 1* - With regard to existing facilities, maximum reasonable effort should be made to conform to this standard taking into consideration cost, physical and legal constraints.

*Note 2* - The proposals apply to storage on railroad property and on chemical company property located close to railroad mainline.

V. **TRANSCAER®** (Transportation Community Awareness and Emergency Response Implementation of Transcaer®)

Railroads will assist in implementing TRANSCAER®, a system-wide community outreach program to improve community awareness, emergency planning and incident response for the transportation of hazardous materials. Objectives of TRANSCAER® are as follows:

- Demonstrate the continuing commitment of chemical manufacturers and transporters to the safe transportation of hazardous materials;

- Improve the relationship between manufacturers, carriers and local officials of communities through which hazardous materials are transported;
- When requested assist Local Emergency Planning Committees (LEPC's) in assessing the hazardous materials moving through their communities and the safeguards that are in place to protect against unintentional releases. Upon written request, AAR members will provide bona fide emergency response agencies or planning groups with specific commodity flow information covering at a minimum the top 25 hazardous commodities transported through the community in rank order. The request must be made using the form included as Appendix F by an official emergency response or planning group with a cover letter on appropriate letterhead bearing an authorized signature. The form reflects the fact that the railroad industry considers this information to be restricted information of a security sensitive nature and that the recipient of the information must agree to release the information only to bona fide emergency response planning and response organizations and not distribute the information publicly in whole or in part without the individual railroad's express written permission. It should be noted that commercial requirements change over time, and it is possible that a hazardous materials transported tomorrow might not be included in the specific commodity flow information provided upon request, since that information was not available at the time the list was provided;
- Assist LEPC's in developing emergency plans to cope with hazardous materials transportation incidents;
- Assist community response organizations in preparations for responding to hazardous materials incidents.

*TRANSCAER® activities are also addressed in the Distribution Code of the American Chemistry Council's Responsible Care® program. Many members have joined the Responsible Care® Partnership Program to help describe and improve their ongoing safety, health and environmental programs.*

An important product of the TRANSCAER® program will be to overcome the widespread belief that every local firefighter and policeman must have the expert skills and equipment to respond personally to any hazardous materials emergency. Through the awareness training and contingency planning provided through TRANSCAER®, states and local communities will be able to pool their expertise and resources with those of industry to provide for a more coordinated and better managed emergency response system.

TRANSCAER® should be highly publicized to produce the maximum desirable enhancement of public awareness.

## **VI. Criteria for Shipper Notification**

The railroads will initiate the shipper's emergency response system by calling CHEMTREC, or the appropriate contact telephone number as required by regulation on the shipping document, when an incident occurs involving any car (load or residue) containing a hazardous material regulated in transportation by the Department of Transportation.

An incident is defined as a rail car which is derailed and not upright, or which has sustained body or tank shell damage, or has sustained a release of any amount of product.

The shipper's emergency response system should also be initiated if the carrier believes there is reason to suspect any other potential for injury to people, property or the environment.

In the event of a major rail accident, a consist (to include shipper, consignee and commodity description for each hazardous material), waybill or equivalent document, should be provided upon request to CHEMTREC or the appropriate shipper contact as identified by the emergency response telephone number displayed on the shipping document. This can be accomplished by facsimile or other appropriate and acceptable electronic means.

A major rail accident is defined as one resulting in fire, explosion, the potential for an explosion, fatalities, evacuation of the general public, or multiple releases of hazardous materials.

Anytime a consist or other document is provided to CHEMTREC or the appropriate contact a follow-up call by the carrier should be made to confirm the receipt of the information as well as to provide other additional information pertaining to the incident not contained in the facsimile or electronically transmitted document.

This practice does not preclude any carrier from notifying CHEMTREC or the appropriate shipper contact of a rail incident involving hazardous materials that does not meet the criteria outlined above.

**VII Time Sensitive Materials**

Railroads and shippers will be responsible for monitoring the shipments (loads & residue) of products classified by the Department of Transportation as being time sensitive.

This monitoring process will, at a minimum, provide a means to ensure the movement of rail cars containing time sensitive materials (for list see Appendix D) in order to achieve delivery of the product within the time specified by the Department of Transportation.

As warranted, railroads will implement an internal escalation process and communicate with shippers, receivers and other rail carriers concerning any rail car containing a time sensitive product that has been delayed in transit to the extent that it may not reach destination within the time specified by the Department of Transportation. In such cases, an expedited movement of the rail car, or other action as deemed appropriate by the carrier and shipper will be taken.

**VIII Special Provision for Spent Nuclear Fuel (SNF) and High Level Radioactive Waste (HLRW)**

When a train carrying SNF or HLRW meets another train carrying loaded tank cars of flammable gas, flammable liquids or combustible liquids in a single bore double track tunnel, one train shall stop outside the tunnel until the other train is completely through the tunnel.

**IX Applicability**

These recommendations are adopted by each AAR and American Short Line and Regional Railroad Association (ASLRRA) member without reservation for its operations within the United States of America.

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Supersedes Circular No. OT-55-I dated July 17, 2006

**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**  
**March 15, 2010**

HMRC	Proper Shipping Name	UN/NA#	Packing Group	Hazard Zone	Hazard Class
<b>NON-FLAMMABLE GASES, HAZARD CLASS 2.2</b>					
4904210	Ammonia, Anhydrous	UN 1005			2.2
4904879	Ammonia, Anhydrous	UN 1005			2.2
4904211	Ammonia, Solution	UN 3318			2.2
<b>POISON GASES, HAZARD CLASS 2.3</b>					
4920359	Ammonia, Anhydrous	UN 1005		D	2.3
4920360	Ammonia, Solution	UN 3318		D	2.3
4920135	Arsine	UN 2188		A	2.3
4920349	Boron Trichloride	UN 1741		C	2.3
4920522	Boron Trifluoride	UN 1008		B	2.3
4920715	Bromine Chloride	UN 2901		B	2.3
4920343	Carbon Monoxide and Hydrogen mixture, Compressed	UN 2600			2.3
4920399	Carbon Monoxide, Compressed	UN 1016		D	2.3
4920511	Carbon Monoxide, refrigerated liquid	NA 9202		D	2.3
4920559	Carbonyl Fluoride	UN 2417		B	2.3
4920351	Carbonyl Sulfide	UN 2204		C	2.3
4920523	Chlorine	UN 1017		B	2.3
4920189	Chlorine Pentafluoride	UN 2548		A	2.3
4920352	Chlorine Trifluoride	UN 1749		B	2.3
4920516	Chloropicrin and Methyl Bromide mixtures	UN 1581		B	2.3
4920547	Chloropicrin and Methyl Bromide mixtures	UN 1581		B	2.3
4920392	Chloropicrin and Methyl Chloride mixtures	UN 1582		B	2.3
4920527	Coal Gas, Compressed	UN 1023		C	2.3
4920101	Compressed Gas, toxic, corrosive, n.o.s.	UN 3304		A	2.3
4920324	Compressed Gas, toxic, corrosive, n.o.s.	UN 3304		B	2.3
4920301	Compressed Gas, toxic, corrosive, n.o.s.	UN3304		D	2.3
4920331	Compressed Gas, toxic, corrosive, n.o.s.	UN 3304		C	2.3
4920102	Compressed Gas, toxic, flammable, corrosive, n.o.s.	UN 3305		A	2.3
4920303	Compressed Gas, toxic, flammable, corrosive, n.o.s.	UN 3305		B	2.3
4920304	Compressed Gas, toxic, flammable, corrosive, n.o.s.	UN 3305		C	2.3
4920305	Compressed Gas, toxic, flammable, corrosive, n.o.s.	UN 3305		D	2.3
4920165	Compressed Gas, toxic, flammable, n.o.s.	UN 1953		A	2.3
4920396	Compressed Gas, toxic, flammable, n.o.s.	UN 1953		B	2.3
4920378	Compressed Gas, toxic, flammable, n.o.s.	UN 1953		C	2.3
4920379	Compressed Gas, toxic, flammable, n.o.s.	UN 1953		D	2.3
4920556	Compressed Gas, toxic, n.o.s.	UN 1955		B	2.3

HMRC	Proper Shipping Name	UN/NA#	Packing Group	Hazard Zone	Hazard Class
4920181	Compressed Gas, toxic, n.o.s.	UN 1955		A	2.3
4920570	Compressed Gas, toxic, n.o.s.	UN 1955		B	2.3
4920375	Compressed Gas, toxic, n.o.s.	UN 1955		C	2.3
4920373	Compressed Gas, toxic, n.o.s.	UN 1955		D	2.3
4920505	Compressed Gas, toxic, n.o.s.	UN 1955		C	2.3
4920517	Compressed Gas, toxic, n.o.s.	UN 1955			2.3
4920525	Compressed Gas, toxic, n.o.s.	UN 1955			2.3
4920103	Compressed Gas, toxic, oxidizing, corrosive, n.o.s.	UN 3306		A	2.3
4920306	Compressed Gas, toxic, oxidizing, corrosive, n.o.s.	UN 3306		B	2.3
4920307	Compressed Gas, toxic, oxidizing, corrosive, n.o.s.	UN 3306		C	2.3
4920308	Compressed Gas, toxic, oxidizing, corrosive, n.o.s.	UN 3306		D	2.3
4920104	Compressed gas, toxic, oxidizing, n.o.s.	UN 3303		A	2.3
4920337	Compressed gas, toxic, oxidizing, n.o.s.	UN 3303		B	2.3
4920309	Compressed gas, toxic, oxidizing, n.o.s.	UN 3303		C	2.3
4920310	Compressed gas, toxic, oxidizing, n.o.s.	UN 3303		D	2.3
4920395	Cyanogen	UN 1026		B	2.3
4920178	Cyanogen Chloride, Stabilized	UN 1589		A	2.3
4920107	Diborane	UN 1911		A	2.3
4920398	Dichlorosilane	UN 2189		B	2.3
4920174	Dinitrogen Tetroxide	UN 1067		A	2.3
4920342	Ethylene Oxide and Carbon Dioxide mixture	UN 3300		D	2.3
4920353	Ethylene Oxide or Ethylene Oxide with Nitrogen	UN 1040		D	2.3
4920180	Fluorine, Compressed	UN 1045		A	2.3
4920510	Gas Identification set	NA 9035			2.3
4920536	Gas sample, non-pressurized, toxic, n.o.s.	UN 3169			2.3
4920534	Gas sample, non-pressurized, toxic, flammable, n.o.s.	UN 3168			2.3
4920354	Germane	UN 2192		B	2.3
4920515	Hexaethyl tetraphosphate and compressed gas mixtures	UN 1612		C	2.3
4920528	Hexafluoroacetone	UN 2420		B	2.3
4920502	Hydrogen Bromide, anhydrous	UN 1048		C	2.3
4920503	Hydrogen Chloride, anhydrous	UN 1050		C	2.3
4920504	Hydrogen Chloride, refrigerated liquid	UN 2186		C	2.3
4920348	Hydrogen Iodide, anhydrous	UN 2197		C	2.3
4920122	Hydrogen Selenide, anhydrous	UN 2202		A	2.3
4920513	Hydrogen Sulfide	UN 1053		B	2.3
4920115	Insecticide gases, toxic, flammable, n.o.s.	UN 3355		A	2.3
4920302	Insecticide gases, toxic, flammable, n.o.s.	UN 3355		B	2.3
4920322	Insecticide gases, toxic, flammable, n.o.s.	UN 3355		C	2.3
4920323	Insecticide gases, toxic, flammable, n.o.s.	UN 3355		D	2.3
4920550	Insecticide gases, toxic, n.o.s.	UN 1967		C	2.3
4920105	Liquefied gas, toxic, corrosive, n.o.s.	UN 3308		A	2.3
4920311	Liquefied gas, toxic, corrosive, n.o.s.	UN 3308		B	2.3
4920313	Liquefied gas, toxic, corrosive, n.o.s.	UN 3308		C	2.3
4920315	Liquefied gas, toxic, corrosive, n.o.s.	UN 3308		D	2.3

HMRC	Proper Shipping Name	UN/NA#	Packing Group	Hazard Zone	Hazard Class
4920108	Liquefied gas, toxic, flammable, corrosive, n.o.s.	UN 3309		A	2.3
4920314	Liquefied gas, toxic, flammable, corrosive, n.o.s.	UN 3309		B	2.3
4920316	Liquefied gas, toxic, flammable, corrosive, n.o.s.	UN 3309		C	2.3
4920318	Liquefied gas, toxic, flammable, corrosive, n.o.s.	UN 3309		D	2.3
4920164	Liquefied gas, toxic, flammable, n.o.s.	UN 3160		A	2.3
4920382	Liquefied gas, toxic, flammable, n.o.s.	UN 3160		B	2.3
4920380	Liquefied gas, toxic, flammable, n.o.s.	UN 3160		C	2.3
4920381	Liquefied gas, toxic, flammable, n.o.s.	UN 3160		D	2.3
4920195	Liquefied gas, toxic, n.o.s.	UN 3162		A	2.3
4920368	Liquefied gas, toxic, n.o.s.	UN 3162		C	2.3
4920369	Liquefied gas, toxic, n.o.s.	UN 3162		D	2.3
4920383	Liquefied gas, toxic, n.o.s.	UN 3162			2.3
4920531	Liquefied gas, toxic, n.o.s.	UN 3162			2.3
4920571	Liquefied gas, toxic, n.o.s.	UN 3162		B	2.3
4920110	Liquefied gas, toxic, oxidizing, corrosive, n.o.s.	UN 3310		A	2.3
4920312	Liquefied gas, toxic, oxidizing, corrosive, n.o.s.	UN 3310		B	2.3
4920320	Liquefied gas, toxic, oxidizing, corrosive, n.o.s.	UN 3310		C	2.3
4920325	Liquefied gas, toxic, oxidizing, corrosive, n.o.s.	UN 3310		D	2.3
4920111	Liquefied gas, toxic, oxidizing, n.o.s.	UN 3307		A	2.3
4920317	Liquefied gas, toxic, oxidizing, n.o.s.	UN 3307		B	2.3
4920319	Liquefied gas, toxic, oxidizing, n.o.s.	UN 3307		C	2.3
4920321	Liquefied gas, toxic, oxidizing, n.o.s.	UN 3307		D	2.3
4920518	Methyl Bromide	UN 1062		C	2.3
4920355	Methyl Mercaptan	UN 1064		C	2.3
4920394	Methylchlorosilane	UN 2534		B	2.3
4920113	Nitric oxide and nitrogen dioxide mixtures or Nitric oxide and dinitrogen tetroxide mixtures	UN 1975		A	2.3
4920112	Nitric Oxide, Compressed	UN 1660		A	2.3
4920175	Nitrogen Trioxide	UN 2421		A	2.3
4920509	Nitrosyl Chloride	UN 1069		C	2.3
4920344	Oil Gas, Compressed	UN 1071			2.3
4920530	Organic phosphate, mixed with compressed gas or Organic phosphate compound, mixed with compressed gas or Organic phosphorus compound, mixed with compressed gas	NA 1955		C	2.3
4920173	Oxygen Difluoride, Compressed	UN 2190		A	2.3
4920535	Parathion and Compressed gas mixture	NA 1967		C	2.3
4920356	Perchloryl Fluoride	UN 3083		B	2.3
4920184	Phosgene	UN 1076		A	2.3
4920160	Phosphine	UN 2199		A	2.3
4920326	Phosphorus Pentafluoride	UN 2198		B	2.3
4920106	Selenium Hexafluoride	UN 2194		A	2.3
4920357	Silicon Tetrafluoride	UN 1859		B	2.3
4920167	Stibine	UN 2676		A	2.3
4920508	Sulfur Dioxide	UN 1079		C	2.3
4920187	Sulfur Tetrafluoride	UN 2418		A	2.3

HMRC	Proper Shipping Name	UN/NA#	Packing Group	Hazard Zone	Hazard Class
4920526	Sulfuryl Fluoride	UN 2191		D	2.3
4920188	Tellurium Hexafluoride	UN 2195		A	2.3
4920347	Trifluoroacetyl Chloride	UN 3057		B	2.3
4920346	Trifluorochloroethylene, Stabilized	UN 1082		C	2.3
4920371	Tungsten Hexafluoride	UN 2196		B	2.3
<b>FLAMMABLE LIQUIDS, HAZARD CLASS 3</b>					
4907434	Ethyl Isocyanate	UN 2481	I	A	3
4907409	Isobutyl Isocyanate	UN 2486	I	A	3
4909306	Isopropyl Isocyanate	UN 2483	I	A	3
4910370	Methacrylonitrile, Stabilized	UN 3079	I	B	3
4909307	Methoxymethyl Isocyanate	UN 2605	I	A	3
<b>SPONTANEOUSLY COMBUSTIBLE, HAZARD CLASS 4.2</b>					
4916138	Pentaborane	UN 1380	I	A	4.2
<b>OXIDIZERS, HAZARD CLASS 5.1</b>					
4918505	Bromine Pentafluoride	UN 1745	I	A	5.1
4918507	Bromine Trifluoride	UN 1746	I	B	5.1
4918180	Tetranitromethane	UN 1510	I	B	5.1
<b>POISONS, HAZARD CLASS 6.1</b>					
4921402	2-Chloroethanal	UN 2232	I	B	6.1
4921495	2-Methyl-2-Heptanethiol	UN 3023	I	B	6.1
4921741	3, 5-Dichloro-2, 4, 6-Trifluoropyridine	NA 9264	I	B	6.1
4921401	Acetone Cyanohydrin, Stabilized	UN 1541	I	B	6.1
4927007	Acrolein, Stabilized	UN 1092	I	A	6.1
4921019	Allyl Alcohol	UN 1098	I	B	6.1
4923113	Allyl Chloroformate	UN 1722	I	B	6.1
4921004	Allylamine	UN 2334	I	B	6.1
4923209	Arsenic Trichloride	UN 1560	I	B	6.1
4921727	Bromoacetone	UN 1569	II	B	6.1
4921558	Chloroacetone, Stabilized	UN 1695	I	B	6.1
4921009	Chloroacetonitrile	UN 2668	II	B	6.1
4923117	Chloroacetyl Chloride	UN 1752	I	B	6.1
4921414	Chloropicrin	UN 1580	I	B	6.1
4921746	Chloropivaloyl Chloride	NA 9263	I	B	6.1
4921248	Crotonaldehyde, Stabilized	UN 1143	I	B	6.1
4921010	Cyclohexyl Isocyanate	UN 2488	I	B	6.1
4921254	Diketene, Stabilized	UN 2521	I	B	6.1
4921405	Dimethyl Sulfate	UN 1595	I	B	6.1
4921251	Dimethylhydrazine, Symmetrical	UN 2382	I	B	6.1
4921202	Dimethylhydrazine, Unsymmetrical	UN 1163	I	B	6.1
4921020	Ethyl Chloroformate	UN 1182	I	B	6.1
4921745	Ethyl Phosphonothioic Dichloride, Anhydrous	NA 2927	I	B	6.1
4921742	Ethyl Phosphonous Dichloride, Anhydrous pyrophoric liquid	NA 2845	I	B	6.1
4921744	Ethyl Phosphorodichloridate	NA 2927	I	B	6.1
4921404	Ethyl dichloroarsine	UN 1892	I	B	6.1
4921420	Ethylene Chlorohydrin	UN 1135	I	B	6.1

HMRC	Proper Shipping Name	UN/NA#	Packing Group	Hazard Zone	Hazard Class
4921497	Ethylene Dibromide	UN 1605	I	B	6.1
4927006	Ethyleneimine, Stabilized	UN 1185	I	A	6.1
4921722	Hexachlorocyclopentadiene	UN 2646	I	B	6.1
4921028	Hydrocyanic acid, aqueous solutions or Hydrogen cyanide, aqueous solutions	UN 1613	I	B	6.1
4921239	Hydrogen Cyanide, solution in alcohol	UN 3294	I	B	6.1
4927014	Hydrogen Cyanide, stabilized	UN 1051	I	A	6.1
4927004	Iron Pentacarbonyl	UN 1994	I	A	6.1
4921211	Isobutyl Chloroformate	NA 2742	I	B	6.1
4921252	Isopropyl Chloroformate	UN 2407	I	B	6.1
4921245	Methanesulfonyl Chloride	UN 3246	I	B	6.1
4921438	Methyl Bromide and Ethylene dibromide mixtures, liquid	UN 1647	I	B	6.1
4927008	Methyl Chloroformate	UN 1238	I	A	6.1
4927012	Methyl Chloromethyl Ether	UN 1239	I	A	6.1
4921304	Methyl Iodide	UN 2644	I	B	6.1
4927009	Methyl Isocyanate	UN 2480	I	A	6.1
4921487	Methyl Isothiocyanate	UN 2477	I	B	6.1
4921255	Methyl Orthosilicate	UN 2606	I	B	6.1
4921695	Methyl Phosphonic Dichloride	NA 9206	I	B	6.1
4921008	Methyl Phosphonous Dichloride	NA 2845	I	B	6.1
4927022	Methyl Vinyl Ketone, Stabilized	UN 1251	I	A	6.1
4921275	Methyldichloroarsine	NA 1556	I	B	6.1
4927011	Methylhydrazine	UN 1244	I	A	6.1
4921730	n-Butyl Chloroformate	UN 2743	I	B	6.1
4921027	n-Butyl Isocyanate	UN 2485	I	B	6.1
4927010	Nickel Carbonyl	UN 1259	I	A	6.1
4921756	n-Propyl Chloroformate	UN 2740	I	B	6.1
4927025	n-Propyl Isocyanate	UN 2482	I	A	6.1
4921473	Perchloromethyl Mercaptan	UN 1670	I	B	6.1
4921216	Phenyl Isocyanate	UN 2487	I	B	6.1
4921413	Phenyl Mercaptan	UN 2337	I	B	6.1
4921587	Phenylcarbylamine Chloride	UN 1672	I	B	6.1
4921016	Phosphorus Trichloride	UN 1809	I	B	6.1
4921207	sec-Butyl Chloroformate	NA 2742	I	B	6.1
4927026	tert-Butyl Isocyanate	UN 2484	I	A	6.1
4923298	Thiophosgene	UN 2474	II	B	6.1
4921024	Toxic by Inhalation liquid, corrosive, n.o.s.	UN 3390	I	B	6.1
4921287	Toxic by Inhalation liquid, corrosive, n.o.s.	UN 3390	I	B	6.1
4921288	Toxic by Inhalation liquid, corrosive, n.o.s.	UN 3390	I	B	6.1
4927028	Toxic by Inhalation liquid, corrosive, n.o.s.	UN 3389	I	A	6.1
4921003	Toxic by Inhalation liquid, flammable, n.o.s.	UN 3384	I	B	6.1
4921029	Toxic by Inhalation liquid, flammable, n.o.s.	UN 3384	I	B	6.1
4927019	Toxic by Inhalation liquid, flammable, n.o.s.	UN 3383	I	A	6.1
4921000	Toxic by Inhalation liquid, n.o.s.	UN 3382	I	B	6.1
4927018	Toxic by Inhalation liquid, n.o.s.	UN 3381	I	A	6.1

HMRC	Proper Shipping Name	UN/NA#	Packing Group	Hazard Zone	Hazard Class
4921023	Toxic by Inhalation liquid, oxidizing, n.o.s.	UN 3388	I	B	6.1
4927024	Toxic by Inhalation liquid, oxidizing, n.o.s.	UN 3387	I	A	6.1
4921006	Toxic by Inhalation liquid, water-reactive, n.o.s.	UN 3386	I	B	6.1
4927023	Toxic by Inhalation liquid, water-reactive, n.o.s.	UN 3385	I	A	6.1
4921213	Trimethoxysilane	NA 9269	I	B	6.1
4921063	Trimethylacetyl Chloride	UN 2438	I	B	6.1
4821019	Waste Allyl Alcohol	UN 1098	I	B	6.1
4821029	Waste Toxic by Inhalation Liquid, Flammable, n.o.s.	UN 3384	I	B	6.1
4821722	Waste Hexachlorocyclopentadiene	UN 2646	I	B	6.1
<b>CORROSIVES, HAZARD CLASS 8</b>					
4932010	Boron Tribromide	UN 2692	I	B	8
4936110	Bromine or Bromine Solutions	UN 1744	I	A	8
4936106	Bromine Solutions	UN 1744	I	B	8
4930204	Chlorosulfonic Acid	UN 1754	I	B	8
4933327	Ethyl Chlorothioformate	UN 2826	II	B	8
4930024	Hydrogen Fluoride, Anhydrous	UN 1052	I	C	8
4931201	Nitric Acid, red fuming	UN 2032	I	B	8
4932352	Phosphorus Oxychloride	UN 1810	II	B	8
4930050	Sulfur Trioxide, Stabilized	UN 1829	I	B	8
4930030	Sulfuric acid, fuming	UN 1831	I	B	8
4930260	Sulfuryl Chloride	UN 1834	I	A	8
4932385	Titanium Tetrachloride	UN 1838	II	B	8
4935231	Trichloroacetyl Chloride	UN 2442	II	B	8
4830030	Waste Sulfuric acid, fuming	UN 1831	I	B	8

**Appendix B:**  
**List of Poison Inhalation Hazard (PIH) or Toxic Inhalation Hazard Chemicals (TIH)**  
**(Hazard Zone A, B, C, or D)**  
**Sorted by Hazmat Response Code #**  
**March 15, 2010**

HMRC	Proper Shipping Name	UN/NA#	Packing Group	Hazard Zone	Hazard Class
4821019	Waste Allyl Alcohol	UN 1098	I	B	6.1
4821029	Waste Toxic by Inhalation Liquid, Flammable, n.o.s.	UN 3384	I	B	6.1
4821722	Waste Hexachlorocyclopentadiene	UN 2646	I	B	6.1
4830030	Waste Sulfuric acid, fuming	UN 1831	I	B	8
4904210	Ammonia, Anhydrous	UN 1005			2.2
4904211	Ammonia, Solution	UN 3318			2.2
4904879	Ammonia, Anhydrous	UN 1005			2.2
4907409	Isobutyl Isocyanate	UN 2486	I	A	3
4907434	Ethyl Isocyanate	UN 2481	I	A	3
4909306	Isopropyl Isocyanate	UN 2483	I	A	3
4909307	Methoxymethyl Isocyanate	UN 2605	I	A	3
4910370	Methacrylonitrile, Stabilized	UN 3079	I	B	3
4916138	Pentaborane	UN 1380	I	A	4.2
4918180	Tetranitromethane	UN 1510	I	B	5.1
4918505	Bromine Pentafluoride	UN 1745	I	A	5.1
4918507	Bromine Trifluoride	UN 1746	I	B	5.1
4920101	Compressed Gas, toxic, corrosive, n.o.s.	UN 3304		A	2.3
4920102	Compressed Gas, toxic, flammable, corrosive, n.o.s.	UN 3305		A	2.3
4920103	Compressed Gas, toxic, oxidizing, corrosive, n.o.s.	UN 3306		A	2.3
4920104	Compressed gas, toxic, oxidizing, n.o.s.	UN 3303		A	2.3
4920105	Liquefied gas, toxic, corrosive, n.o.s.	UN 3308		A	2.3
4920106	Selenium Hexafluoride	UN 2194		A	2.3
4920107	Diborane	UN 1911		A	2.3
4920108	Liquefied gas, toxic, flammable, corrosive, n.o.s.	UN 3309		A	2.3
4920110	Liquefied gas, toxic, oxidizing, corrosive, n.o.s.	UN 3310		A	2.3
4920111	Liquefied gas, toxic, oxidizing, n.o.s.	UN 3307		A	2.3
4920112	Nitric Oxide, Compressed	UN 1660		A	2.3
4920113	Nitric oxide and nitrogen dioxide mixtures or Nitric oxide and dinitrogen tetroxide mixtures	UN 1975		A	2.3
4920115	Insecticide gases, toxic, flammable, n.o.s.	UN 3355		A	2.3
4920122	Hydrogen Selenide, anhydrous	UN 2202		A	2.3
4920135	Arsine	UN 2188		A	2.3
4920160	Phosphine	UN 2199		A	2.3
4920164	Liquefied gas, toxic, flammable, n.o.s.	UN 3160		A	2.3
4920165	Compressed Gas, toxic, flammable, n.o.s.	UN 1953		A	2.3
4920167	Stibine	UN 2676		A	2.3
4920173	Oxygen Difluoride, Compressed	UN 2190		A	2.3
4920174	Dinitrogen Tetroxide	UN 1067		A	2.3
4920175	Nitrogen Trioxide	UN 2421		A	2.3

HMRC	Proper Shipping Name	UN/NA#	Packing Group	Hazard Zone	Hazard Class
4920178	Cyanogen Chloride, Stabilized	UN 1589		A	2.3
4920180	Fluorine, Compressed	UN 1045		A	2.3
4920181	Compressed Gas, toxic, n.o.s.	UN 1955		A	2.3
4920184	Phosgene	UN 1076		A	2.3
4920187	Sulfur Tetrafluoride	UN 2418		A	2.3
4920188	Tellurium Hexafluoride	UN 2195		A	2.3
4920189	Chlorine Pentafluoride	UN 2548		A	2.3
4920195	Liquefied gas, toxic, n.o.s.	UN 3162		A	2.3
4920301	Compressed Gas, toxic, corrosive, n.o.s.	UN3304		D	2.3
4920302	Insecticide gases, toxic, flammable, n.o.s.	UN 3355		B	2.3
4920303	Compressed Gas, toxic, flammable, corrosive, n.o.s.	UN 3305		B	2.3
4920304	Compressed Gas, toxic, flammable, corrosive, n.o.s.	UN 3305		C	2.3
4920305	Compressed Gas, toxic, flammable, corrosive, n.o.s.	UN 3305		D	2.3
4920306	Compressed Gas, toxic, oxidizing, corrosive, n.o.s.	UN 3306		B	2.3
4920307	Compressed Gas, toxic, oxidizing, corrosive, n.o.s.	UN 3306		C	2.3
4920308	Compressed Gas, toxic, oxidizing, corrosive, n.o.s.	UN 3306		D	2.3
4920309	Compressed gas, toxic, oxidizing, n.o.s.	UN 3303		C	2.3
4920310	Compressed gas, toxic, oxidizing, n.o.s.	UN 3303		D	2.3
4920311	Liquefied gas, toxic, corrosive, n.o.s.	UN 3308		B	2.3
4920312	Liquefied gas, toxic, oxidizing, corrosive, n.o.s.	UN 3310		B	2.3
4920313	Liquefied gas, toxic, corrosive, n.o.s.	UN 3308		C	2.3
4920314	Liquefied gas, toxic, flammable, corrosive, n.o.s.	UN 3309		B	2.3
4920315	Liquefied gas, toxic, corrosive, n.o.s.	UN 3308		D	2.3
4920316	Liquefied gas, toxic, flammable, corrosive, n.o.s.	UN 3309		C	2.3
4920317	Liquefied gas, toxic, oxidizing, n.o.s.	UN 3307		B	2.3
4920318	Liquefied gas, toxic, flammable, corrosive, n.o.s.	UN 3309		D	2.3
4920319	Liquefied gas, toxic, oxidizing, n.o.s.	UN 3307		C	2.3
4920320	Liquefied gas, toxic, oxidizing, corrosive, n.o.s.	UN 3310		C	2.3
4920321	Liquefied gas, toxic, oxidizing, n.o.s.	UN 3307		D	2.3
4920322	Insecticide gases, toxic, flammable, n.o.s.	UN 3355		C	2.3
4920323	Insecticide gases, toxic, flammable, n.o.s.	UN 3355		D	2.3
4920324	Compressed Gas, toxic, corrosive, n.o.s.	UN 3304		B	2.3
4920325	Liquefied gas, toxic, oxidizing, corrosive, n.o.s.	UN 3310		D	2.3
4920326	Phosphorus Pentafluoride	UN 2198		B	2.3
4920331	Compressed Gas, toxic, corrosive, n.o.s.	UN 3304		C	2.3
4920337	Compressed gas, toxic, oxidizing, n.o.s.	UN 3303		B	2.3
4920342	Ethylene Oxide and Carbon Dioxide mixture	UN 3300		D	2.3
4920343	Carbon Monoxide and Hydrogen mixture, Compressed	UN 2600			2.3
4920344	Oil Gas, Compressed	UN 1071			2.3
4920346	Trifluorochloroethylene, Stabilized	UN 1082		C	2.3
4920347	Trifluoroacetyl Chloride	UN 3057		B	2.3
4920348	Hydrogen Iodide, anhydrous	UN 2197		C	2.3

HMRC	Proper Shipping Name	UN/NA#	Packing Group	Hazard Zone	Hazard Class
4920349	Boron Trichloride	UN 1741		C	2.3
4920351	Carbonyl Sulfide	UN 2204		C	2.3
4920352	Chlorine Trifluoride	UN 1749		B	2.3
4920353	Ethylene Oxide or Ethylene Oxide with Nitrogen	UN 1040		D	2.3
4920354	Germane	UN 2192		B	2.3
4920355	Methyl Mercaptan	UN 1064		C	2.3
4920356	Perchloryl Fluoride	UN 3083		B	2.3
4920357	Silicon Tetrafluoride	UN 1859		B	2.3
4920359	Ammonia, Anhydrous	UN 1005		D	2.3
4920360	Ammonia, Solution	UN 3318		D	2.3
4920368	Liquefied gas, toxic, n.o.s.	UN 3162		C	2.3
4920369	Liquefied gas, toxic, n.o.s.	UN 3162		D	2.3
4920371	Tungsten Hexafluoride	UN 2196		B	2.3
4920373	Compressed Gas, toxic, n.o.s.	UN 1955		D	2.3
4920375	Compressed Gas, toxic, n.o.s.	UN 1955		C	2.3
4920378	Compressed Gas, toxic, flammable, n.o.s.	UN 1953		C	2.3
4920379	Compressed Gas, toxic, flammable, n.o.s.	UN 1953		D	2.3
4920380	Liquefied gas, toxic, flammable, n.o.s.	UN 3160		C	2.3
4920381	Liquefied gas, toxic, flammable, n.o.s.	UN 3160		D	2.3
4920382	Liquefied gas, toxic, flammable, n.o.s.	UN 3160		B	2.3
4920383	Liquefied gas, toxic, n.o.s.	UN 3162			2.3
4920392	Chloropicrin and Methyl Chloride mixtures	UN 1582		B	2.3
4920394	Methylchlorosilane	UN 2534		B	2.3
4920395	Cyanogen	UN 1026		B	2.3
4920396	Compressed Gas, toxic, flammable, n.o.s.	UN 1953		B	2.3
4920398	Dichlorosilane	UN 2189		B	2.3
4920399	Carbon Monoxide, Compressed	UN 1016		D	2.3
4920502	Hydrogen Bromide, anhydrous	UN 1048		C	2.3
4920503	Hydrogen Chloride, anhydrous	UN 1050		C	2.3
4920504	Hydrogen Chloride, refrigerated liquid	UN 2186		C	2.3
4920505	Compressed Gas, toxic, n.o.s.	UN 1955		C	2.3
4920508	Sulfur Dioxide	UN 1079		C	2.3
4920509	Nitrosyl Chloride	UN 1069		C	2.3
4920510	Gas Identification set	NA 9035			2.3
4920511	Carbon Monoxide, refrigerated liquid	NA 9202		D	2.3
4920513	Hydrogen Sulfide	UN 1053		B	2.3
4920515	Hexaethyl tetraphosphate and compressed gas mixtures	UN 1612		C	2.3
4920516	Chloropicrin and Methyl Bromide mixtures	UN 1581		B	2.3
4920517	Compressed Gas, toxic, n.o.s.	UN 1955			2.3
4920518	Methyl Bromide	UN 1062		C	2.3
4920522	Boron Trifluoride	UN 1008		B	2.3
4920523	Chlorine	UN 1017		B	2.3
4920525	Compressed Gas, toxic, n.o.s.	UN 1955			2.3
4920526	Sulfuryl Fluoride	UN 2191		D	2.3

HMRC	Proper Shipping Name	UN/NA#	Packing Group	Hazard Zone	Hazard Class
4920527	Coal Gas, Compressed	UN 1023		C	2.3
4920528	Hexafluoroacetone	UN 2420		B	2.3
4920530	Organic phosphate, mixed with compressed gas or Organic phosphate compound, mixed with compressed gas or Organic phosphorus compound, mixed with compressed gas	NA 1955		C	2.3
4920531	Liquefied gas, toxic, n.o.s.	UN 3162			2.3
4920534	Gas sample, non-pressurized, toxic, flammable, n.o.s.	UN 3168			2.3
4920535	Parathion and Compressed gas mixture	NA 1967		C	2.3
4920536	Gas sample, non-pressurized, toxic, n.o.s.	UN 3169			2.3
4920547	Chloropicrin and Methyl Bromide mixtures	UN 1581		B	2.3
4920550	Insecticide gases, toxic, n.o.s.	UN 1967		C	2.3
4920556	Compressed Gas, toxic, n.o.s.	UN 1955		B	2.3
4920559	Carbonyl Fluoride	UN 2417		B	2.3
4920570	Compressed Gas, toxic, n.o.s.	UN 1955		B	2.3
4920571	Liquefied gas, toxic, n.o.s.	UN 3162		B	2.3
4920715	Bromine Chloride	UN 2901		B	2.3
4921000	Toxic by Inhalation liquid, n.o.s.	UN 3382	I	B	6.1
4921003	Toxic by Inhalation liquid, flammable, n.o.s.	UN 3384	I	B	6.1
4921004	Allylamine	UN 2334	I	B	6.1
4921006	Toxic by Inhalation liquid, water-reactive, n.o.s.	UN 3386	I	B	6.1
4921008	Methyl Phosphonous Dichloride	NA 2845	I	B	6.1
4921009	Chloroacetonitrile	UN 2668	II	B	6.1
4921010	Cyclohexyl Isocyanate	UN 2488	I	B	6.1
4921016	Phosphorus Trichloride	UN 1809	I	B	6.1
4921019	Allyl Alcohol	UN 1098	I	B	6.1
4921020	Ethyl Chloroformate	UN 1182	I	B	6.1
4921023	Toxic by Inhalation liquid, oxidizing, n.o.s.	UN 3388	I	B	6.1
4921024	Toxic by Inhalation liquid, corrosive, n.o.s.	UN 3390	I	B	6.1
4921027	n-Butyl Isocyanate	UN 2485	I	B	6.1
4921028	Hydrocyanic acid, aqueous solutions or Hydrogen cyanide, aqueous solutions	UN 1613	I	B	6.1
4921029	Toxic by Inhalation liquid, flammable, n.o.s.	UN 3384	I	B	6.1
4921063	Trimethylacetyl Chloride	UN 2438	I	B	6.1
4921202	Dimethylhydrazine, Unsymmetrical	UN 1163	I	B	6.1
4921207	sec-Butyl Chloroformate	NA 2742	I	B	6.1
4921211	Isobutyl Chloroformate	NA 2742	I	B	6.1
4921213	Trimethoxysilane	NA 9269	I	B	6.1
4921216	Phenyl Isocyanate	UN 2487	I	B	6.1
4921239	Hydrogen Cyanide, solution in alcohol	UN 3294	I	B	6.1
4921245	Methanesulfonyl Chloride	UN 3246	I	B	6.1
4921248	Crotonaldehyde, Stabilized	UN 1143	I	B	6.1
4921251	Dimethylhydrazine, Symmetrical	UN 2382	I	B	6.1
4921252	Isopropyl Chloroformate	UN 2407	I	B	6.1
4921254	Diketene, Stabilized	UN 2521	I	B	6.1

HMRC	Proper Shipping Name	UN/NA#	Packing Group	Hazard Zone	Hazard Class
4921255	Methyl Orthosilicate	UN 2606	I	B	6.1
4921275	Methyldichloroarsine	NA 1556	I	B	6.1
4921287	Toxic by Inhalation liquid, corrosive, n.o.s.	UN 3390	I	B	6.1
4921288	Toxic by Inhalation liquid, corrosive, n.o.s.	UN 3390	I	B	6.1
4921304	Methyl Iodide	UN 2644	I	B	6.1
4921401	Acetone Cyanohydrin, Stabilized	UN 1541	I	B	6.1
4921402	2-Chloroethanal	UN 2232	I	B	6.1
4921404	Ethyldichloroarsine	UN 1892	I	B	6.1
4921405	Dimethyl Sulfate	UN 1595	I	B	6.1
4921413	Phenyl Mercaptan	UN 2337	I	B	6.1
4921414	Chloropicrin	UN 1580	I	B	6.1
4921420	Ethylene Chlorohydrin	UN 1135	I	B	6.1
4921438	Methyl Bromide and Ethylene dibromide mixtures, liquid	UN 1647	I	B	6.1
4921473	Perchloromethyl Mercaptan	UN 1670	I	B	6.1
4921487	Methyl Isothiocyanate	UN 2477	I	B	6.1
4921495	2-Methyl-2-Heptanethiol	UN 3023	I	B	6.1
4921497	Ethylene Dibromide	UN 1605	I	B	6.1
4921558	Chloroacetone, Stabilized	UN 1695	I	B	6.1
4921587	Phenylcarbylamine Chloride	UN 1672	I	B	6.1
4921695	Methyl Phosphonic Dichloride	NA 9206	I	B	6.1
4921722	Hexachlorocyclopentadiene	UN 2646	I	B	6.1
4921727	Bromoacetone	UN 1569	II	B	6.1
4921730	n-Butyl Chloroformate	UN 2743	I	B	6.1
4921741	3, 5-Dichloro-2, 4, 6-Trifluoropyridine	NA 9264	I	B	6.1
4921742	Ethyl Phosphonous Dichloride, Anhydrous pyrophoric liquid	NA 2845	I	B	6.1
4921744	Ethyl Phosphorodichloridate	NA 2927	I	B	6.1
4921745	Ethyl Phosphonothioic Dichloride, Anhydrous	NA 2927	I	B	6.1
4921746	Chloropivaloyl Chloride	NA 9263	I	B	6.1
4921756	n-Propyl Chloroformate	UN 2740	I	B	6.1
4923113	Allyl Chloroformate	UN 1722	I	B	6.1
4923117	Chloroacetyl Chloride	UN 1752	I	B	6.1
4923209	Arsenic Trichloride	UN 1560	I	B	6.1
4923298	Thiophosgene	UN 2474	II	B	6.1
4927004	Iron Pentacarbonyl	UN 1994	I	A	6.1
4927006	Ethyleneimine, Stabilized	UN 1185	I	A	6.1
4927007	Acrolein, Stabilized	UN 1092	I	A	6.1
4927008	Methyl Chloroformate	UN 1238	I	A	6.1
4927009	Methyl Isocyanate	UN 2480	I	A	6.1
4927010	Nickel Carbonyl	UN 1259	I	A	6.1
4927011	Methylhydrazine	UN 1244	I	A	6.1
4927012	Methyl Chloromethyl Ether	UN 1239	I	A	6.1
4927014	Hydrogen Cyanide, stabilized	UN 1051	I	A	6.1
4927018	Toxic by Inhalation liquid, n.o.s.	UN 3381	I	A	6.1

HMRC	Proper Shipping Name	UN/NA#	Packing Group	Hazard Zone	Hazard Class
4927019	Toxic by Inhalation liquid, flammable, n.o.s.	UN 3383	I	A	6.1
4927022	Methyl Vinyl Ketone, Stabilized	UN 1251	I	A	6.1
4927023	Toxic by Inhalation liquid, water-reactive, n.o.s.	UN 3385	I	A	6.1
4927024	Toxic by Inhalation liquid, oxidizing, n.o.s.	UN 3387	I	A	6.1
4927025	n-Propyl Isocyanate	UN 2482	I	A	6.1
4927026	tert-Butyl Isocyanate	UN 2484	I	A	6.1
4927028	Toxic by Inhalation liquid, corrosive, n.o.s.	UN 3389	I	A	6.1
4930024	Hydrogen Fluoride, Anhydrous	UN 1052	I	C	8
4930030	Sulfuric acid, fuming	UN 1831	I	B	8
4930050	Sulfur Trioxide, Stabilized	UN 1829	I	B	8
4930204	Chlorosulfonic Acid	UN 1754	I	B	8
4930260	Sulfuryl Chloride	UN 1834	I	A	8
4931201	Nitric Acid, red fuming	UN 2032	I	B	8
4932010	Boron Tribromide	UN 2692	I	B	8
4932352	Phosphorus Oxychloride	UN 1810	II	B	8
4932385	Titanium Tetrachloride	UN 1838	II	B	8
4933327	Ethyl Chlorothioformate	UN 2826	II	B	8
4935231	Trichloroacetyl Chloride	UN 2442	II	B	8
4936106	Bromine Solutions	UN 1744	I	B	8
4936110	Bromine or Bromine Solutions	UN 1744	I	A	8

**Appendix C**  
**Environmentally Sensitive Chemicals**  
**March 15, 2010**

<b>Proper Shipping Name</b>	<b>Hazmat STCC</b>
Allyl Chloride	4907412
Carbon Tetrachloride	4821831 / 4860106 / 4921830 / 4921831 / 4960115
Chlorobenzene	4909153
Chloroform	4921767 / 4921769 / 4925224 / 4925225
o-Dichlorobenzene	4915132 / 4925203
Dichloropropane (Propylene dichloride)	4909265
Dichloropropane/Dichloropropene mixture	4910234
Dichloropropene	4909255
Ethyl Chloride	4905712 / 4908129 / 4908162 /
Ethylene Dibromide (already listed as PIH)	
Ethylene Dibromide and Methyl Bromide Mixtures (already listed as PIH)	
Ethylene Dichloride	4909166 / 4912081 / 4908129 / 4910437 / 4913242 / 4913295 / 4921030
Epichlorohydrin	4921005
Methyl Chloroform (1,1,1 Trichloroethane)	4825182 / 4925182 / 4910463 / 4910475 / 4925310 / 4960205
Methylene Chloride (Dichloromethane)	4925131 / 4905764
Methylene chloride/chloroform mixture	4960150
Perchloroethylene (Tetrachloroethylene)	4825202 / 4910134 / 4925202
Perchloroethylene/Trichloroethylene mixture	4940373
Trichloroethylene	4825181 / 4925181

**Appendix D**  
**Time Sensitive Materials**  
**July 17, 2006**

<b>Proper Shipping Name</b>	<b>Haz Mat STCC</b>
<b>20 Day</b>	
Ethylene, refrigerated liquid	4905735
Hydrogen, refrigerated liquid	4905745
Vinyl Fluoride, stabilized	4905793
Chloroprene, stabilized	4907223
Flammable Liquid, n.o.s. (Methyl Methacrylate Monomer, uninhibited)	4907255
Hydrogen chloride, refrigerated liquid	4920504
<b>30 day</b>	
Styrene monomer, stabilized	4907265
Flammable Liquid, n.o.s. (Recycled styrene)	4910159
Styrene monomer, stabilized	4907235

**Appendix E**  
**Spent Nuclear Fuel (SNF) and High Level Radioactive Waste (HLRW)**  
**March 17, 2009**

<b>HMRC</b>	<b>Proper Shipping Description</b>
4929142	Radioactive Material, Type B(U) Package, Fissile
4929143	Radioactive Material, Type B(M) Package, Fissile
4929144	Radioactive Material, Transported Under Special Arrangement, Fissile
4929147	Radioactive Material, Transported Under Special Arrangement

**Appendix F to  
Circular OT-55**

**Sample Request for Hazardous Materials Commodity Flow Information**

**March 1, 2005**

[Company LOGO]

Request for Hazardous Materials COMMODITY FLOW INFORMATION

Organization Requesting Information: \_\_\_\_\_

Contact Person: \_\_\_\_\_

Phone Number: \_\_\_\_\_

Email Address: \_\_\_\_\_

Mailing Address: \_\_\_\_\_  
(Street Address)

\_\_\_\_\_  
(City, State, Zip)

Geographical Description of Area for study: \_\_\_\_\_

\_\_\_\_\_

Preferred method to receive report:  Email  U.S. Mail (Mark One)

By signing below I acknowledge and agree to the terms set forth by [RAILROAD NAME] for use and dissemination of the [RAILROAD'S] Hazardous Materials Commodity Flow Information . [RAILROAD'S NAME] considers this information to be restricted information of a security sensitive nature. I thus affirm and agree that the information provided by [RAILROAD NAME] in this report will be used solely for and by bona fide emergency planning and response organizations for the expressed purpose of emergency and contingency planning. This information will not be distributed publicly in whole or in part without the expressed written permission of [RAILROAD NAME].

\_\_\_\_\_  
(Signature of person requesting commodity flow information)

**Return Completed Form to: [INSERT RAILROAD NAME AND ADDRESS]**

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For [RAILROAD] Use Only

[PERSON RESPONSIBLE FOR APPROVAL]: \_\_\_ Yes \_\_\_ NO Date: \_\_\_\_\_

Hazardous Materials Service Support:

Date Request Received: \_\_\_\_\_

Time Period Covered: \_\_\_\_\_

Date Report Sent: \_\_\_\_\_

Report sent via:  Email  U.S. Mail