

ILLINOIS COMMERCE COMMISSION



2019 ANNUAL REPORT ON ACCIDENTS/INCIDENTS Involving Hazardous Materials on Railroads in Illinois





STATE OF ILLINOIS

ILLINOIS COMMERCE COMMISSION

527 East Capitol Avenue
Springfield, Illinois 62701

160 North LaSalle
Chicago, Illinois 60601

April 1, 2020

The Honorable JB Pritzker
Governor

The Honorable Don Harmon
Senate President

The Honorable Michael J. Madigan
Speaker of the House

The Honorable William E. Brady
Senate Republican Leader

The Honorable James B. Durkin
House Republican Leader

RE: FY 2021-2025 Crossing Safety Improvement Program 5-Year Plan

Annual Report on Railway Accidents/Incidents Involving Hazardous Material

Dear Governor Pritzker and Members of the Legislative Leadership:

Pursuant to 35 ILCS 505/8(c) and 625 ILCS 5/18c-1204(3), the Illinois Commerce Commission is pleased to announce the *FY 2021-2025 Crossing Safety Improvement Program 5-Year Plan*, and to provide the *Annual Report on Railway Accidents/Incidents Involving Hazardous Material on Railroads in Illinois (2019)*. The Plan outlines safety improvements at highway-rail grade crossings and bridges located on local roads and streets throughout the State of Illinois.

The Commission Plan seeks to authorize over \$315 million from the Grade Crossing Protection Fund for new grade crossing safety improvements and highway-rail grade separations over the course of this five-year horizon at over 1,400 crossing locations. With the availability of Local and Railroad funding matches, this includes:

- 23 new or reconstructed highway-rail grade separations;
- 4 new pedestrian-rail grade separations;
- 330 at-grade crossings with upgrades to warning devices; and
- 1000 crossings with low-cost improvements

As always, the Commission's goal is to maximize the use of the Grade Crossing Protection Fund to achieve the greatest amount of public safety per dollar spent. Should you have questions, or need clarification about any of the information presented, please contact Michelle Kelm, Director of Governmental Affairs, at (217) 524-0619.

Sincerely,

A handwritten signature in blue ink, appearing to read "Carrie Zalewski".

Carrie Zalewski
Chairman

Table of Contents

<u>Section</u>	<u>Page</u>
1.0 Introduction	1
2.0 Background	1
3.0 Commission Hazardous Materials Safety Program	2
3.1 Inspection of Rail Equipment and Shipper/Consignee Facilities	3
3.1.1 Railroad Equipment	3
3.1.2 Roll-By	3
3.1.3 Documentation	3
3.1.4 Shipping Facilities	4
3.2 Technical Assistance Program to Interested Parties	4
3.3 Escort of Nuclear Material in Illinois	4
3.4 Education and Outreach Activities	5
4.0 Commission Hazardous Material Program Activity in 2019	5
5.0 Summary	6
6.0 Data Describing Accidents/Incidents in Illinois in 2019	6
A. Derailments That Resulted in Hazardous Material Release	7
B. Derailments in Which No Hazardous Material Was Released	8
C. Hazardous Materials Released, But No Derailment Occurred	9
D. List of Railroads Cited in Preceding Tables	11
List of Attachments	11
References	11

Attachments

1. Recognizing and Identifying Hazardous Material
2. Sample Waybill
3. Sample Train Consist
4. Emergency Response Information
5. Sample Bill of Lading
6. Top 125 Commodities

1. INTRODUCTION

This report has been prepared by the staff of the Illinois Commerce Commission's Railroad Safety Section in accordance with the provisions of 625 ILCS 5/18c-1204. The law directs the Illinois Commerce Commission (ICC) to "*prepare and distribute to the General Assembly ... a report on railway accidents in Illinois which involve hazardous materials.*" The law also provides that "*the report shall include the location, substance involved, amounts involved, and the suspected reason for each accident,*" as well as "*the rail line and point of origin of the hazardous material involved in each accident.*"

Additionally, this report contains the following related information:

- Details regarding events where hazardous material was involved, but no release occurred;
- An overview of Commission activities relative to the transportation of hazardous materials by rail within the State;
- Review of the transportation of nuclear and radioactive materials by rail within the State.

2. BACKGROUND

Illinois is a key hub in the nation's transportation system. With a railroad network of approximately 7,400 miles, Illinois' rail system is the country's second largest. The Chicago and St. Louis terminal switching districts are the two key points of interchange between eastern, western, northern, and southern rail systems and handle over 40,000 rail cars on a typical weekday.

According to the Association of American Railroads (AAR), in 2017, approximately 7.9 percent of all rail traffic involved the movement of hazardous materials⁽¹⁾. In 2017 (latest year for which data is available), railroads in Illinois originated 122.1 million tons of total freight and 4,028,000 carloads of freight⁽²⁾. Of this total, railroads in Illinois handled approximately 9.6 million tons of hazardous materials (or 318,275 carloads).

The U.S. Department of Transportation (USDOT) classifies approximately 3,500 substances as hazardous⁽³⁾. Many of these substances, ranging from mild irritants to poisonous and radioactive materials, are routinely transported by rail through populous regions of the country and can have the potential to severely impact the environment and public health, if inadvertently released into the environment. Individual shipments can range in quantity from packages as small as a pint that may be carried inside a highway trailer or container on a flat car, to as much as 42,000 liquid gallons carried in a tank car.

[^{1,2,3}Note: See page 12 for References]

Under federal law (49 CFR Part 212) individual states are authorized to participate in the Railroad Hazardous Material Inspection Program administered by the USDOT. The program is under the supervision of the Federal Railroad Administration (FRA). FRA certifies state inspectors so that they may have the same legal and administrative authority as federal inspectors in assuring the safe transport of hazardous material through inspection and investigation. The ICC currently has two full-time federally certified Hazardous Material inspector positions responsible for all of Illinois.

The ICC Hazardous Material (HM) inspectors focus the majority of their efforts in the field conducting inspections at railroad yards and the industrial facilities of shippers and consignees of hazardous materials. The inspectors are also responsible for maintaining inspection data, responding to complaints from rail employees and the public, and for providing information concerning the transport of hazardous material within Illinois to other state, regional and local agencies.

In 2019, the ICC HM inspectors inspected 8,355 rail cars. Since 1981, when three ICC HM inspectors found violations in 12 percent of all inspections, compliance has improved to the point that inspectors found violations in only 1.1 percent of all inspections in 2019.

The large increase in compliance observed since 1981, is due in part to ICC-initiated conferences with rail carriers and shippers to educate and inform them of the complex and continually evolving regulations. The educational meetings and informational sessions are followed up with inspections by ICC staff to insure that the lessons learned from the education and information sessions, have been implemented by the shipper or rail carrier in their day-to-day activities.

3. ILLINOIS COMMERCE COMMISSION HAZARDOUS MATERIALS SAFETY PROGRAM

The ICC's Hazardous Materials Safety Program is comprised of four main components:

- Inspection of railroad equipment and shipper/consignee facilities;
- The provision of technical assistance to shippers/consignees and rail carriers;
- The inspection and escort of nuclear materials; and
- Education and outreach activities to shippers/consignees, rail carriers, emergency responders and the general public.

3.1 Inspection of Rail Equipment and Shipper/Consignee Facilities

Four types of inspections are made by ICC HM inspectors: stationary railroad equipment such as tank cars at a yard or plant; railroad equipment in transit in the consist of a through or yard train known as a “roll-by” inspection; analysis of shipping papers and related documentation; and inspection of facilities that either ship or receive hazardous commodities.

3.1.1 Railroad Equipment

Hazardous material equipment inspections are performed on a stationary hazardous material rail car. Normally, this type of inspection occurs within a railroad yard or at the loading or unloading terminal within a shipper’s facility. The inspection assures that the cars are affixed with the required placards identifying the hazardous commodities being transported. Attachment 1 provides examples of the various placards and the information they provide, which is of critical importance to emergency response personnel. The ICC HM inspectors verify that the rail car’s markings, stenciling, tank and valve test dates, and mechanical safety features are in compliance with federal regulations.

3.1.2 Roll-By

A roll-by inspection involves monitoring an entire train while in motion. The location of loaded hazardous material cars, as well as those cars that have been unloaded, but that still contain residue of the commodity transported, are observed in relation to the locomotives, occupied cabooses, other hazardous material cars, and certain other types of cargo cars. Specific types of hazardous material cars are required to be spotted at particular locations within a train. Should the ICC HM inspectors determine that cars are not correctly located within the train’s consist, they may require the rail carrier to stop the train and order the cars to be correctly placed.

Proper placement of hazardous material cars within a train’s consist is of great importance to the train crew who could be severely injured if a derailment were to occur. For example, hazardous material cars containing liquefied petroleum gas (LPG), as well as other highly flammable commodities, may not be positioned next to the locomotive.

3.1.3 Documentation

Documentation inspections involve examining waybills and bills of lading to verify that the documents were completed correctly. Such inspections normally occur at the office of the shipper or consignee, or at the yard office of the rail carrier. The bill of lading is a document providing a description of the type and quantity of commodities being transported. Attachment 5 provides a sample bill of lading.

The bill of lading must include a 24-hour emergency response telephone number

clearly visible, in order to facilitate the appropriate response by emergency providers in case of an accident or derailment. The ICC HM inspectors examines the bill of lading to verify that the correct shipping name, hazard class, 4-digit commodity identification number, and weight are all present and correctly stated.

Emergency responders rely on the provision of this shipping information in the case of a spill or other type of incident concerning the shipment. Depending upon the particular substance being transported; incorrect or incomplete information, can result in injury or death to responders, rail employees and the public in the event of a derailment that could cause an inadvertent release.

3.1.4 Shipping Facilities

Shipping facility inspections are conducted at privately owned facilities. The purpose of the inspection is to assure that the requirements of Title 49 of the United States Code of Federal Regulations (CFR) are being complied with in order to permit the continued ability of the shipper or consignee to receive or ship hazardous materials.

3.2 Technical Assistance Program to Shippers, Consignees and Emergency Responders

ICC HM inspectors respond to railroad related collisions/incidents involving hazardous material. The Commission's role is to provide technical assistance to emergency response personnel. The assistance provided is that of determining if the documentation and information provided by the rail carrier or shipper to the emergency responder, is correct and adequate to permit the responder to safely handle the incident. The ICC HM inspectors will also advise the emergency response team as to proper mitigation and clean up procedures and requirements. The ICC HM inspectors assist in investigation of the incident in order to identify the cause, as well as any violations that may have contributed either directly, or indirectly in causing the incident. The ICC HM inspectors are on-call 24-hours a day to respond to any incident.

3.3 Escort of Nuclear Material in Illinois

The movement of nuclear material in or through the State of Illinois by rail occurs infrequently. The current protocol for the shipment of nuclear material requires that the train be stopped and inspected prior to entering Illinois. When they do occur, nuclear material shipments will be escorted by the ICC HM inspectors, as well as the ICC track inspectors, who verify that the rail line to be traveled is in suitable condition.

Radioactive material is probably the most controversial and least understood class of hazardous material being transported by rail in Illinois today. To date, there have been no incidents involving the transport of radioactive material; however, widespread concern

on the part of the public due to safety and security issues, warrant the careful planning and inspection of all radioactive shipments traveling over the Illinois rail network.

3.4 Education and Outreach Activities

According to 625 ILCS 5/18c-7404, ICC inspectors offer training for local law enforcement and emergency response personnel. The training is intended to acquaint participants with railroad car marking and placarding requirements and emergency response manuals and guide books. Fire departments are provided with instruction and training concerning tank car structure and damage assessment. The ICC HM inspectors also make presentations on the interpretation and application of federal and state hazardous materials regulations to railroad company personnel. Since 1990, over 100 educational or training presentations on hazardous material safety have been made to over 2,000 persons affiliated with a variety of emergency planning and response teams.

4. ILLINOIS COMMERCE COMMISSION HAZARDOUS MATERIAL SAFETY PROGRAM ACTIVITY IN 2019

Summary of Inspections Conducted by ICC HM Inspectors: 2010 through 2019. (Source: ICC)

Year	Inspections	Units Inspected	Defects Identified	Defects per Unit
2010	249	15,743	269	0.017
2011	259	15,779	257	0.016
2012	264	16,720	208	0.012
2013	148	11,005	206	0.019
2014	142	10,186	199	0.020
2015	127	8,065	195	0.024
2016	268	16,294	361	0.022
2017	295	18,223	331	0.018
2018	303	17,209	270	0.016
2019	215	8,355	90	0.011
Total	2,270	137,579	2,386	0.017

[Note: Inspection Numbers reflect 2 ICC HM Inspectors 2006-2012; 1 ICC HM Inspector in 2013-2015¹; ¹² ICC HM Inspectors for the last 4 months of 2015; 2 ICC HM Inspectors in 2016, 2017 and 2018 and 1 in 2019]

5. SUMMARY

The nature of catastrophic incidents that can occur from hazardous material incidents is cause for prudent exercise of state and federal regulations and the necessity of having staff to assure compliance with all applicable regulations. ICC inspectors routinely discover minor violations and defects, and occasionally major violations or defects that if not corrected, could lead to serious incidents likely to result in loss of life and extensive damage to property.

6. DATA DESCRIBING ACCIDENTS AND/OR INCIDENTS IN ILLINOIS IN 2019

Specific data required by 625 ILCS 5/18c-1204 is shown in tabular form on the following pages. The applicable section states: *“The staff shall prepare and distribute to the General Assembly, in April of each year, a report on railway accidents in Illinois which involve hazardous material. The report shall include the location, substance involved, quantity involved, and the suspected reason for each accident. The report shall also reveal the rail line and point of origin of the hazardous material involved in each accident.”*

The remainder of this report provides three tables and a number of attachments.

Table A shows railroad derailments where hazardous material was being transported in the derailed railroad equipment and a hazardous material release occurred.

Table B shows railroad derailments where hazardous material was being transported in the train and the railroad equipment derailed; however, there was no release of any hazardous material.

Table C shows hazardous material releases from railroad equipment where no derailment was involved.

Summary of Hazardous Material Related Incidents: 2010 – 2019.

Type of Incident	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
A. Hazardous Materials Physically Involved in Derailment and Hazardous Materials Release Occurred	3	8	4	5	2	4	4	2	1	6
B. Hazardous Materials Physically Involved in Derailment Where No Hazardous Materials Release Occurred	20	10	13	23	36	27	14	14	8	6
C. Hazardous Materials Released From Rail Cars Where No Derailment Occurred	80	60	74	82	84	69	65	69	55	33
Total	103	78	91	110	122	100	83	85	64	45

Information for Tables A, B and C was obtained from reports filed by the railroads with the Commission, as well as from the USDOT's Research and Innovative Technology Administration.

Three categories of information contained in this report not specifically required by law have been added to make the report more useful. The first category is "Amount Released." This distinction is important in order to differentiate the "Amount Involved" required by the General Assembly, from the more significant quantity of "Amount Released." The "Amount Involved" is simply the quantity of commodity that was being transported; the "Amount Released" into the environment by accident is far more critical.

The second category added is the "Type of Equipment" involved. The final additional category is the date of the incident. In the tables, the railroad companies are identified by their FRA reporting marks; for example NS is the Norfolk Southern Railway. A listing of the complete names is provided in Table D.

Table A. Hazardous Materials Physically Involved in a Derailment and a Hazardous Materials Release Occurred.

City	County	Railroad Involved	Substance Involved	Point of Origin	Suspected Reason for Incident	Amount Involved	Amount Released	Type of Equipment	Date
Chicago	Cook	UP	Diesel	Chicago, IL.	Derailment	4000 gals.	800 gals.	Locomotive	1/30/2019
Sparta	Randolph	UP	Diesel	Sparta, IL.	Defective Fuel Line	5,000 gals.	500 gals.	Locomotive	2/7/2019
Joliet	Will	BNSF	Styrene	Texas City, TX.	Puncture	30,040 gals.	14,000 gals.	Tank Car	2/8/2019
Bedford Park	Cook	BRC	Diesel	Bedford Park, IL.	Puncture	4,000 gals.	2,000 gals.	Locomotive	5/10/2019
Bensenville	Cook	CP	Diesel	Bensenville, IL.	Sidesw ipe	4,000 gals.	2,100 gals.	Locomotive	8/8/2019
Dupo	St. Clair	UP	Isobutyl Ketone	Deer Park, IL.	Puncture To Tank Shell	24,375 gals.	18,750 gals.	Tank Car	9/10/2019

Table B. Hazardous Materials Physically Involved in a Derailment Where No Hazardous Materials Release Occurred.

City	County	Railroad Involved	Substance Involved	Point of Origin	Suspected Reason for Incident	Amount Involved	Amount Released	Type of Equipment	Date
Adair	McDonough	BNSF	Isobutylene	Pasadena, TX.	Derailment	33,711 gals. ; 25,673 gals.	None	Tank Cars (2)	1/13/2019
Berkley	Cook	UP	Diesel	Berkley, IL.	Derailment	4,000 gals.	None	Locomotive	3/16/2019
Bedford Park	Cook	BRC	Benzoanthracene	Unknown	Derailment	Unknown	None	Tank Cars (2)	6/9/2019
Dolton	Cook	UP	Sodium Hydroxide Solution	Unknown	Derailment	Unknown	None	Tank Car	7/22/2019
Dolton	Cook	UP	Propylene Oxide	Unknown	Derailment	Unknown	None	Tank Car	7/22/2019
East Peoria	Peoria	TPW	Diesel	East Peoria, IL.	Derailment	4,000 gals.	None	Locomotive	12/9/2019

Table C. Hazardous Materials Released From Rail Cars Where No Derailment Occurred.

City	County	Railroad Involved	Substance Involved	Point of Origin	Suspected Reason for Incident	Amount Involved	Amount Released	Type of Equipment	Date
Decatur	Macon	NS	Diesel	Decatur, IL.	Defective Fuel Line	4,000 gals.	3 gals.	Locomotive	1/25/2019
Chicago	Cook	NS	Diesel	Chicago, IL.	Overfill	4,000 gals.	150 gals.	Locomotive	2/25/2019
Melrose Park	Cook	UP	Diesel	Hammond, IN.	Manway Bolts Loose	31,800 gals.	Vapor	Tank Car	2/15/2019
Bedford Park	Cook	CSX	Corrosive Liquid	Schiller Park, IL.	Unknown	330 gals.	285 gals.	Portable Tank	3/5/2019
East St. Louis	St. Clair	CSX	Tripropylene	Deer Park, IL.	Liquid Line Open	31,800 gals.	1 gal.	Tank Car	3/10/2019
Galesburg	Knox	BNSF	Butyraldehyde	Bay City, TX.	Packing Gland Nut Loose	30,126 gals.	1 gal.	Tank Car	3/10/2019
Burnham	Cook	IHB	Diesel	Burnham, IL.	Ruptured Fuel Tank	4,000 gals.	600 gals.	Locomotive	4/3/2019
East St. Louis	St. Clair	ALS	Environmentally Hazardous Liquid	East St. Louis, IL.	Manway Bolts Loose	23,850 gals.	3 gals.	Tank Car	4/3/2019
Roxana	Madison	NS	Sulfuric Acid	Unknown	Ruptured Frangible Disc	13,975 gals.	Minimal	Tank Car	4/4/2019
Chicago	Cook	Metra	Diesel	Chicago, IL.	Operator Error	4,000 gals.	300 gals.	Locomotive	4/11/2019
Franklin Park	Cook	CP	Diesel	Franklin Park, IL.	Ruptured Fuel Line	4,000 gals.	8 gals.	Locomotive	4/15/2019
Urbana	Champaign	CN	Coal Tar Distillates	Cicero, IL.	Manway Bolts Loose	23,698 gals.	1 gal.	Tank Car	4/26/2019
Granite City	Madison	NS	Ammonium Nitrate	Unknown	Unknown	Unknown	200 lbs.	Hopper Car	5/1/2019
Hodgkins	Cook	BNSF	Molten Sulfur	Lemont, IL.	Ruptured Frangible Disc	25,000 gals.	None	Tank Car	5/8/2019
East St. Louis	St. Clair	ALS	Diesel	East St. Louis, IL.	Operator Error	4,000 gals.	100 gals.	Locomotive	5/27/2019
Chicago	Cook	BNSF	Amines, Liquid, Corrosive	Houston, TX.	Pierced Drum	55 gals.	1 gal.	Container on Flatcar	6/4/2019
Decatur	Macon	CN	Sulfuric Acid	Unknown	Valve Flange Corrosion	13,803 gals.	1 gal.	Tank Car	6/28/2019
East St. Louis	St. Clair	ALS	Liquefied Petroleum Gas	Unknown	Valve open	Unknown	Vapor	Tank Car	7/2/2019
Galesburg	Knox	BNSF	Liquefied Petroleum Gas	Unknown	Overload	Unknown	20 gals.	Tank Car	7/2/2019
East St. Louis	St. Clair	ALS	Styrene Monomer	St. James, LA.	Loose Flange Bolts	30,080 gals.	None	Tank Car	8/7/2019
Galesburg	Knox	BNSF	Flammable Liquid	Unknown	Loose Manway Bolts	24,800 gals.	1 gal.	Tank Car	8/14/2019
East St. Louis	St. Clair	ALS	Hydrogen Peroxide	Unknown	Defective Gasket	25,900 gals.	1 gal.	Tank Car	8/16/2019

City	County	Railroad Involved	Substance Involved	Point of Origin	Suspected Reason for Incident	Amount Involved	Amount Released	Type of Equipment	Date
East St. Louis	St. Clair	ALS	Styrene Monomer	St. James, LA.	Vapor Valve Loose	Unknown	10 gals.	Tank Car	8/26/2019
Elburn	Kane	UP	Diesel	Elburn, IL.	Operator Error	4,000 gals.	650 gals.	Tank Car	9/4/2019
Cicero	Cook	CN	Temperature Liquid	Argo, IL.	Loose Manway Bolts	23,600 gals.	1 gal.	Tank Car	9/18/2019
Galesburg	Knox	BNSF	Diesel	Galesburg, IL.	Vent Valve Failure	4,000 gals.	300 gals.	Locomotive	9/28/2019
Gorham	Jackson	UP	Diesel	Gorham, IL.	Unknown	4,000 gals.	2 gals.	Locomotive	10/7/2019
East St. Louis	St. Clair	ALS	Phosphoric Acid Solution	Aurora, IL.	Tank Lining Failure	15,479 gals.	150 gals.	Tank Car	10/7/2019
Dupo	St. Clair	UP	Methylene Diphenyl Diisocyanate	Unknown	Loading Error	13,410 gals.	10 gals.	Tank Car	10/15/2019
Joliet	Will	BNSF	Liquefied Petroleum Gas	Lumberton, NC.	Liquid Valve Open	33,960 gals.	1 gal.	Tank Car	10/17/2019
Hodgkins	Cook	BNSF	Flammable Liquids	Brandenburg, KY.	Loose Manway Bolts	25,400 gals.	2 gals.	Tank Car	11/6/2019
Alton	Madison	NS	Liquefied Petroleum Gas	Marcus Hook, PA.	Vapor Valve Plug Loose	4,532 gals.	1 gal.	Tank Car	11/18/2019
Galesburg	Knox	BNSF	Styrene Monomer	Texas City, TX.	Bottom Outlet Valve Loose	26,300 gals.	Minimal	Tank Car	12/5/2019

Table D. Railroad Companies Cited In The Preceding Tables.

Railroad		Incidents
ALS	Alton & Southern Railroad	7
BNSF	BNSF Railway	11
BRC	Belt Railway Co. of Chicago	2
CN	Canadian National Railroad	3
CP	Canadian Pacific Railway	2
CSX	CSX Transportation, Inc.	2
IHB	Indiana Harbor Belt Railroad	1
NIRC	Northeastern Illinois Commuter Rail Corp.	1
NS	Norfolk Southern Railway	5
TPW	Toledo Peoria & Western Railroad	1
UP	Union Pacific Railroad	10
Total		45

List of Attachments.

- Attachment 1: Recognizing and Identifying Hazardous Materials
- Attachment 2: Sample Waybill
- Attachment 3: Sample Consist
- Attachment 4: Emergency Response Information
- Attachment 5: Sample Bill of Lading
- Attachment 6: Top 125 Hazardous Commodities

References.

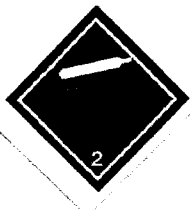
1. Association of American Railroads; *Railroads: Moving America Safely*. Washington, D.C., October 2018. <https://www.aar.org/wp-content/uploads/2018/05/AAR-Railroads-Moving-America-Safely.pdf>. Retrieved February 6, 2019.
2. Association of American Railroads. *Freight Railroads in Illinois*. Washington, D.C., December 2018. <https://www.aar.org/wp-content/uploads/2019/01/AAR-Illinois-State-Fact-Sheet.pdf>. Retrieved February 6, 2019.
3. Pipeline and Hazardous Materials Safety Administration. *2008 Emergency Response Guidebook*. U.S. Department of Transportation, Washington, D.C., Revised February 2009.

Recognizing and Identifying Hazardous Materials

Placards and Label Notes

Placards are diamond shaped – 10 ¾ inches square. The placard provides recognition information in a number of ways:

1. The colored background;
2. The symbol at the top;
3. The United nations hazard class number at the bottom; and
4. The hazard class wording or the identification number in the center.
 - a. Color:
 - Orange indicates explosive;
 - Red indicates flammable;
 - Green indicates nonflammable;
 - Yellow indicates oxidizing material;
 - White indicates poisonous material;
 - White with vertical red stripes indicates flammable solid;
 - Yellow over white indicates radioactive material; and
 - White over black indicates corrosive material.
 - b. Symbols:
 - The bursting ball symbol indicates explosive;
 - The flame symbol indicates flammable;
 - The slashed W indicates dangerous when wet;
 - The skull and crossbones indicates poisonous material;
 - The circle with the flame indicates oxidizing material;
 - The cylinder indicates nonflammable gas;
 - The propeller indicates radioactive;
 - The test tube/hand/metal symbol indicates corrosive; and
 - The word Empty indicates that the product has been removed, but a harmful residue may still be present.
 - c. United Nations Hazard Class Numbers:
 1. Explosives
 2. Gases
 3. Flammable Liquids
 4. Flammable Solids
 5. Oxidizing Substances
 6. Poisonous and Infectious Substances
 7. Radioactive Substances
 8. Corrosive Substances
 9. Miscellaneous Dangerous Substances
 - d. Hazard Class or Identification Number – Examples below.



SAMPLE WAYBILL

Attachment 2

Page 1 of 2

* Hazardous Materials *

RTMX 21065 T/C

#123456

1/10/16

St. Louis MO.

1212 St. Louis, MO.
12 S. Street
John Doe Inc.

John Doe Inc.
Chicago, IL.

1 T/C

Residue: Last Contained

UN 1090

Acetone

3//PG II

RQ (Acetone)

Emergency Contact:

Chemtrec – 1-800-424-9300

STCC 4908105

SAMPLE WAYBILL

Attachment 2

Page 2 of 2

* Hazardous Materials *

GAPX 6075 T/C

#123457

1/10/16

St. Louis MO.

1212 St. Louis, MO.

12 S. Street

John Doe Inc.

John Doe Inc.

Chicago, IL.

1 T/C 20,000 Gals.

UN 2312

Phenol, Molten

6.1//PG II

RQ (Phenol)

Emergency Contact:

Chemtrec – 1-800-424-9300

STCC 4921220

Sample Consist

Attachment 3

Train/Job	Conductor
Name	Category – Secondary Manifest Type-Thru

Engine – Ident	Horsepower	Length	Weight Status
6142	3000	69	200E
1001	3000	74	200E
1005	3000	74	200E
Total	9000 HP	217 Feet	600 Tons

Train/Job	SEQ Equipment ID	KND	GWT	COMDTY	CITY/STATE	CONSIGNEE
	BLOCK					
	1 BJOX 278	LC4T	131	Corn	Memphis, TN	
	2 BJOX 109	LC4T	131	Corn	Memphis, TN	
	3 BJOX 110	LC4T	131	Corn	Memphis, TN	
	4 CRDX 7227	LC4T	131	Corn	Memphis, TN	
	5 RTMX 21065	ET29	35		Chicago, IL	
	R50 SPEED RESTRICTED CAR					

 * Hazardous Materials *

1/TC
 Residue: Last Contained
 UN 1090
 Acetone
 3//PG II
 RQ (Acetone)
 Emergency Contact: Chemtrec 1-800-424-9300
 STCC 4908105

6 GAPX 6075	LT19	38	POIS B	Chicago, IL.
R50 SPEED RESTRICTED CAR				

 * Hazardous Materials *

1/TC
 UN 2312
 Phenol, Molten
 6.1//PG II
 RQ (Phenol)
 Emergency Contact: Chemtrec 1-800-424-9300
 STCC 4921220

POTENTIAL HAZARDS

FIRE OR EXPLOSION

- **HIGHLY FLAMMABLE:** Will be easily ignited by heat, sparks or flames.
- Vapors may form explosive mixtures with air.
- Vapors may travel to source of ignition and flash back.
- Most vapors are heavier than air. They will spread along ground and collect in low or confined areas (sewers, basements, tanks).
- Vapor explosion hazard indoors, outdoors or in sewers.
- Those substances designated with a **(P)** may polymerize explosively when heated or involved in a fire.
- Runoff to sewer may create fire or explosion hazard.
- Containers may explode when heated.
- Many liquids are lighter than water.

HEALTH

- Inhalation or contact with material may irritate or burn skin and eyes.
- Fire may produce irritating, corrosive and/or toxic gases.
- Vapors may cause dizziness or suffocation.
- Runoff from fire control may cause pollution.

PUBLIC SAFETY

- **CALL EMERGENCY RESPONSE Telephone Number on Shipping Paper first. If Shipping Paper not available or no answer, refer to appropriate telephone number listed on the inside back cover.**
- As an immediate precautionary measure, isolate spill or leak area for at least 50 meters (150 feet) in all directions.
- Keep unauthorized personnel away.
- Stay upwind, uphill and/or upstream.
- Ventilate closed spaces before entering.

PROTECTIVE CLOTHING

- Wear positive pressure self-contained breathing apparatus (SCBA).
- Structural firefighters' protective clothing will only provide limited protection.

EVACUATION

Large Spill

- Consider initial downwind evacuation for at least 300 meters (1000 feet).

Fire

- If tank, rail car or tank truck is involved in a fire, ISOLATE for 800 meters (1/2 mile) in all directions; also, consider initial evacuation for 800 meters (1/2 mile) in all directions.



In Canada, an Emergency Response Assistance Plan (ERAP) may be required for this product. Please consult the shipping document and/or the ERAP Program Section (page 391).

EMERGENCY RESPONSE

FIRE

CAUTION: All these products have a very low flash point: Use of water spray when fighting fire may be inefficient.

CAUTION: For fire involving UN1170, UN1987 or UN3475, alcohol-resistant foam should be used.

Small Fire

- Dry chemical, CO₂, water spray or alcohol-resistant foam.

Large Fire

- Water spray, fog or alcohol-resistant foam.
- **Do not use straight streams.**
- Move containers from fire area if you can do it without risk.

Fire involving Tanks or Car/Trailer Loads

- Fight fire from maximum distance or use unmanned hose holders or monitor nozzles.
- Cool containers with flooding quantities of water until well after fire is out.
- Withdraw immediately in case of rising sound from venting safety devices or discoloration of tank.
- ALWAYS stay away from tanks engulfed in fire.
- For massive fire, use unmanned hose holders or monitor nozzles; if this is impossible, withdraw from area and let fire burn.

SPILL OR LEAK

- ELIMINATE all ignition sources (no smoking, flares, sparks or flames in immediate area).
- All equipment used when handling the product must be grounded.
- Do not touch or walk through spilled material.
- Stop leak if you can do it without risk.
- Prevent entry into waterways, sewers, basements or confined areas.
- A vapor-suppressing foam may be used to reduce vapors.
- Absorb or cover with dry earth, sand or other non-combustible material and transfer to containers.
- Use clean, non-sparking tools to collect absorbed material.

Large Spill

- Dike far ahead of liquid spill for later disposal.
- Water spray may reduce vapor, but may not prevent ignition in closed spaces.

FIRST AID

- Ensure that medical personnel are aware of the material(s) involved and take precautions to protect themselves.
- Move victim to fresh air.
- Call 911 or emergency medical service.
- Give artificial respiration if victim is not breathing.
- Administer oxygen if breathing is difficult.
- Remove and isolate contaminated clothing and shoes.
- In case of contact with substance, immediately flush skin or eyes with running water for at least 20 minutes.
- Wash skin with soap and water.
- In case of burns, immediately cool affected skin for as long as possible with cold water. Do not remove clothing if adhering to skin.
- Keep victim calm and warm.

GUIDE 153 SUBSTANCES - TOXIC AND/OR CORROSIVE (COMBUSTIBLE)

POTENTIAL HAZARDS

HEALTH

- **TOXIC**; inhalation, ingestion or skin contact with material may cause severe injury or death.
- Contact with molten substance may cause severe burns to skin and eyes.
- Avoid any skin contact.
- Effects of contact or inhalation may be delayed.
- Fire may produce irritating, corrosive and/or toxic gases.
- Runoff from fire control or dilution water may be corrosive and/or toxic and cause pollution.

FIRE OR EXPLOSION

- Combustible material: may burn but does not ignite readily.
- When heated, vapors may form explosive mixtures with air: indoors, outdoors and sewers explosion hazards.
- Those substances designated with a **(P)** may polymerize explosively when heated or involved in a fire.
- Contact with metals may evolve flammable hydrogen gas.
- Containers may explode when heated.
- Runoff may pollute waterways.
- Substance may be transported in a molten form.

PUBLIC SAFETY

- **CALL EMERGENCY RESPONSE Telephone Number on Shipping Paper first. If Shipping Paper not available or no answer, refer to appropriate telephone number listed on the inside back cover.**
- As an immediate precautionary measure, isolate spill or leak area in all directions for at least 50 meters (150 feet) for liquids and at least 25 meters (75 feet) for solids.
- Keep unauthorized personnel away.
- Stay upwind, uphill and/or upstream.
- Ventilate enclosed areas.

PROTECTIVE CLOTHING

- Wear positive pressure self-contained breathing apparatus (SCBA).
- Wear chemical protective clothing that is specifically recommended by the manufacturer. It may provide little or no thermal protection.
- Structural firefighters' protective clothing provides limited protection in fire situations **ONLY**; it is not effective in spill situations where direct contact with the substance is possible.

EVACUATION

Spill

- See **Table 1 - Initial Isolation and Protective Action Distances** for highlighted materials. For non-highlighted materials, increase, in the downwind direction, as necessary, the isolation distance shown under "PUBLIC SAFETY".

Fire

- If tank, rail car or tank truck is involved in a fire, **ISOLATE** for 800 meters (1/2 mile) in all directions; also, consider initial evacuation for 800 meters (1/2 mile) in all directions.



In Canada, an Emergency Response Assistance Plan (ERAP) may be required for this product. Please consult the shipping document and/or the ERAP Program Section (page 391).

EMERGENCY RESPONSE

FIRE

Small Fire

- Dry chemical, CO₂ or water spray.

Large Fire

- Dry chemical, CO₂, alcohol-resistant foam or water spray.
- Move containers from fire area if you can do it without risk.
- Dike fire-control water for later disposal; do not scatter the material.

Fire involving Tanks or Car/Trailer Loads

- Fight fire from maximum distance or use unmanned hose holders or monitor nozzles.
- Do not get water inside containers.
- Cool containers with flooding quantities of water until well after fire is out.
- Withdraw immediately in case of rising sound from venting safety devices or discoloration of tank.
- ALWAYS stay away from tanks engulfed in fire.

SPILL OR LEAK

- ELIMINATE all ignition sources (no smoking, flares, sparks or flames in immediate area).
- Do not touch damaged containers or spilled material unless wearing appropriate protective clothing.
- Stop leak if you can do it without risk.
- Prevent entry into waterways, sewers, basements or confined areas.
- Absorb or cover with dry earth, sand or other non-combustible material and transfer to containers.
- DO NOT GET WATER INSIDE CONTAINERS.

FIRST AID

- Ensure that medical personnel are aware of the material(s) involved and take precautions to protect themselves.
- Move victim to fresh air.
- Call 911 or emergency medical service.
- Give artificial respiration if victim is not breathing.
- **Do not use mouth-to-mouth method if victim ingested or inhaled the substance; give artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device.**
- Administer oxygen if breathing is difficult.
- Remove and isolate contaminated clothing and shoes.
- In case of contact with substance, immediately flush skin or eyes with running water for at least 20 minutes.
- For minor skin contact, avoid spreading material on unaffected skin.
- Keep victim calm and warm.
- Effects of exposure (inhalation, ingestion or skin contact) to substance may be delayed.

***** STRAIGHT BILL OF LADING — SHORT FORM — Original — Not Negotiable

Attachment 5
Page 1 of 2

RECEIVED, subject to the conditions and liability thereon in effect on the date of the issue by the carrier of the property described in the Original Bill of Lading.									
CUST. NUMBER	S.D. NUMBER	CAR OR TRAILER INITIAL AND NUMBER			DATE SHIPPED	MC DD EE	ROUTE CODE	SHIP. PLT.	
5	7	RTMX 21065			8		5	1	
NET WEIGHT	GROSS WEIGHT	NO. OF UNIT	UNIT CODE	PROD. CODE	PROD. PLT.	The property described below, in apparent good order, except as noted hereon and condition of the face of packages unknown, received, signed, and delivered as indicated below, which said carrier (the vessel herein being understood throughout this contract as meaning any person or corporation in possession of the property under the contract agreed to carry to the usual place of destination, if on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed, as to each carrier of all or any of said property and at any position at said route to destination, and as to each party interested in all or any of said property, that every service to be performed hereunder shall be subject to all the terms and conditions of the Uniform Domestic Domestic Bill of Lading and to (1) the Official, Seaman, Women and other Freight Classifications in effect on the date hereof, if this is a rail-water shipment, or (2) in the applicable motor carrier classification or tariff if this is a motor carrier shipment. Shipper hereby certifies that he is familiar with all the terms and conditions of the said bill of lading, including those on the back hereof, set forth in the classification or tariff which governs the transportation of this shipment, and the said terms and conditions are hereby agreed to by the shipper and accepted for himself and his assigns.			
8	8	4	3	3	2				
CONSIGNEE John Doe, Inc.					DESTINATION Chicago, IL		STATE OF Cook		COUNTY OF
FROM Permanent Postoffice Address of Shipper John Doe, Inc. St. Louis, MO					AY				
ROUTE ABC Railroad					DELIVERING CARRIER ABC		AGENT ABC		
					PER				
NO. PKGS.	DESCRIPTION OF ARTICLES, SPECIAL MARKS AND EXCEPTIONS					WEIGHT (Sub. to Cert.)	RATE		
1 T/C	Residue: Last Contained Acetone 3 UN 1090 II RQ (Acetone) EMERGENCY CONTACT 1-800-424-9300 HAZ MAT STCC = 4908105					Residue			
This shipment is correctly described:									
CORRECT WEIGHT IS LBS. subject to verification by the Eastern, Southern or Western Weighing and Inspection Bureau, whichever applicable, 18943 John Doe, Inc. SHIPPER					THE TOTAL WEIGHT OF THE PALLETS USED ON THE SHIPMENT IS SHOWN ABOVE.			TRANSPORTATION FREE PER ABOVE	
PURCHASE ORDER NO.			SEAL NUMBERS		THIS CAR LEASED TO: John Doe, Inc.			LIGHT-TARE WEIGHT IS	
IF CHARGES ARE TO BE PREPAID, WRITE OR STAMP HERE "TO BE PREPAID"			Subject to section 7 of conditions of applicable bill of lading, if this shipment is to be delivered to the consignee without recourse on the consignee, the consignee shall sign the following statement: The carrier shall not make delivery of this shipment without payment of freight and all other lawful charges.				SHIPPER John Doe, Inc.		
Prepaid			SIGNATURE OF CONSIGNOR				PER		

PLANT COPY

 * STRAIGHT BILL OF LADING - SHORT FORM - Original - Not Negotiable Attachment 5
 * Page 2 of 2

RECEIVED, subject to the conditions and lawful load limits in effect on the date of the receipt by the carrier of the property described in the Original Bill of Lading.									
CUST. NUMBER 3	S.D. NUMBER 7	CAR OR TRAILER INITIAL AND NUMBER 15	DATE SHIPPED 8	MC DO DD EE	ROUTE CODE 6	SHIP. PLY. 1	the property described herein, in apparent good order, except as noted hereon and condition of contents of packages unknown, marked, consigned, and destined as indicated below, which said carrier (the word carrier being understood throughout this contract as meaning any person or corporation in possession of the property under the contract agrees to carry to its usual place of destination.		
GAPX 6075		try at said destination, if on its route, otherwise to deliver to another carrier on the route in said destination.			It is mutually agreed, as to each carrier of all or any of said property over all or any portion of said route to destination, and as to each party interested in all or any of said property, that every service to be performed hereunder shall be subject to all the terms and conditions of the Uniform Domestic Straight Bill of Lading and Form (1) in Official, Southern, Western and Midwest Freight Classification in effect on the date hereof, if this is a rail-motor shipment, or (2) in the applicable motor carrier classification or tariff if this is a motor carrier shipment.				
NET WEIGHT 8	GROSS WEIGHT 8	NO. OF UNIT 4	UNIT CODE 3	PROD. CODE 3	PROD. PLY. 2	Shipper hereby certifies that he is familiar with all the terms and conditions of the said bill of lading, including those on the back thereof, and that he has read and understands the same and agrees to the same and to the terms and conditions hereon agreed to by the shipper and accepted for himself and his assigns.			
CONSIGNEE John Doe, Inc.				DESTINATION Chicago, IL		STATE OF Cook		COUNTY OF	
FROM Permanent Postoffice Address of Shipper John Doe, Inc. St. Louis, MO				AT					
ROUTE ABC Railroad				DELIVERING CARRIER ABC		AGENT ABC			
PER									
NO. PKGS.	DESCRIPTION OF ARTICLES, SPECIAL MARKS AND EXCEPTIONS					WEIGHT (Sub. to Corr.)	RATE		
1 T/C	Phenol, Molten 6.1 UN 2312 II RQ (Phenol) EMERGENCY CONTACT 1-800-424-9300 HAZ MAT STCC = 4921220					20,000 Gals.			
This shipment is correctly described: CORRECT WEIGHT IS LBS. subject to verification by the Eastern, Southern or Western Weighing and Inspection Bureau, whichever applicable, 18943 John Doe, Inc. SHIPPER									
PURCHASE ORDER NO.				SEAL NUMBERS		THIS CAR LEASED TO: John Doe, Inc.		LIGHT-TARE WEIGHT IS	
IF CHARGES ARE TO BE PREPAID, WRITE OR STAMP HERE "TO BE PREPAID" Prepaid				Subject to section 7 of conditions of applicable bill of lading, if this shipment is to be delivered to the consignee without recourse on the consignor, the consignor shall sign the following statement: The carrier shall not make delivery of this shipment without payment of freight and all other lawful charges.				SHIPPER John Doe, Inc. PER	
SIGNATURE OF CONSIGNOR									

PLANT COPY

Rank	Commodity Name	Class
1	ALCOHOLS, N.O.S.	3
2	PETROLEUM CRUDE OIL	3
3	PETROLEUM GASES, LIQUEFIED	2.1
4	SODIUM HYDROXIDE SOLUTION	8
5	ELEVATED TEMPERATURE LIQUID, N.O.S.	9
6	SULFURIC ACID	8
7	DIESEL FUEL	3
8	PROPANE	2.1
9	HYDROCHLORIC ACID	8
10	SULFUR, MOLTEN	9
11	CHLORINE	2.3
12	SULFUR, MOLTEN	4.1
13	PHOSPHORIC ACID SOLUTION	8
14	GASOLINE	3
15	VINYL CHLORIDE, STABILIZED	2.1
16	AMMONIA, ANHYDROUS	2.3
17	FLAMMABLE LIQUIDS, N.O.S.	3
18	METHANOL	3
19	AMMONIA, ANHYDROUS	2.2
20	FUEL, AVIATION, TURBINE ENGINE	3
21	GASOLINE	3
22	CARBON DIOXIDE, REFRIGERATED LIQUID	2.2
23	STYRENE MONOMER, STABILIZED	3
24	GASOLINE	3
25	ENVIRONMENTALLY HAZARDOUS SUBSTANCES, LIQUID, N.O.S.	9
26	FLAMMABLE LIQUIDS, N.O.S.	3
27	PHENOL, MOLTEN	6.1
28	ETHANOL	3
29	ETHYLENE OXIDE	2.3
30	BUTADIENES, STABILIZED	2.1
31	PROPYLENE	2.1
32	BUTANE	2.1
33	PROPYLENE	2.1
34	DIESEL FUEL	CL
35	XYLENES	3
36	POTASSIUM HYDROXIDE, SOLUTION	8
37	BENZENE	3
38	PETROLEUM CRUDE OIL	CL
39	BUTANE	2.1
40	ELEVATED TEMPERATURE LIQUID, N.O.S.	9
41	OTHER REGULATED SUBSTANCES, LIQUID, N.O.S.	9
42	HYDROGEN PEROXIDE, STABILIZED	5.1
43	AMMONIUM NITRATE, LIQUID	5.1
44	FUEL OIL	CL
45	FUEL OIL	CL
46	SULFURIC ACID, SPENT	8
47	NON-ODORIZED LIQUEFIED PETROLEUM GAS	2.1
48	ELEVATED TEMPERATURE LIQUID, N.O.S.	9
49	DIESEL FUEL	3
50	VINYL ACETATE, STABILIZED	3
51	HYDROCARBONS, LIQUID, N.O.S.	3
52	METHYL METHACRYLATE MONOMER, STABILIZED	3
53	ETHANOL AND GASOLINE MIXTURE	3
54	ACETIC ACID, GLACIAL	8
55	ENVIRONMENTALLY HAZARDOUS SUBSTANCES, LIQUID, N.O.S.	9
56	PROPYLENE OXIDE	3
57	HYDROCARBONS, LIQUID, N.O.S.	3
58	PETROLEUM DISTILLATES, N.O.S.	3
59	ACETONE	3
60	PETROLEUM DISTILLATES, N.O.S.	CL
61	ACRYLIC ACID, STABILIZED	8
62	TOLUENE	3
63	PETROLEUM DISTILLATES, N.O.S.	3
64	HYPOCHLORITE SOLUTIONS	8
65	BUTYL ACRYLATES, STABILIZED	3

Source:

Association of American Railroads; Bureau of Explosives
 Annual Report of Hazardous Materials Transported by Rail: 2012
 Published August 2013; Report BOE 12-1-R

Rank	Commodity Name	Class
66	LIQUEFIED PETROLEUM GAS	2.1
67	NON-ODORIZED PETROLEUM GASES, LIQUEFIED	2.1
68	ELEVATED TEMPERATURE LIQUID, N.O.S.	9
69	FERROUS CHLORIDE, SOLUTION	8
70	FERRIC CHLORIDE, SOLUTION	8
71	HEXAMETHYLENEDIAMINE, SOLID	8
72	ETHANOL AND GASOLINE MIXTURE	3
73	HYDROGEN FLUORIDE, ANHYDROUS	8
74	ELEVATED TEMPERATURE LIQUID, N.O.S.	9
75	TOLUENE DIISOCYANATE	6.1
76	ELEVATED TEMPERATURE LIQUID, N.O.S.	9
77	XYLENES	3
78	CYCLOHEXANE	3
79	ACRYLONITRILE, STABILIZED	3
80	ENVIRONMENTALLY HAZARDOUS SUBSTANCES, LIQUID, N.O.S.	9
81	ETHANOL	3
82	SODIUM CHLORATE, AQUEOUS SOLUTION	5.1
83	COMBUSTIBLE LIQUID, N.O.S.	CL
84	ISOPROPANOL	3
85	OTHER REGULATED SUBSTANCES, LIQUID, N.O.S.	9
86	ALCOHOLS, N.O.S.	3
87	FORMALDEHYDE SOLUTIONS	8
88	ISOBUTYLENE	2.1
89	BUTANE	2.1
90	BUTYLENE	2.1
91	PHOSPHORIC ACID SOLUTION	8
92	WASTE FLAMMABLE LIQUIDS, N.O.S.	3
93	COMBUSTIBLE LIQUID, N.O.S.	CL
94	ENVIRONMENTALLY HAZARDOUS SUBSTANCES, LIQUID, N.O.S.	9
95	PETROLEUM CRUDE OIL	3
96	4-THIAPENTANAL	6.1
97	ISOBUTANE	2.1
98	ELEVATED TEMPERATURE LIQUID, FLAMMABLE, N.O.S.	3
99	GAS OIL	CL
100	DIESEL FUEL	CL
101	FLAMMABLE LIQUIDS, N.O.S.	3
102	1-HEXENE	3
103	BUTANOLS	3
104	BUTADIENES, STABILIZED	2.1
105	MALEIC ANHYDRIDE	8
106	HYDROCARBONS, LIQUID, N.O.S.	3
107	CORROSIVE LIQUIDS, TOXIC, N.O.S.	8
108	ARGON, REFRIGERATED LIQUID	2.2
109	COMBUSTIBLE LIQUID, N.O.S.	CL
110	DIESEL FUEL	CL
111	BUTYLENE	2.1
112	PENTANES	3
113	HEXANES	3
114	HYDROGEN PEROXIDE, AQUEOUS SOLUTIONS	5.1
115	SULFUR DIOXIDE	2.3
116	SULPHURIC ACID, SPENT	8
117	NITRIC ACID	8
118	HEXAMETHYLENEDIAMINE SOLUTION	8
119	METHYL CHLORIDE	2.1
120	FLAMMABLE LIQUIDS, N.O.S.	3
121	ETHANOLAMINE	8
122	ALCOHOLIC BEVERAGES	3
123	ISOPRENE, STABILIZED	3
124	FLAMMABLE LIQUIDS, CORROSIVE, N.O.S.	3
125	ELEVATED TEMPERATURE LIQUID, N.O.S.	9

Code Hazard Class

- 2.1 Flammable Gases
- 2.2 Non-Flammable Gases
- 2.3 Poison Gases
- 3 Flammable Liquids (CL) Combustible Liquids
- 4.1 Flammable Solids
- 5.1 Oxidizing Materials
- 6.1 Poisonous Materials
- 8 Corrosive Materials
- 9 Misc. Hazardous Materials