



# How to Use the 2012 Emergency Response Guidebook

**Presenter Name**

**Title, Region  
Field Operations**

**<http://phmsa.dot.gov/hazmat>**

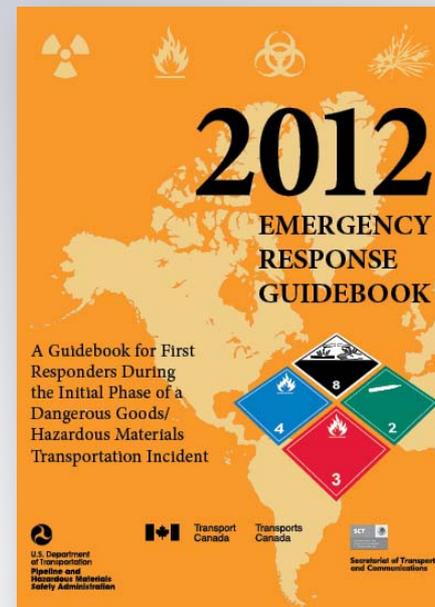
**Month/Year**





# Overview

- **REVIEW** background of Emergency Response Guidebook (ERG)
- **DISCUSS** what is new in 2012
- **DEMONSTRATE** how to Use the ERG
- **DISCUSS** additional Resources





# ERG History

- **First Published 1973**
  - Four Year Cycle
- **Internationally Recognized Technical Guidance**
  - Translated into more than 17 Languages Including Japanese, Thai, Hebrew, and German
- **1996 and Subsequent Issues**
  - Joint Collaboration for One North American Guidebook
    - USA, Canada, and Mexico



## 2012 ERG

Over 2.2 million copies of the 2012 ERG  
will be printed and distributed free of  
charge to the Nation's First Responders





# Notable 2012 Guidebook Changes

Various **WHITE PAGES** have been expanded and/or revised, including:

- Shipping Documents (Papers)
- How to Use this Guidebook During an Incident
- User's Guide
- Isolation and Evacuation Distances
- Who to Call for Assistance
- Table of Placards and Initial Response Guide to Use On-Scene

**SHIPPING DOCUMENTS (PAPERS)**

Shipping Documents (Papers) are synonymous and can be found as follows:

- Road – kept in the cab of a motor vehicle
- Rail – kept in possession of a crew member
- Aviation – kept in possession of the aircraft pilot
- Marine – kept in a holder on the bridge of a vessel

Shipping Documents (Papers) provide vital information regarding the hazardous materials/dangerous goods to initiate protective actions\*

Information provided:

- 4-Digit Identification Number, UN or NA (go to Yellow Pages) \*\*
- Proper Shipping name (go to Blue Pages)
- Hazard Class or Division number of material
- Packing Group
- Emergency Response Telephone Number
- Information describing the hazards of the material (entered on or attached to shipping document)

EMERGENCY CONTACT 1-000-000-0000		EXAMPLE OF EMERGENCY CONTACT TELEPHONE NUMBER			
		HAZARD CLASS OR DIVISION NO.			
NO. & TYPE OF PACKAGES				QUANTITY	
1 TANKTRUCK	UN1219	ISOPROPANOL	3	II	12 000 LITERS
ID NUMBER		SHIPPING NAME		PACKING GROUP	

**EXAMPLE OF PLACARD AND PANEL WITH ID NUMBER**  
The 4-digit ID Number may be shown on the diamond-shaped placard or on an adjacent orange panel displayed on the ends and sides of a cargo tank, vehicle or rail car.


A Numbered Placard
OR
A Placard and an Orange Panel

**1219**

\* For the purposes of this guidebook, the terms hazardous materials/dangerous goods are synonymous.  
\*\* After January 1, 2013 in the United States, the identification number must appear first in the basic description. For example; "UN2744, Cyclobutyl chloroformate, 6.1, (3, 8), PG II". This is currently optional in Canada.



# Notable 2012 Guidebook Changes

Various **WHITE PAGES** have been expanded and/or revised, including:

- Rail Car Identification Chart
- Road Trailer Identification Chart
- Fire and Spill control
- Pipeline Safety Information
- Criminal/Terrorist Use of Chemical/Biological/Radiological Agents
- Glossary
- Emergency Response Telephone Numbers

**Markers** – Often appear at road, railroad, and water crossings. Signs may be posted at property boundaries. Signs include operator's POC and product transported. Warning, Caution, or Danger will appear on signs.



**Note:** Pipelines transporting natural gas containing dangerous levels of H<sub>2</sub>S may have signs that say: "Sour Gas" or "Poison Gas".

## For Natural Gas Pipeline Incidents

### Two important things to remember:

- Never attempt to extinguish a gas fire; this could prolong/worsen incident/cause another leak in the pipeline.
- Never attempt to operate pipeline valves; this could prolong/worsen incident/cause another leak in the pipeline.

### SIGNS OF GAS PIPELINE RUPTURE:

- Loud roaring or explosive sound; OR
- Large flames and loud roaring noise.

### Follow these steps:

- Immediately evacuate area;
- Move upwind, away from flames; prevent individuals from entering;
- If no flames present, do not start/turn off vehicles/electrical equipment (ex: cell phones, pagers, two-way radios, or lights) as this could cause spark/ignition;
- Abandon equipment used in/near area;
- If flames present, driving away from area is acceptable;
- Move far enough from noise to allow normal conversation;
- From safe location, call 911 or contact the local fire/law enforcement; and
- Notify pipeline operator.



# Notable 2012 Guidebook Changes

**YELLOW** / **BLUE** sections have been expanded and/or revised to include dangerous goods listed in UN Recommendations on the Transport of Dangerous Goods to 17<sup>th</sup> revised edition





# Notable 2012 Guidebook Changes

Various **ORANGE** sections have been revised,  
including but not limited to:

- Public Safety Section Under EVACUATION –
  - **GUIDES 132, 138, 139, 159** and **166** –Changed “Large Spill” heading to “Spill”
- **GUIDE 128** – Added “For UN3166, if Lithium ion batteries are involved, also consult GUIDE 147”
- **GUIDE 154** – Added “For UN3171, if Lithium ion batteries are involved, also consult GUIDE 147”
- **GUIDE 114** – Moved “Explosives 1.6” from GUIDE 112 to 114



# Notable 2012 Guidebook Changes

Various **GREEN** sections have been revised,  
including but not limited to:

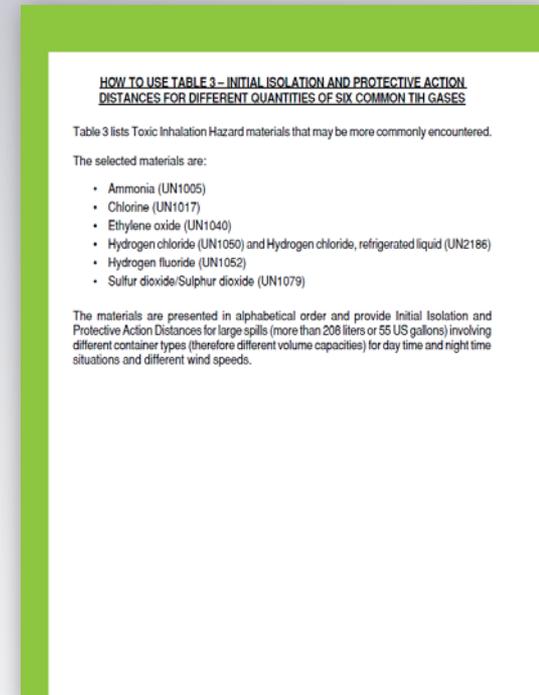
- Created Table 3 Isolation and Evacuation Distances for six common TIH materials
  - Ammonia, anhydrous (UN1005)
  - Chlorine (UN1017)
  - Ethylene oxide (UN1040)
  - Hydrogen chloride (UN1050) and Hydrogen chloride, refrigerated liquid (UN2186)
  - Hydrogen fluoride (UN1052)
  - Sulfur Dioxide (UN1079)



# Notable 2012 Guidebook Changes

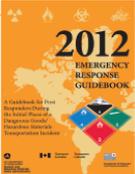
Various **GREEN** sections have been revised,  
including but not limited to:

- Added “How to Use Table 3” page
- Tune-up of Initial Isolation and Protective Action Distances
- Added references for Table 3 in numerous WHITE page locations
- Added Table 3 information within User’s Guide WHITE pages section.

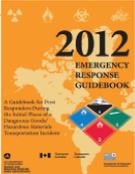




# 2012 Guidebook Summary of Changes



**2012**  
SUMMARY OF  
CHANGES FROM  
ERG2008



**2012**  
EMERGENCY  
RESPONSE  
GUIDEBOOK

- The Guidebook cover has been updated.
- General Information (WHITE) pages – several sections have been moved to the back of the book.
- Various sections have been expanded and/or revised, including:
  - Shipping Documents (Papers)
  - How to Use this Guidebook During an Incident
  - User's Guide
  - Isolation and Evacuation Distances
  - Who to Call for Assistance
  - Table of Placards and Initial Response Guide to Use On-Scene
  - Rail Car Identification Chart
  - Road Trailer Identification Chart
  - Fire and Spill Control
  - Pipeline Safety Information
  - Criminal/Terrorist Use of Chemical/Biological/Radiological Agents
  - Glossary
  - Publication Data (and related information)
  - Emergency Response Telephone Numbers

**Number of ID Number  
Index List of  
Number (BLUE-bordered)**

added in UN  
Dangerous Goods to

**Response Guides  
(s):**

**Action Distances,  
Materials Which  
pages):**

Toxic by inhalation  
Action Distances

**Explosion  
Section**

**(IED) Safe  
terrorist Section**

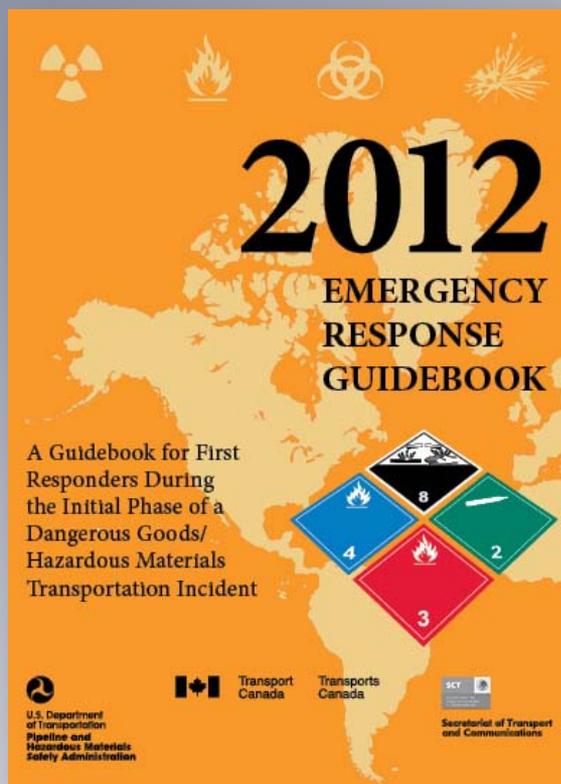
Washington, DC 20590-0001  
(202) 366-2301  
(202) 366-7342  
hazmat@dot.gov

<http://hazmat.dot.gov>  
Hazardous Materials INFO-LINE: (800) 467-4922

PHHSO-0125-0312



# Using the ERG



## Layout

- White Pages
- Bordered Pages
  - **Yellow**
  - **Blue**
  - **Orange**
  - **Green**



# A Hazardous Materials Incident

**RESIST**

**Rushing In!**

**APPROACH**

**Incidents from Upwind.**

**STAY**

**Clear of All Spills, Vapors, Fumes  
and Smoke.**



# How to use the ERG

## Three steps:

1. Identify the material
2. Look up materials 3-digit guide number
3. Turn to the numbered guide and read carefully

**HOW TO USE THIS GUIDEBOOK**

**RESIST RUSHING IN!**  
**APPROACH INCIDENT FROM UPWIND, UPHILL OR UPSTREAM**  
**STAY CLEAR OF ALL SPILLS, VAPORS, FUMES, SMOKE AND SUSPICIOUS SOURCES**

**STEP ONE: IDENTIFY THE MATERIAL** AND USE ANY OF THE FOLLOWING:

- **IDENTIFICATION NUMBER** (4-DIGIT ID AFTER UN/NA) FROM A:
  - PLACARD
  - ORANGE PANEL
  - SHIPPING PAPER OR PACKAGE
- **NAME OF THE MATERIAL** FROM A:
  - SHIPPING DOCUMENT OR PACKAGE

**STEP TWO: IDENTIFY 3-DIGIT GUIDE NUMBER.** USE:

- ID NUMBER INDEX in **yellow-bordered pages** or
- NAME OF MATERIAL INDEX in **blue-bordered pages**

Guide number supplemented with the letter (P) indicates that the material may undergo violent polymerization if subjected to heat or contamination.

**INDEX ENTRIES HIGHLIGHTED IN GREEN** are a TIH (Toxic Inhalation Hazard) material, a chemical warfare agent or a Dangerous Water Reactive Material (produces toxic gas upon contact with water).

**IDENTIFY ID NUMBER AND NAME OF MATERIAL** IN TABLE 1 – INITIAL ISOLATION AND PROTECTIVE ACTION DISTANCES (**the green-bordered pages**).

**IF NECESSARY, BEGIN PROTECTIVE ACTIONS IMMEDIATELY** (see Protective Actions page 288). If no protective action required, use the information jointly with the 3-digit guide.

**IF A REFERENCE TO A GUIDE CANNOT BE FOUND AND THIS INCIDENT IS BELIEVED TO INVOLVE DANGEROUS GOODS:**

- Use **GUIDE 111**, UNTIL ADDITIONAL INFORMATION BECOMES AVAILABLE
- Use **GUIDE 112**, EXPLOSIVES (other than 1.4 and 1.6)
- Use **GUIDE 114**, EXPLOSIVES (1.4 and 1.6)

**STEP THREE: TURN TO THE NUMBERED GUIDE** (**the orange-bordered pages**) **READ CAREFULLY.**

IF A PLACARD IS THE ONLY SOURCE OF INFORMATION, turn to pages 6-7 and use the 3-digit guide next to the placard and Proceed to Numbered Guide in orange-bordered pages.

**AS A LAST RESORT:** IF ONLY THE CONTAINER CAN BE IDENTIFIED, CONSULT THE TABLE OF RAIL CAR AND ROAD TRAILER IDENTIFICATION CHART (pages 8-9). INFORMATION ASSOCIATED WITH THESE CONTAINERS IS FOR WORST-CASE SCENARIOS.

**CALL THE EMERGENCY RESPONSE TELEPHONE NUMBER:**

- Listed on the shipping paper, if available.
- If shipping paper is not available, **IMMEDIATELY CALL the appropriate emergency response agency telephone number listed on the inside back cover of this guidebook.**
- Provide as much information as possible, such as the name of the carrier (trucking company or railroad) and vehicle number.

**BEFORE AN EMERGENCY – BECOME FAMILIAR WITH THIS GUIDEBOOK!**

First responders must be trained in the use of this guidebook.

Page 1



## White Pages

- ERG2012 User's Guide
- Guidebook Contents
- What Is a TIH?
- Isolation and Evacuation Distances
- Safety Precautions
- Who to Call for Assistance





# White Pages – National Response Center

- **Identifies Federal Agencies**
  - Federal On-Scene Coordinator
  - DOT
  - EPA
  - Other Federal Agencies

**NOTE:**

1. The appropriate federal agency must be notified in the case of rail, air or marine incidents.
2. The nearest police department must be notified in the case of lost, stolen or misplaced explosives, radioactive materials or infectious substances.
3. **CANUTEC must** be notified in the case of:
  - a. lost, stolen or unlawfully interfered with dangerous goods (except Class 9);
  - b. an incident involving infectious substances;
  - c. an accidental release from a cylinder that has suffered a catastrophic failure;
  - d. an incident where the shipping documents display **CANUTEC's** telephone number 613-996-6666 as the emergency telephone number; or
  - e. a dangerous goods incident in which a railway vehicle, a ship, an aircraft, an aerodrome or an air cargo facility is involved.

**UNITED STATES**

**NATIONAL RESPONSE CENTER (NRC)**

The NRC, which is operated by the U.S. Coast Guard, receives reports required when dangerous goods and hazardous substances are spilled. After receiving notification of an incident, the NRC will immediately notify the appropriate Federal On-Scene Coordinator and concerned Federal agencies. Federal law requires that anyone who releases into the environment a reportable quantity of a hazardous substance (including oil when water is, or may be affected) or a material identified as a marine pollutant, must **immediately** notify the NRC. When in doubt as to whether the amount released equals the required reporting levels for these materials, the NRC should be notified.

CALL NRC (24 hours)

1-800-424-8802

(Toll-free in the U.S., Canada, and the U.S. Virgin Islands)

202-267-2675 in the District of Columbia

Calling the emergency response telephone number, CHEMTREC®, CHEMTEL, INC., INFOTRAC or 3E COMPANY, does not constitute compliance with regulatory requirements to call the NRC.



# White Pages – Call for Assistance

- Chemical Emergency Information Centers
  - *CHEMTREC*
  - *CHEM-TEL*
  - *INFOTRAC*
  - *3E Company*
- Military Shipments
- Poison Control Center (*U.S. Only*)

## EMERGENCY RESPONSE TELEPHONE NUMBERS

### CANADA

1. CANUTEC, provides a 24 hour national bilingual (French and English) emergency response advisory service:

613-996-6666 \*

\*666 (STAR 666) cellular (in Canada only)

### UNITED STATES

1. CHEMTREC®, a 24 hour emergency response communication service:

1-800-424-9300 \*

(Toll-free in the U.S., Canada and the U.S. Virgin Islands)

703-527-3887 For calls originating elsewhere

2. CHEMTEL, INC., a 24 hour emergency response communication service:

1-888-255-3924 \*

(Toll-free in the U.S., Canada, Puerto Rico and the U.S. Virgin Islands)

813-248-0585 For calls originating elsewhere

3. INFOTRAC, a 24 hour emergency response communication service:

1-800-535-5053 \*

(Toll-free in the U.S., Canada and the U.S. Virgin Islands)

352-323-3500 For calls originating elsewhere

4. 3E COMPANY, a 24 hour emergency response communication service:

1-800-451-8346 \*

(Toll-free in the U.S., Canada and the U.S. Virgin Islands)

760-602-8703 For calls originating elsewhere

The emergency response information services shown above have requested to be listed as providers of emergency response information and have agreed to provide emergency response information to all callers. They maintain periodically updated lists of state and Federal radiation authorities who provide information and technical assistance on handling incidents involving radioactive materials.

5. **MILITARY SHIPMENTS**, for assistance at incidents involving materials being shipped by, for, or to the Department of Defense (DOD), call one of the following numbers (24 hours):

703-697-0218 \* - Explosives/ammunition incidents

(U.S. Army Operations Center)

1-800-851-8061 (Toll-free in the U.S.) - All other dangerous goods incidents

(Defense Logistics Agency)

6. **NATIONWIDE POISON CONTROL CENTER** (United States only)

1-800-222-1222 (Toll-free in the U.S.)

\* Collect calls are accepted



# White Pages

## Three steps:

1. Identify the material
2. Look up materials 3-digit guide number
3. Turn to the numbered guide and read carefully

### HOW TO USE THIS GUIDEBOOK

**RESIST RUSHING IN!**  
APPROACH INCIDENT FROM UPWIND, UPHILL OR UPSTREAM  
STAY CLEAR OF ALL SPILLS, VAPORS, FUMES, SMOKE AND SUSPICIOUS SOURCES

### STEP ONE: IDENTIFY THE MATERIAL AND USE ANY OF THE FOLLOWING:

- IDENTIFICATION NUMBER (4-DIGIT ID AFTER UN/NA) FROM A:
  - PLACARD
  - ORANGE PANEL
  - SHIPPING PAPER OR PACKAGE
- NAME OF THE MATERIAL FROM A:
  - SHIPPING DOCUMENT OR PACKAGE

- Use GUIDE 112, EXPLOSIVES (other than 1.4 and 1.6)
- Use GUIDE 114, EXPLOSIVES (1.4 and 1.6)

### STEP THREE: TURN TO THE NUMBERED GUIDE (the orange-bordered pages) READ CAREFULLY.

IF A PLACARD IS THE ONLY SOURCE OF INFORMATION, turn to pages 6-7 and use the 3-digit guide next to the placard and Proceed to Numbered Guide in orange-bordered pages.

**AS A LAST RESORT:** IF ONLY THE CONTAINER CAN BE IDENTIFIED, CONSULT THE TABLE OF RAIL CAR AND ROAD TRAILER IDENTIFICATION CHART (pages 8-9). INFORMATION ASSOCIATED WITH THESE CONTAINERS IS FOR WORST-CASE SCENARIOS.

### CALL THE EMERGENCY RESPONSE TELEPHONE NUMBER:

- Listed on the shipping paper, if available.
- If shipping paper is not available, IMMEDIATELY CALL the appropriate emergency response agency telephone number listed on the inside back cover of this guidebook.
- Provide as much information as possible, such as the name of the carrier (trucking company or railroad) and vehicle number.

### BEFORE AN EMERGENCY – BECOME FAMILIAR WITH THIS GUIDEBOOK!

First responders must be trained in the use of this guidebook.



# White Pages

## Hazard Classification System Translates:

- Placard information
- Label information
- Shipping paper information

### HAZARD CLASSIFICATION SYSTEM

The hazard class of dangerous goods is indicated either by its class (or division) number or name. For a placard corresponding to the primary hazard class of a material, the hazard class or division number must be displayed in the lower corner of the placard. However, no hazard class or division number may be displayed on a placard representing the subsidiary hazard of a material. For other than Class 7 or the OXYGEN placard, text indicating a hazard (for example, "CORROSIVE") is not required. Text is shown only in the U.S. The hazard class or division number must appear on the shipping document after each shipping name.

#### Class 1 - Explosives

Division 1.1	Explosives with a mass explosion hazard
Division 1.2	Explosives with a projection hazard
Division 1.3	Explosives with predominantly a fire hazard
Division 1.4	Explosives with no significant blast hazard
Division 1.5	Very insensitive explosives with a mass explosion hazard
Division 1.6	Extremely insensitive articles

#### Class 2 - Gases

Division 2.1	Flammable gases
Division 2.2	Non-flammable, non-toxic* gases
Division 2.3	Toxic* gases

#### Class 3 - Flammable liquids (and Combustible liquids [U.S.])

#### Class 4 - Flammable solids; Spontaneously combustible materials; and Dangerous when wet materials/Water-reactive substances

Division 4.1	Flammable solids
Division 4.2	Spontaneously combustible materials
Division 4.3	Water-reactive substances/Dangerous when wet materials

#### Class 5 - Oxidizing substances and Organic peroxides

Division 5.1	Oxidizing substances
Division 5.2	Organic peroxides

#### Class 6 - Toxic\* substances and Infectious substances

Division 6.1	Toxic* substances
Division 6.2	Infectious substances

#### Class 7 - Radioactive materials

#### Class 8 - Corrosive substances

#### Class 9 - Miscellaneous hazardous materials/Products, Substances or Organisms

\* The words "poison" or "poisonous" are synonymous with the word "toxic".



# White Pages

## Translates Placard Hazard Class Information



### HAZARD CLASSIFICATION SYSTEM

The hazard class of dangerous goods is indicated either by its class (or division) number or name. Placards are used to identify the class or division of a material. The hazard class or division number must be displayed in the lower corner of a placard and is required for both primary and subsidiary hazard classes and divisions, if applicable. For other than Class 7 or the OXYGEN placard, text indicating a hazard (for example, "CORROSIVE") is not required. Text is shown only in the U.S. The hazard class or division number and subsidiary hazard classes or division numbers placed in parentheses (when applicable), must appear on the shipping document after each proper shipping name.

#### Class 1 - Explosives

- Division 1.1 Explosives with a mass explosion hazard
- Division 1.2 Explosives with a projection hazard
- Division 1.3 Explosives with predominantly a fire hazard
- Division 1.4 Explosives with no significant blast hazard
- Division 1.5 Very insensitive explosives with a mass explosion hazard
- Division 1.6 Extremely insensitive articles

#### Class 2 - Gases

- Division 2.1 Flammable gases
- Division 2.2 Non-flammable, non-toxic\* gases
- Division 2.3 Toxic\* gases

#### Class 3 - Flammable liquids (and Combustible liquids [U.S.]

#### Class 4 - Flammable solids; Spontaneously combustible materials; and Dangerous when wet materials/Water-reactive substances

- Division 4.1 Flammable solids
- Division 4.2 Spontaneously combustible materials
- Division 4.3 Water-reactive substances/Dangerous when wet materials

#### Class 5 - Oxidizing substances and Organic peroxides

- Division 5.1 Oxidizing substances
- Division 5.2 Organic peroxides

#### Class 6 - Toxic\* substances and Infectious substances

- Division 6.1 Toxic\* substances
- Division 6.2 Infectious substances

#### Class 7 - Radioactive materials

#### Class 8 - Corrosive substances

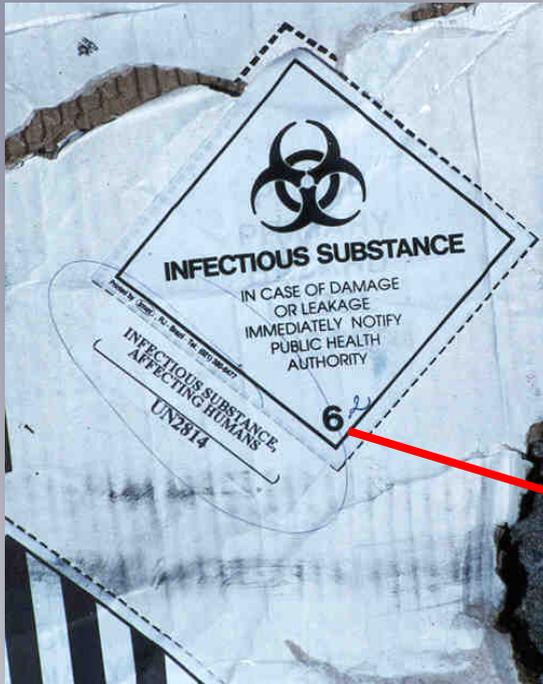
#### Class 9 - Miscellaneous hazardous materials/Products, Substances or Organisms

\* The words "poison" or "poisonous" are synonymous with the word "toxic".



# White Pages

## Translates Label Hazard Class Information



HAZARD CLASSIFICATION SYSTEM	
The hazard class of dangerous goods is indicated either by its class (or division) number or name. For a placard corresponding to the primary hazard class of a material, the hazard class or division number must be displayed in the lower corner of the placard. However, no hazard class or division number may be displayed on a placard representing the subsidiary hazard of a material. For other than Class 7 or the OXYGEN placard, text indicating a hazard (for example, "CORROSIVE") is not required. Text is shown only in the U.S. The hazard class or division number must appear on the shipping document after each shipping name.	
<b>Class 1 - Explosives</b>	
Division 1.1	Explosives with a mass explosion hazard
Division 1.2	Explosives with a projection hazard
Division 1.3	Explosives with predominantly a fire hazard
Division 1.4	Explosives with no significant blast hazard
Division 1.5	Very insensitive explosives with a mass explosion hazard
Division 1.6	Extremely insensitive articles
<b>Class 2 - Gases</b>	
Division 2.1	Flammable gases
Division 2.2	Non-flammable, non-toxic* gases
Division 2.3	Toxic* gases
<b>Class 3 - Flammable liquids (and Combustible liquids (U.S.))</b>	
<b>Class 4 - Flammable solids; Spontaneously combustible materials; and Dangerous when wet materials/Water-reactive substances</b>	
Division 4.1	Flammable solids
Division 4.2	Spontaneously combustible materials
Division 4.3	Water-reactive substances/Dangerous when wet materials
<b>Class 5 - Oxidizing substances and Organic peroxides</b>	
Division 5.1	Oxidizing substances
Division 5.2	Organic peroxides
<b>Class 6 - Toxic* substances and Infectious substances</b>	
Division 6.1	Toxic* substances
Division 6.2	Infectious substances
<b>Class 7 - Radioactive materials</b>	
<b>Class 8 - Corrosive substances</b>	
<b>Class 9 - Miscellaneous hazardous materials/Products, Substances or Organisms</b>	
* The words "poison" or "poisonous" are synonymous with the word "toxic".	



# White Pages

## Translates Shipping Paper Information

1 drum Magnesium powder,  
4.3, UN1418, I

### HAZARD CLASSIFICATION SYSTEM

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#### Class 1 - Explosives

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Division 1.4	Explosives with no significant blast hazard
Division 1.5	Very insensitive explosives with a mass explosion hazard
Division 1.6	Extremely insensitive articles

#### Class 2 - Gases

Division 2.1	Flammable gases
Division 2.2	Non-flammable, non-toxic gases
Division 2.3	Toxic gases

#### Class 3 - Flammable liquids (and Combustible liquids [U.S.])

#### Class 4 - Flammable solids; Spontaneously combustible materials; and Dangerous when wet materials/Water-reactive substances

Division 4.1	Flammable solids
Division 4.2	Spontaneously combustible materials
Division 4.3	Water-reactive substances/Dangerous when wet materials

#### Class 5 - Oxidizing substances and Organic peroxides

Division 5.1	Oxidizing substances
Division 5.2	Organic peroxides

#### Class 6 - Toxic substances and Infectious substances

Division 6.1	Toxic substances
Division 6.2	Infectious substances

#### Class 7 - Radioactive materials

#### Class 8 - Corrosive substances

#### Class 9 - Miscellaneous hazardous materials/Products, Substances or Organisms

\*The words "poison" or "poisonous" are synonymous with the word "toxic".



## White Pages – Rail and Road Identification

- For use when no other information is available
- Guidance is usually for most dangerous material in that type of container

**LAST RESORT**



# White Pages – Rail Car Identification

- Tank cars may have solids, liquids or gases
  - Any may be under pressure
- Products must be identified if possible:
  - Use placards, ID# or stenciled name first!

# LAST RESORT

**RAIL CAR IDENTIFICATION CHART\***

**Hopper Car Dry Bulk (140)**

**Box Car Mixed Cargo (111)**

**Pressure Tank Car Compressed Liquefied Gases (117)**

**Low pressure tank Car Liquids (131)**

REPORTING MARKS & CAR NUMBER  
LOAD LIMIT (POUNDS OR KG)  
EMPTY WEIGHT OF CAR  
PLACARD HOLDER  
TANK TEST & SAFETY VALVE TEST INFORMATION  
CAR SPECIFICATION  
COMMODITY NAME\*  
TC PERMIT NUMBER

REPORTING MARKS & CAR NUMBER  
CAPACITY IN GALLONS OR LITERS  
PLACARD HOLDER\*

**CAUTION:** Emergency response personnel must be aware that rail tank cars vary widely in construction, fittings and purpose. Tank cars could transport products that may be solids, liquids or gases. The products may be under pressure. It is essential that products be identified by consulting shipping documents or train consist or contacting dispatch centers before emergency response is initiated.

The information stenciled on the sides or ends of tank cars, as illustrated above, may be used to identify the product utilizing:

- the commodity name shown; or
- the other information shown, especially reporting marks and car number which, when supplied to a dispatch center, will facilitate the identification of the product.

\* The recommended guides should be considered as last resort if product cannot be identified by any other means.

Page 18



# White Pages – Road Trailer Identification

- These are the most general type of trailers
- Many are not illustrated
- Guides based on most hazardous material in these trailers

# LAST RESORT

**ROAD TRAILER IDENTIFICATION CHART\***

 DOT406, TC406, SCT-306 Non-pressure Liquid Tank (MC306, TC306) 131	 MC338, TC338, SCT-338 Cryogenic Liquid Tank (TC341, CGA341) 117
 DOT407, TC407, SCT-307 Low Pressure Chemical Tank (MC307, TC307) 137	 Compressed Gas/ Tube Trailer 117
 DOT412, TC412, SCT-312 Corrosive Liquid Tank (MC312, TC312) 137	 Dry Bulk Cargo Trailer 134
 MC331, TC331, SCT-331 High Pressure Tank 117	 Mixed Cargo 111
 DOT407, TC407, DOT412, TC412 Vacuum Loaded Tank (TC350) 137	 Intermodal Tank 117

**CAUTION:** This chart depicts only the most general shapes of road trailers. Emergency response personnel must be aware that there are many variations of road trailers, not illustrated above, that are used for shipping chemical products. The suggested guides are for the most hazardous products that may be transported in these trailer types.

\* The recommended guides should be considered as last resort if product cannot be identified by any other means.



# White Pages

## Hazard Identification Codes on Intermodal Containers





## White Pages

### Hazard Identification Codes on Intermodal Containers

#### Hazard Identification Codes:

- “2” through “9” indicates the hazard Identification Code
- DO NOT CONFUSE with HMR CLASS NUMBERS
- “0” indicates single hazard

20

1977



# Hazard Identification Codes

2 → Emission of Gas

3 → Flammable Liquids

4 → Flammable Solids

5 → Oxidizing Effect

6 → Toxicity or Risk of Infection

7 → Radioactivity

8 → Corrosivity

9 → Risk of Spontaneous Violent Reaction



## White Pages

### Hazard Identification Codes on Intermodal Containers

- Multiple Duplication Means Higher Hazard
- Identification Number of Material

33

1203



## White Pages

### Hazard Identification Codes on Intermodal Containers

- Prefix “X” indicates material reacts dangerously with water



**X462**

**3130**



# How to Use the ERG

## Three steps:

1. Identify the material
2. Look up materials 3-digit guide number
3. Turn to the numbered guide and read carefully

**HOW TO USE THIS GUIDEBOOK**  
**RESIST RUSHING IN!**  
**APPROACH INCIDENT FROM UPWIND, UPHILL OR UPSTREAM**  
**STAY CLEAR OF ALL SPILLS, VAPORS, FUMES, SMOKE AND SUSPICIOUS SOURCES**

**STEP ONE: IDENTIFY THE MATERIAL** AND USE ANY OF THE FOLLOWING:

- **IDENTIFICATION NUMBER** (4-DIGIT ID AFTER UN/NA) FROM A:
  - PLACARD
  - ORANGE PANEL
  - SHIPPING PAPER OR PACKAGE
- **NAME OF THE MATERIAL** FROM A:
  - SHIPPING DOCUMENT OR PACKAGE

**STEP TWO: IDENTIFY 3-DIGIT GUIDE NUMBER**, USE:

- ID NUMBER INDEX in yellow-bordered pages or

**STEP TWO: IDENTIFY 3-DIGIT GUIDE NUMBER**, USE:

- ID NUMBER INDEX in yellow-bordered pages or
- NAME OF MATERIAL INDEX in blue-bordered pages

Guide number supplemented with the letter (P) indicates that the material may undergo violent polymerization if subjected to heat or contamination.

**INDEX ENTRIES HIGHLIGHTED IN GREEN** are a TIH (Toxic Inhalation Hazard) material, a chemical warfare agent or a Dangerous Water Reactive Material (produces toxic gas upon contact with water). **IDENTIFY ID NUMBER AND NAME OF MATERIAL IN TABLE 1 – INITIAL ISOLATION AND PROTECTIVE ACTION DISTANCES (the green-bordered pages).**

**IF NECESSARY, BEGIN PROTECTIVE ACTIONS IMMEDIATELY** (see Protective Actions page 288). If no protective action required, use the information jointly with the 3-digit guide.

**IF A REFERENCE TO A GUIDE CANNOT BE FOUND AND THIS INCIDENT IS BELIEVED TO INVOLVE DANGEROUS GOODS:**

- **Use GUIDE 111**, UNTIL ADDITIONAL INFORMATION BECOMES AVAILABLE
- **Use GUIDE 112**, EXPLOSIVES (other than 1.4 and 1.6)
- **Use GUIDE 114**, EXPLOSIVES (1.4 and 1.6)



# Yellow Border Pages

- Identification Number

- Guide Page

- Proper Shipping Name

ID No.	Guide No.	Name of Material	ID No.	Guide No.	Name of Material
1030	115	1,1-Difluoroethane	1046	121	Helium
1030	115	Difluoroethane	1046	121	Helium, compressed
1030	115	Refrigerant gas R-152a	1048	125	Hydrogen bromide, anhydrous
1032	118	Dimethylamine, anhydrous	1049	115	Hydrogen
1033	115	Dimethyl ether	1049	115	Hydrogen, compressed
1035	115	Ethane	1050	125	Hydrogen chloride, anhydrous
1035	115	Ethane, compressed	1051	117	AC
1036	118	Ethylamine	1051	117	Hydrocyanic acid, aqueous solutions, with more than 20% Hydrogen cyanide
1037	115	Ethyl chloride	1051	117	Hydrogen cyanide, anhydrous, stabilized
1038	115	Ethylene, refrigerated liquid (cryogenic liquid)	1051	117	Hydrogen cyanide, stabilized
1039	115	Methyl ethyl ether	1052	125	Hydrogen fluoride, anhydrous
1040	119P	Ethylene oxide	1053	117	Hydrogen sulfide
1040	119P	Ethylene oxide with Nitrogen	1053	117	Hydrogen sulphide
1041	115	Carbon dioxide and Ethylene oxide mixture, with more than 9% but not more than 87% Ethylene oxide	1055	115	Isobutylene
1041	115	Carbon dioxide and Ethylene oxide mixtures, with more than 6% Ethylene oxide	1056	121	Krypton
1041	115	Ethylene oxide and Carbon dioxide mixture, with more than 9% but not more than 87% Ethylene oxide	1056	121	Krypton, compressed
1041	115	Ethylene oxide and Carbon dioxide mixtures, with more than 6 % Ethylene oxide	1057	115	Lighter refills (cigarettes) (flammable gas)
1043	125	Fertilizer, ammoniating solution, with free Ammonia	1057	115	Lighters (cigarettes) (flammable gas)
1044	126	Fire extinguishers with compressed gas	1058	120	Liquefied gases, non-flammable, charged with Nitrogen, Carbon dioxide or Air
1044	126	Fire extinguishers with liquefied gas	1060	116P	Methylacetylene and Propadiene mixture, stabilized
1045	124	Fluorine	1060	116P	Propadiene and Methylacetylene mixture, stabilized
1045	124	Fluorine, compressed	1061	118	Methylamine, anhydrous
			1062	123	Methyl bromide
			1063	115	Methyl chloride



## Blue Border Pages

- Identification Number

- Guide Page

- Proper Shipping Name

Name of Material	Guide ID No.	Guide ID No.	Name of Material	Guide ID No.	Guide ID No.
AC	117	1051	Acrylamide	153P	2074
Accumulators, pressurized, pneumatic or hydraulic	126	1956	Acrylamide, solid	153P	2074
Acetal	127	1086	Acrylamide, solution	153P	3426
Acetaldehyde	129	1089	Acrylic acid, stabilized	132P	2218
Acetaldehyde ammonia	171	1841	Acrylonitrile, stabilized	131P	1093
Acetaldehyde oxime	129	2332	Adamsite	154	1698
Acetic acid, glacial	132	2789	Adhesives (flammable)	128	1133
Acetic acid, solution, more than 10% but not more than 80% acid	153	2790	Adiponitrile	153	2205
Acetic acid, solution, more than 80% acid	132	2789	Aerosol dispensers	126	1950
Acetic anhydride	127	1715	Aerosols	126	1950
Acetone	127	1090	Air, compressed	122	1002
Acetone cyanohydrin, stabilized	155	1541	Air, refrigerated liquid (cryogenic liquid)	122	1003
Acetone oils	127	1091	Air, refrigerated liquid (cryogenic liquid), non-pressurized	122	1003
Acetonitrile	127	1648	Air bag inflators	171	3268
Acetyl bromide	156	1716	Air bag inflators, compressed gas	126	3353
Acetyl chloride	155	1717	Air bag inflators, pyrotechnic	171	3268
Acetylene	116	1001	Air bag modules	171	3268
Acetylene, dissolved	116	1001	Air bag modules, compressed gas	126	3353
Acetylene, solvent free	116	3374	Air bag modules, pyrotechnic	171	3268
Acetylene, Ethylene and Propylene in mixture, refrigerated liquid containing at least 71.5% Ethylene with not more than 22.5% Acetylene and not more than 6% Propylene	115	3138	Aircraft hydraulic power unit fuel tank	131	3165
Acetylene tetrabromide	159	2504	Alcoholates solution, n.o.s., in alcohol	132	3274
Acetyl iodide	156	1898	Alcoholic beverages	127	3065
Acetyl methyl carbinol	127	2621	Alcohols, flammable, poisonous, n.o.s.	131	1986
Acid, sludge	153	1906	Alcohols, flammable, toxic, n.o.s.	131	1986
Acid butyl phosphate	153	1718	Alcohols, n.o.s.	127	1987
Acridine	153	2713	Alcohols, poisonous, n.o.s.	131	1986
Acrolein, stabilized	131P	1092	Alcohols, toxic, n.o.s.	131	1986
Acrolein dimer, stabilized	129P	2607	Aldehydes, flammable, poisonous, n.o.s.	131	1988



## Yellow and Blue Border Pages

- The letter “P” following the Guide Page number indicates material may undergo violent polymerization if subjected to:
  - High heat
  - Contamination

1067	124	Dinitrogen tetroxide	1080	126	Sulphur hexafluoride
1067	124	Nitrogen dioxide	1081	116P	Tetrafluoroethylene, stabilized
1069	125	Nitrosyl chloride	1082	119P	Trifluorochloroethylene, stabilized
1070	122	Nitrous oxide	1083	118	Trimethylamine, anhydrous
1070	122	Nitrous oxide, compressed			

**Polymerization may cause an explosive container failure!!**

AC	117	1051	Acrylamide	153P	2074
Accumulators, pressurized, pneumatic or hydraulic	126	1956	Acrylamide, solid	153P	2074
Acetal	127	1088	Acrylamide, solution	153P	3426
Acetaldehyde	129	1089	Acrylic acid, stabilized	132P	2218
			Acrylonitrile, stabilized	131P	1093





# White Pages

## Three steps:

1. Identify the material
2. Look up materials 3-digit guide number
3. Turn to the numbered guide and read carefully

**HOW TO USE THIS GUIDEBOOK**  
**RESIST RUSHING IN!**  
**APPROACH INCIDENT FROM UPWIND, UPHILL OR UPSTREAM**  
**STAY CLEAR OF ALL SPILLS, VAPORS, FUMES, SMOKE AND SUSPICIOUS SOURCES**

**STEP ONE: IDENTIFY THE MATERIAL** AND USE ANY OF THE FOLLOWING:

- **IDENTIFICATION NUMBER** (4-DIGIT ID AFTER UNNA) FROM A:
  - PLACARD
  - ORANGE PANEL
  - SHIPPING PAPER OR PACKAGE
- **NAME OF THE MATERIAL** FROM A:
  - SHIPPING DOCUMENT OR PACKAGE

**STEP TWO: IDENTIFY 3-DIGIT GUIDE NUMBER.** USE:

- ID NUMBER INDEX in **yellow-bordered pages** or
- NAME OF MATERIAL INDEX in **blue-bordered pages**

Guide number supplemented with the letter (P) indicates that the material may undergo violent

**STEP THREE: TURN TO THE NUMBERED GUIDE** (the orange-bordered pages) **READ CAREFULLY.**

**IF A PLACARD IS THE ONLY SOURCE OF INFORMATION,** turn to pages 6-7 and use the 3-digit guide next to the placard and Proceed to Numbered Guide in orange-bordered pages.

**AS A LAST RESORT:** IF ONLY THE CONTAINER CAN BE IDENTIFIED, CONSULT THE TABLE OF RAIL CAR AND ROAD TRAILER IDENTIFICATION CHART (pages 8-9). INFORMATION ASSOCIATED WITH THESE CONTAINERS IS FOR WORST-CASE SCENARIOS.

### **CALL THE EMERGENCY RESPONSE TELEPHONE NUMBER:**

- Listed on the shipping paper, if available.
- If shipping paper is not available, **IMMEDIATELY CALL** the appropriate emergency response agency telephone number listed on the inside back cover of this guidebook.
- Provide as much information as possible, such as the name of the carrier (trucking company or railroad) and vehicle number.



# Orange Border Pages

## Emergency response guidance

- Three major sections
  - Potential Hazards - *what can go wrong*
  - Public Safety - *protect the public*
  - Emergency Response - *proactive information*

GUIDE 111	MIXED LOAD/UNIDENTIFIED CARGO	ERG 2004	ERG 2004	MIXED LOAD/UNIDENTIFIED CARGO	GUIDE 111
<b>POTENTIAL HAZARDS</b>			<b>EMERGENCY RESPONSE</b>		
<b>FIRE OR EXPLOSION</b> <ul style="list-style-type: none"><li>• May explode from heat, shock, friction or contamination.</li><li>• May react violently or explosively on contact with air, water or foam.</li><li>• May be ignited by heat, sparks or flames.</li><li>• Vapors may travel to source of ignition and flash back.</li><li>• Containers may explode when heated.</li><li>• Ruptured cylinders may rocket.</li></ul>			<b>FIRE</b> <b>CAUTION: Material may react with extinguishing agent.</b> Small Fires: <ul style="list-style-type: none"><li>• Dry chemical, CO<sub>2</sub>, water spray or regular foam.</li></ul> Large Fires <ul style="list-style-type: none"><li>• Water spray, fog or regular foam.</li><li>• Move containers from fire area if you can do it without risk.</li></ul> Fire Involving Tanks: <ul style="list-style-type: none"><li>• Cool containers with flooding quantities of water until well after fire is out.</li><li>• Do not get water inside containers.</li><li>• Withdraw immediately in case of rising sound from venting safety devices or discoloration of tank.</li><li>• ALWAYS stay away from tanks engulfed in fire.</li></ul>		
<b>HEALTH</b> <ul style="list-style-type: none"><li>• Inhalation, ingestion or contact with substance may cause severe injury, infection, disease or death.</li><li>• High concentration of gas may cause asphyxiation without warning.</li><li>• Contact may cause burns to skin and eyes.</li><li>• Fire or contact with water may produce irritating, toxic and/or corrosive gases.</li><li>• Runoff from fire control may cause pollution.</li></ul>			<b>SPILL OR LEAK</b> <ul style="list-style-type: none"><li>• Do not touch or walk through spilled material.</li><li>• ELIMINATE all ignition sources (no smoking, flares, sparks or flames in immediate area).</li><li>• All equipment used when handling the product must be grounded.</li><li>• Keep combustibles (wood, paper, oil, etc.) away from spilled material.</li><li>• Use water spray to reduce vapors or divert vapor cloud drift. Avoid allowing water runoff to contact spilled material.</li><li>• Prevent entry into waterways, sewers, basements or confined areas.</li></ul> Small Spills - Take up with sand or other non-combustible absorbent material and place into containers for later disposal. Large Spills - Dike far ahead of liquid spill for later disposal.		
<b>PUBLIC SAFETY</b> <ul style="list-style-type: none"><li>• 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.</li><li>• As an immediate precautionary measure, isolate spill or leak area for at least 100 meters (330 feet) in all directions.</li><li>• Keep unauthorized personnel away.</li><li>• Stay upwind.</li><li>• Keep out of low areas.</li></ul>			<b>FIRST AID</b> <ul style="list-style-type: none"><li>• Move victim to fresh air. • Call 911 or emergency medical service.</li><li>• Give artificial respiration if victim is not breathing.</li><li>• 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.</li><li>• Administer oxygen if breathing is difficult.</li><li>• Remove and isolate contaminated clothing and shoes.</li><li>• In case of contact with substance, immediately flush skin or eyes with running water for at least 20 minutes.</li><li>• Shower and wash with soap and water.</li><li>• Keep victim warm and quiet.</li><li>• Effects of exposure (inhalation, ingestion or skin contact) to substance may be delayed.</li><li>• Ensure that medical personnel are aware of the material(s) involved and take precautions to protect themselves.</li></ul>		
<b>PROTECTIVE CLOTHING</b> <ul style="list-style-type: none"><li>• Wear positive pressure self-contained breathing apparatus (SCBA).</li><li>• Structural firefighters' protective clothing provides limited protection in fire situations ONLY; it may not be effective in spill situations.</li></ul>					
<b>EVACUATION</b> Fire <ul style="list-style-type: none"><li>• 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.</li></ul>					

**LEFT**  
**Safety**

**RIGHT**  
**Response**



# Green Border Pages

**Table 1 - Initial Isolation and Protective Action Distances**

*Used for estimating:*

- Isolation zone
- Protective zone
  - Evacuation zone
  - Shelter-in-place

**TABLE 1 - INITIAL ISOLATION AND PROTECTIVE ACTION DISTANCES**

ID No.	NAME OF MATERIAL	SMALL SPILLS (From a small package or small leak from a large package)				LARGE SPILLS (From a large package or from many small packages)			
		First ISOLATE in all Directions		Then PROTECT persons Downwind during-		First ISOLATE in all Directions		Then PROTECT persons Downwind during-	
		Meters	(Feet)	DAY	NIGHT	Meters	(Feet)	DAY	NIGHT
		Kilometers (Miles)	Kilometers (Miles)	Kilometers (Miles)	Kilometers (Miles)				
1005	Ammonia, anhydrous	30 m	(100 ft)	0.1 km (0.1 mi)	0.2 km (0.1 mi)	150 m (500 ft)	0.8 km (0.5 mi)	2.3 km (1.4 mi)	
1005	Anhydrous ammonia	30 m	(100 ft)	0.1 km (0.1 mi)	0.6 km (0.4 mi)	300 m (1000 ft)	1.9 km (1.2 mi)	4.8 km (3.0 mi)	
1008	Boron trifluoride	30 m	(100 ft)	0.1 km (0.1 mi)	0.1 km (0.1 mi)	150 m (500 ft)	0.7 km (0.5 mi)	2.7 km (1.7 mi)	
1008	Boron trifluoride, compressed	30 m	(100 ft)	0.1 km (0.1 mi)	0.1 km (0.1 mi)	150 m (500 ft)	0.7 km (0.5 mi)	2.7 km (1.7 mi)	
1016	Carbon monoxide	60 m	(200 ft)	0.4 km (0.3 mi)	1.6 km (1.0 mi)	600 m (2000 ft)	3.5 km (2.2 mi)	8.0 km (5.0 mi)	
1016	Carbon monoxide, compressed	30 m	(100 ft)	0.1 km (0.1 mi)	0.1 km (0.1 mi)	60 m (200 ft)	0.3 km (0.2 mi)	0.4 km (0.3 mi)	
1017	Chlorine	30 m	(100 ft)	0.2 km (0.1 mi)	0.9 km (0.5 mi)	150 m (500 ft)	1.0 km (0.7 mi)	3.5 km (2.2 mi)	
1023	Coal gas	30 m	(100 ft)	0.1 km (0.1 mi)	0.1 km (0.1 mi)	60 m (200 ft)	0.3 km (0.2 mi)	0.4 km (0.3 mi)	
1023	Coal gas, compressed	30 m	(100 ft)	0.1 km (0.1 mi)	0.1 km (0.1 mi)	60 m (200 ft)	0.3 km (0.2 mi)	0.4 km (0.3 mi)	
1026	Cyanogen	30 m	(100 ft)	0.2 km (0.1 mi)	0.9 km (0.5 mi)	150 m (500 ft)	1.0 km (0.7 mi)	3.5 km (2.2 mi)	
1026	Cyanogen gas	30 m	(100 ft)	0.1 km (0.1 mi)	0.2 km (0.1 mi)	150 m (500 ft)	0.8 km (0.5 mi)	2.5 km (1.6 mi)	
1040	Ethylene oxide	30 m	(100 ft)	0.1 km (0.1 mi)	0.2 km (0.1 mi)	150 m (500 ft)	0.8 km (0.5 mi)	2.5 km (1.6 mi)	
1040	Ethylene oxide with Nitrogen	30 m	(100 ft)	0.1 km (0.1 mi)	0.3 km (0.2 mi)	150 m (500 ft)	0.8 km (0.5 mi)	3.1 km (1.9 mi)	
1045	Fluorine	30 m	(100 ft)	0.1 km (0.1 mi)	0.4 km (0.3 mi)	300 m (1000 ft)	1.5 km (1.0 mi)	4.5 km (2.8 mi)	
1045	Fluorine, compressed	30 m	(100 ft)	0.1 km (0.1 mi)	0.4 km (0.2 mi)	60 m (200 ft)	0.3 km (0.2 mi)	1.4 km (0.9 mi)	
1048	Hydrogen bromide, anhydrous	30 m	(100 ft)	0.1 km (0.1 mi)	0.4 km (0.2 mi)	60 m (200 ft)	0.3 km (0.2 mi)	1.4 km (0.9 mi)	
1050	Hydrogen chloride, anhydrous	30 m	(100 ft)	0.1 km (0.1 mi)	0.4 km (0.2 mi)	60 m (200 ft)	0.3 km (0.2 mi)	1.4 km (0.9 mi)	
1051	AC (when used as a weapon)	100 m	(300 ft)	0.3 km (0.2 mi)	1.1 km (0.7 mi)	1000 m (3000 ft)	3.8 km (2.4 mi)	7.2 km (4.5 mi)	
1051	Hydrocyanic acid, aqueous solutions, with more than 20% Hydrogen cyanide	60 m	(200 ft)	0.2 km (0.1 mi)	0.6 km (0.4 mi)	400 m (1250 ft)	1.6 km (1.0 mi)	4.1 km (2.5 mi)	
1051	Hydrogen cyanide, anhydrous, stabilized								
1051	Hydrogen cyanide, stabilized								
1052	Hydrogen fluoride, anhydrous	30 m	(100 ft)	0.1 km (0.1 mi)	0.5 km (0.3 mi)	300 m (1000 ft)	1.7 km (1.1 mi)	3.6 km (2.2 mi)	



# Green Border Pages

**Table 1 - Initial Isolation and Protective Action Distances**

- Area likely endangered in first 30 minutes
- **FIRE** may make the toxicity less important than fire or explosion hazard
- Vapors may be channeled in valleys or tall buildings

**TABLE 1 - INITIAL ISOLATION AND PROTECTIVE ACTION DISTANCES**

ID No.	NAME OF MATERIAL	SMALL SPILLS (From a small package or small leak from a large package)				LARGE SPILLS (From a large package or from many small packages)							
		First ISOLATE in all Directions		Then PROTECT persons Downwind during-		First ISOLATE in all Directions		Then PROTECT persons Downwind during-					
		Meters	(Feet)	DAY Kilometers (Miles)	NIGHT Kilometers (Miles)	Meters	(Feet)	DAY Kilometers (Miles)	NIGHT Kilometers (Miles)				
1005	Ammonia, anhydrous	30 m	(100 ft)	0.1 km	(0.1 mi)	0.2 km	(0.1 mi)	150 m	(500 ft)	0.8 km	(0.5 mi)	2.3 km	(1.4 mi)
1005	Anhydrous ammonia												
1008	Boron trifluoride	30 m	(100 ft)	0.1 km	(0.1 mi)	0.6 km	(0.4 mi)	300 m	(1000 ft)	1.9 km	(1.2 mi)	4.8 km	(3.0 mi)
1008	Boron trifluoride, compressed												
1016	Carbon monoxide	30 m	(100 ft)	0.1 km	(0.1 mi)	0.1 km	(0.1 mi)	150 m	(500 ft)	0.7 km	(0.5 mi)	2.7 km	(1.7 mi)
1016	Carbon monoxide, compressed												
1017	Chlorine	60 m	(200 ft)	0.4 km	(0.3 mi)	1.6 km	(1.0 mi)	600 m	(2000 ft)	3.5 km	(2.2 mi)	8.0 km	(5.0 mi)
1023	Coal gas	30 m	(100 ft)	0.1 km	(0.1 mi)	0.1 km	(0.1 mi)	60 m	(200 ft)	0.3 km	(0.2 mi)	0.4 km	(0.3 mi)
1023	Coal gas, compressed												
1026	Cyanogen	30 m	(100 ft)	0.2 km	(0.1 mi)	0.9 km	(0.5 mi)	150 m	(500 ft)	1.0 km	(0.7 mi)	3.5 km	(2.2 mi)
1026	Cyanogen gas												
1040	Ethylene oxide	30 m	(100 ft)	0.1 km	(0.1 mi)	0.2 km	(0.1 mi)	150 m	(500 ft)	0.8 km	(0.5 mi)	2.5 km	(1.6 mi)
1040	Ethylene oxide with Nitrogen												
1045	Fluorine	30 m	(100 ft)	0.1 km	(0.1 mi)	0.3 km	(0.2 mi)	150 m	(500 ft)	0.8 km	(0.5 mi)	3.1 km	(1.9 mi)
1045	Fluorine, compressed												
1048	Hydrogen bromide, anhydrous	30 m	(100 ft)	0.1 km	(0.1 mi)	0.4 km	(0.3 mi)	300 m	(1000 ft)	1.5 km	(1.0 mi)	4.5 km	(2.8 mi)
1050	Hydrogen chloride, anhydrous	30 m	(100 ft)	0.1 km	(0.1 mi)	0.4 km	(0.2 mi)	60 m	(200 ft)	0.3 km	(0.2 mi)	1.4 km	(0.9 mi)
1051	AC (when used as a weapon)	100 m	(300 ft)	0.3 km	(0.2 mi)	1.1 km	(0.7 mi)	1000 m	(3000 ft)	3.8 km	(2.4 mi)	7.2 km	(4.5 mi)
1051	Hydrocyanic acid, aqueous solutions, with more than 20% Hydrogen cyanide	60 m	(200 ft)	0.2 km	(0.1 mi)	0.6 km	(0.4 mi)	400 m	(1250 ft)	1.6 km	(1.0 mi)	4.1 km	(2.5 mi)
1051	Hydrogen cyanide, anhydrous, stabilized												
1051	Hydrogen cyanide, stabilized												
1052	Hydrogen fluoride, anhydrous	30 m	(100 ft)	0.1 km	(0.1 mi)	0.5 km	(0.3 mi)	300 m	(1000 ft)	1.7 km	(1.1 mi)	3.6 km	(2.2 mi)



# Green Border Pages

## Table 1 - Initial Isolation and Protective Action Distances

1051	117	Hydrocyanic acid, aqueous solutions, with more than 20% Hydrogen cyanide	60 m (200 ft)	0.2 km (0.1 mi)	0.6 km (0.4 mi)	400 m (1250 ft)	1.4 km (0.9 mi)	3.8 km (2.4 mi)
1051	117	Hydrogen cyanide, anhydrous, stabilized						
1051	117	Hydrogen cyanide, stabilized						
1052 *	125	Hydrogen fluoride, anhydrous	30 m (100 ft)	0.1 km (0.1 mi)	0.5 km (0.3 mi)	300 m (1000 ft)	1.5 km (0.9 mi)	3.2 km (2.0 mi)
1053	117	Hydrogen sulfide	30 m (100 ft)	0.1 km (0.1 mi)	0.4 km (0.3 mi)	300 m (1000 ft)	1.7 km (1.0 mi)	5.6 km (3.5 mi)

"+" means distance can be larger in certain atmospheric conditions

\* PLEASE ALSO CONSULT TABLE 3 FOR THIS MATERIAL

1067	124	Dinitrogen tetroxide	30 m (100 ft)	0.1 km (0.1 mi)	0.4 km (0.2 mi)	300 m (1000 ft)	1.1 km (0.7 mi)	2.7 km (1.7 mi)
1067	124	Nitrogen dioxide						
1069	125	Nitrosyl chloride	30 m (100 ft)	0.2 km (0.2 mi)	1.1 km (0.7 mi)	600 m (2000 ft)	3.6 km (2.3 mi)	9.5 km (5.9 mi)
1071	119	Oil gas	60 m (200 ft)	0.2 km (0.1 mi)	0.2 km (0.1 mi)	100 m (300 ft)	0.4 km (0.2 mi)	0.5 km (0.3 mi)
1071	119	Oil gas, compressed						
1076	125	CG (when used as a weapon)	150 m (500 ft)	0.8 km (0.5 mi)	3.2 km (2.0 mi)	1000 m (3000 ft)	7.5 km (4.7 mi)	11.0+ km (7.0+ mi)
1076	125	Diphosgene	30 m (100 ft)	0.2 km (0.1 mi)	0.2 km (0.1 mi)	30 m (100 ft)	0.3 km (0.2 mi)	0.5 km (0.3 mi)
1076	125	DP (when used as a weapon)	30 m (100 ft)	0.2 km (0.1 mi)	0.7 km (0.4 mi)	200 m (600 ft)	1.0 km (0.7 mi)	2.4 km (1.5 mi)
1076	125	Phosgene	100 m (300 ft)	0.6 km (0.4 mi)	2.7 km (1.7 mi)	500 m (1500 ft)	3.1 km (1.9 mi)	10.8 km (6.7 mi)
1079 *	125	Sulfur dioxide	100 m (300 ft)	0.7 km (0.4 mi)	2.8 km (1.7 mi)	1000 m (3000 ft)	5.6 km (3.5 mi)	11.0+ km (7.0+ mi)
1079 *	125	Sulphur dioxide						
1082	119P	Trifluorochloroethylene, stabilized	30 m (100 ft)	0.1 km (0.1 mi)	0.2 km (0.1 mi)	60 m (200 ft)	0.4 km (0.3 mi)	0.9 km (0.6 mi)
1092	131P	Acrolein, stabilized	150 m (500 ft)	1.4 km (0.9 mi)	4.0 km (2.5 mi)	800 m (2500 ft)	9.3 km (5.8 mi)	11.0+ km (7.0+ mi)
1098	131	Allyl alcohol	30 m (100 ft)	0.1 km (0.1 mi)	0.1 km (0.1 mi)	60 m (200 ft)	0.3 km (0.2 mi)	0.5 km (0.3 mi)

Page 293

"+" means distance can be larger in certain atmospheric conditions

\* PLEASE ALSO CONSULT TABLE 3 FOR THIS MATERIAL



# Green Border Pages

## Table 2 - Water-Reactive Materials Which Produce Toxic Gases When Spilled in Water

TABLE 2 - WATER-REACTIVE MATERIALS WHICH PRODUCE TOXIC GASES			
Materials Which Produce Large Amounts of Toxic-by-Inhalation (TIH) Gas(es) When Spilled in Water			
ID No.	Guide No.	Name of Material	TIH Gas(es) Produced
1162	155	Dimethyldichlorosilane	HCl
1183	139	Ethyldichlorosilane	HCl
1196	155	Ethyltrichlorosilane	HCl
1242	139	Methyldichlorosilane	HCl
1250	155	Methyltrichlorosilane	HCl
1295	139	Trichlorosilane	HCl
1298	155	Trimethylchlorosilane	HCl
1305	155P	Vinyltrichlorosilane	HCl
1305	155P	Vinyltrichlorosilane, stabilized	HCl
1340	139	Phosphorus pentasulfide, free from yellow and white Phosphorus	H <sub>2</sub> S



# Green Border Pages

## Table 3 – Initial Isolation and Protective Action Distances for Different Quantities of Six Common TIH Gases

**HOW TO USE TABLE 3 – INITIAL ISOLATION AND PROTECTIVE ACTION DISTANCES FOR DIFFERENT QUANTITIES OF SIX COMMON TIH GASES**

Table 3 lists Toxic Inhalation Hazard materials that may be more commonly encountered.

The selected materials are:

- Ammonia (UN1005)
- Chlorine (UN1017)
- Ethylene oxide (UN1040)
- Hydrogen chloride (UN1050) and Hydrogen chloride, refrigerated liquid (UN2186)
- Hydrogen fluoride (UN1052)
- Sulfur dioxide/Sulphur dioxide (UN1079)

The materials are presented in alphabetical order and provide Initial Isolation and Protective Action Distances for large spills (more than 208 liters or 55 US gallons) involving different container types (therefore different volume capacities) for day time and night time situations and different wind speeds.

**TABLE 3 - INITIAL ISOLATION AND PROTECTIVE ACTION DISTANCES FOR DIFFERENT QUANTITIES OF SIX COMMON TIH GASES**

TRANSPORT CONTAINER	First ISOLATE In all Directions Meters (Feet)	Then PROTECT persons Downwind during					
		DAY			NIGHT		
		Low wind (<6 mph <10 km/h) Km (Miles)	Moderate wind 6-12 mph 10-20 km/h) Km (Miles)	High wind (>12 mph >20 km/h) Km (Miles)	Low wind (<6 mph <10 km/h) Km (Miles)	Moderate wind (6-12 mph 10-20 km/h) Km (Miles)	High wind (>12 mph >20 km/h) Km (Miles)
<b>UN1005 Ammonia, anhydrous: Large Spills</b>							
Rail tank car	300 (1000)	2.3 (1.4)	1.3 (0.8)	1.0 (0.6)	6.3 (3.9)	2.6 (1.6)	1.3 (0.8)
Highway tank truck or trailer	125 (400)	1.0 (0.6)	0.5 (0.3)	0.3 (0.2)	2.6 (1.6)	0.8 (0.5)	0.5 (0.3)
Agricultural nurse tank	60 (200)	0.6 (0.4)	0.3 (0.2)	0.3 (0.2)	1.5 (0.9)	0.5 (0.3)	0.3 (0.2)
Multiple small cylinders	30 (100)	0.3 (0.2)	0.2 (0.1)	0.2 (0.1)	0.8 (0.5)	0.3 (0.2)	0.2 (0.1)
<b>UN1017 Chlorine: Large Spills</b>							
Rail tank car	1000 (3000)	11+ (7+)	9.0 (5.6)	5.5 (3.4)	11+ (7+)	11+ (7+)	7.1 (4.4)
Highway tank truck or trailer	1000 (3000)	10.6 (6.6)	3.5 (2.2)	2.9 (1.8)	11+ (7+)	5.5 (3.4)	4.2 (2.6)
Multiple ton cylinders	400 (1250)	4.0 (2.5)	1.5 (0.9)	1.1 (0.7)	7.9 (4.9)	2.7 (1.7)	1.5 (0.9)
Multiple small cylinders or single ton cylinder	250 (800)	2.6 (1.6)	1.0 (0.6)	0.8 (0.5)	5.6 (3.5)	1.8 (1.1)	0.8 (0.5)

\*+ means distance can be larger in certain atmospheric conditions



# Green Border Pages

## Table 3 – Initial Isolation and Protective Action Distances for Different Quantities of Six Common TIH Gases

- ✓ Six Common TIH Gases
- ✓ Alphabetical Order
- ✓ Large Spills over 55gal
- ✓ Day time / Night time
- ✓ Accounts for Wind Speed

### HOW TO USE TABLE 3 – INITIAL ISOLATION AND PROTECTIVE ACTION DISTANCES FOR DIFFERENT QUANTITIES OF SIX COMMON TIH GASES

Table 3 lists Toxic Inhalation Hazard materials that may be more commonly encountered.

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- Hydrogen fluoride (UN1052)
- Sulfur dioxide/Sulphur dioxide (UN1079)

The materials are presented in alphabetical order and provide Initial Isolation and Protective Action Distances for large spills (more than 208 liters or 55 US gallons) involving different container types (therefore different volume capacities) for day time and night time situations and different wind speeds.



# Green Border Pages

**Table 3 – Initial Isolation and Protective Action Distances for Different Quantities of Six Common TIH Gases**

TABLE 3 - INITIAL ISOLATION AND PROTECTIVE ACTION DISTANCES FOR DIFFERENT QUANTITIES OF SIX COMMON TIH GASES									
TRANSPORT CONTAINER	UN1005 Ammonia, anhydrous: Large Spills								
	First ISOLATE in all Directions	Then PROTECT persons Downwind during							
		DAY				NIGHT			
		Low wind (< 6 mph = < 10 km/h)	Moderate wind (6-12 mph = 10 - 20 km/h)	High wind (> 12 mph = > 20 km/h)	Low wind (< 6 mph = < 10 km/h)	Moderate wind (6-12 mph = 10 - 20 km/h)	High wind (> 12 mph = > 20 km/h)		
Meters (Feet)	Km (Miles)	Km (Miles)	Km (Miles)	Km (Miles)	Km (Miles)	Km (Miles)	Km (Miles)	Km (Miles)	
Rail tank car	300 (1000)	2.3 (1.4)	1.3 (0.8)	1.0 (0.6)	6.3 (3.9)	2.6 (1.6)	1.3 (0.8)		
Highway tank truck or trailer	125 (400)	1.0 (0.6)	0.5 (0.3)	0.3 (0.2)	2.6 (1.6)	0.8 (0.5)	0.5 (0.3)		
Agricultural nurse tank	60 (200)	0.6 (0.4)	0.3 (0.2)	0.3 (0.2)	1.5 (0.9)	0.5 (0.3)	0.3 (0.2)		
Multiple small cylinders	30 (100)	0.3 (0.2)	0.2 (0.1)	0.2 (0.1)	0.8 (0.5)	0.3 (0.2)	0.2 (0.1)		



## Special Circumstances

### **EXPLOSIVES - ALL!!**

Use Guide 112 for all explosives

*Except:*

1.4, 1.6 then use 114

**If vehicle or material is on fire,  
consider 1 mile isolation/evacuation  
distance immediately!!!**



## Special Circumstances

- No placard, identification number or shipping name is available, but you suspect hazardous materials
- **Examples:**
  - People collapse without apparent cause
  - Colored smoke or vapors emanating from scene
  - Chemical odors from scene



# Special Circumstances

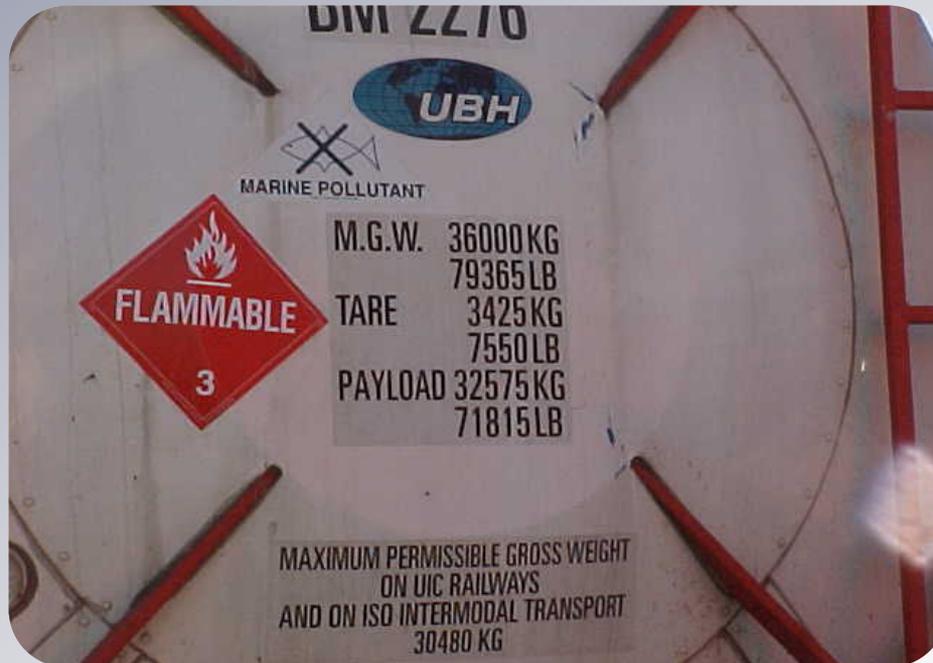
- Take immediate **SIN** action!
  - **Safety-** Retreat to safe distance
  - **Isolate** the area
  - **Notify**
- Turn to Guide 111 for guidance

GUIDE 111	MIXED LOAD/UNIDENTIFIED CARGO	ERG2004	ERG2004	MIXED LOAD/UNIDENTIFIED CARGO	GUIDE 111
<b>POTENTIAL HAZARDS</b>			<b>EMERGENCY RESPONSE</b>		
<b>FIRE OR EXPLOSION</b> <ul style="list-style-type: none"><li>• May explode from heat, shock, friction or contamination.</li><li>• May react violently or explosively on contact with air, water or foam.</li><li>• May be ignited by heat, sparks or flames.</li><li>• Vapors may travel to source of ignition and flash back.</li><li>• Containers may explode when heated.</li><li>• Ruptured cylinders may rocket.</li></ul>			<b>FIRE</b> CAUTION: Material may react with extinguishing agent. <b>Small Fires</b> <ul style="list-style-type: none"><li>• Dry chemical, CO<sub>2</sub>, water spray or regular foam.</li></ul> <b>Large Fires</b> <ul style="list-style-type: none"><li>• Water spray, fog or regular foam.</li><li>• Move containers from fire area if you can do it without risk.</li></ul> <b>Fire involving Tanks</b> <ul style="list-style-type: none"><li>• Cool containers with flooding quantities of water until well after fire is out.</li><li>• Do not get water inside containers.</li><li>• Withdraw immediately in case of rising sound from venting safety devices or discoloration of tank.</li><li>• ALWAYS stay away from tanks engulfed in fire.</li></ul>		
<b>HEALTH</b> <ul style="list-style-type: none"><li>• Inhalation, ingestion or contact with substance may cause severe injury, infection, disease or death.</li><li>• High concentration of gas may cause asphyxiation without warning.</li><li>• Contact may cause burns to skin and eyes.</li><li>• Fire or contact with water may produce irritating, toxic and/or corrosive gases.</li><li>• Runoff from fire control may cause pollution.</li></ul>			<b>SPILL OR LEAK</b> <ul style="list-style-type: none"><li>• Do not touch or walk through spilled material.</li><li>• ELIMINATE all ignition sources (no smoking, flares, sparks or flames in immediate area).</li><li>• All equipment used when handling the product must be grounded.</li><li>• Keep combustibles (wood, paper, oil, etc.) away from spilled material.</li><li>• Use water spray to reduce vapors or divert vapor cloud drift. Avoid allowing water runoff to contact spilled material.</li><li>• Prevent entry into waterways, sewers, basements or confined areas.</li></ul> <b>Small Spills:</b> Take up with sand or other non-combustible absorbent material and place into containers for later disposal. <b>Large Spills:</b> Dike far ahead of liquid spill for later disposal.		
<b>PUBLIC SAFETY</b> <ul style="list-style-type: none"><li>• 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.</li><li>• As an immediate precautionary measure, isolate spill or leak area for at least 100 meters (330 feet) in all directions.</li><li>• Keep unauthorized personnel away.</li><li>• Stay upwind.</li><li>• Keep out of low areas.</li></ul>					
<b>PROTECTIVE CLOTHING</b> <ul style="list-style-type: none"><li>• Wear positive pressure self-contained breathing apparatus (SCBA).</li><li>• Structural firefighters' protective clothing provides limited protection in fire situations ONLY; it may not be effective in spill situations.</li></ul>					
<b>EVACUATION</b> <b>Fire</b> <ul style="list-style-type: none"><li>• 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 900 meters (1/2 mile) in all directions.</li></ul>			<b>FIRST AID</b> <ul style="list-style-type: none"><li>• Move victim to fresh air. • Call 911 or emergency medical service.</li><li>• Give artificial respiration if victim is not breathing.</li><li>• 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.</li><li>• Administer oxygen if breathing is difficult.</li><li>• Remove and isolate contaminated clothing and shoes.</li><li>• In case of contact with substance, immediately flush skin or eyes with running water for at least 20 minutes.</li><li>• Shower and wash with soap and water.</li><li>• Keep victim warm and quiet.</li><li>• Effects of exposure (inhalation, ingestion or skin contact) to substance may be delayed.</li><li>• Ensure that medical personnel are aware of the material(s) involved and take precautions to protect themselves.</li></ul>		
Page 170			Page 171		



# WHITE PAGES

**What Would You Do if a Placard is Visible, BUT  
No Other Information is Available?**





# WHITE PAGES

If a placard is visible, **BUT** no other information is available:

- GO TO Pages 6 and 7
- Find the placard
- Locate the Guide number beside the placard
- Turn to Guide for response information

**TABLE OF PLACARDS AND INITIAL**  
USE THIS TABLE ONLY IF MATERIALS CANNOT BE SPECIFICALLY IDENTIFIED BY

**RESPONSE GUIDE TO USE ON-SCENE**  
USING THE SHIPPING DOCUMENT, NUMBERED PLACARD, OR ORANGE PANEL NUMBER

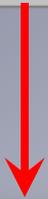
Page 6

Page 7



## Yellow and Blue Border Pages Require:

Identification number



ID No.	Guide No.	Name of Material
--------	-----------	------------------

1030	115	1,1-Difluoroethane
1030	115	Difluoroethane
1030	115	Refrigerant gas R-152a
1032	118	Dimethylamine, anhydrous

Proper Shipping name



Name of Material	Guide No.	ID No.
------------------	-----------	--------

AC	117	1051
Accumulators, pressurized, pneumatic or hydraulic	126	1956
Acetal	127	1088
Acetaldehyde	129	1089



# Proper Shipping Name

Obtain Proper Shipping Name From Package Marking(s)





# Proper Shipping Name

Obtain Proper Shipping Name From Shipping Papers

NUMBER OF		HM	DESCRIPTION AND CLASSIFICATION	WEIGHT (SUBJECT TO CORRECTIONS)
CARTONS	PAIS			
		X	PAINT, 3, UN1263, PG II	
	32	X	PAINT, 3, UN1263, PG III	880
		X	PAINT RELATED MATERIALS, 3, UN1263, PG II	
	5	X	PAINT RELATED MATERIALS, 3, UN1263, PG III	275
		X	ZINC DUST, 4.3, UN1436, PG III	
		X	FLAMMABLE LIQUIDS, N.O.S., 3, UN1993, PG II	
		X	FLAMMABLE LIQUIDS, CORROSIVE LIQUIDS, N.O.S., 3, UN2924, PG III	
		X	FLAMMABLE LIQUIDS, POISONOUS N.O.S., 3, UN1992, PG III	
		X	COAL TAR DISTILLATES, 3, UN1136, PG III	
		X	ENVIRONMENTALLY HAZARDOUS SUBSTANCES, N.O.S., 9, UN3082, PG III	
			PAINT AND PAINT RELATED MATERIALS, LIQUID NON HAZARDOUS	
			ZINC DUST, 4.3, UN1436, PG III	



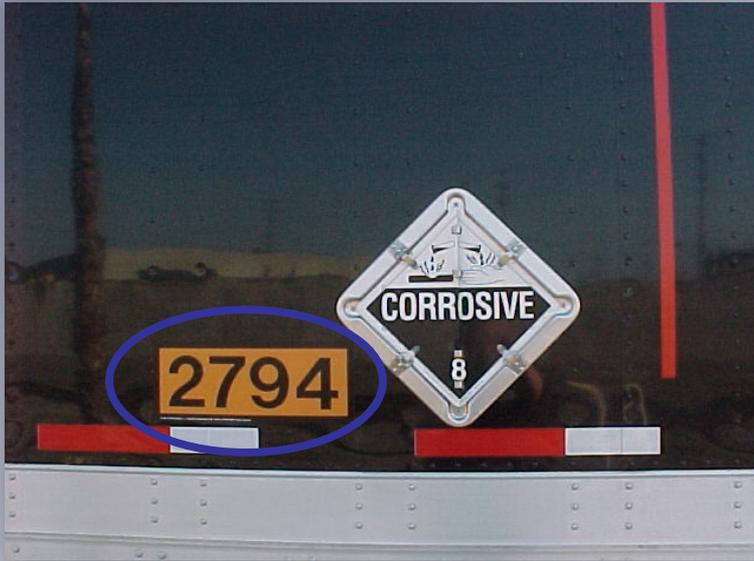
# Proper Shipping Papers





# Identification Number

Identification Numbers Can Be Obtained From:



**Orange Panel**



**Placard**



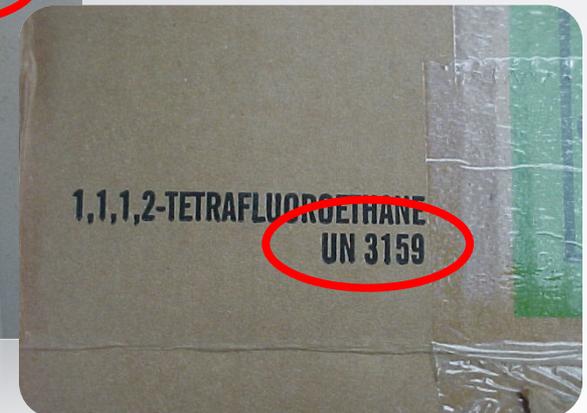
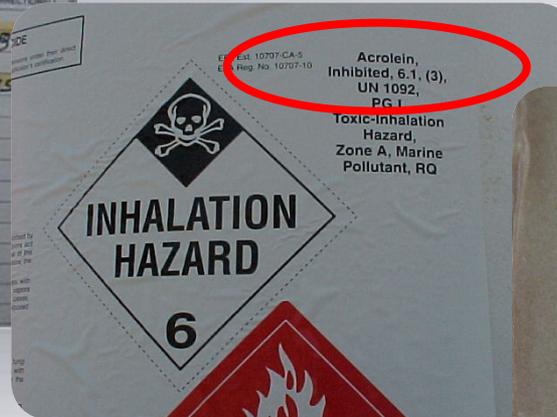
# Identification Number

Identification Numbers Can Be Obtained From:

ROUTE *SAN PEDRO* State of *CA* County of

NUMBER OF CARTONS	PAIS	HM	DESCRIPTION AND CLASSIFICATION	WEIGHT (SUBJECT TO CORRECTIONS)
		X	PAINT, 3, UN1263, PG II	
<i>3</i>	<i>4</i>	X	PAINT, 3, UN1263, PG III	<i>88</i> lbs
		X	PAINT RELATED MATERIALS, 3, UN1263, PG II	
<i>5</i>		X	PAINT RELATED MATERIALS, 3, UN1263, PG III	<i>275</i> lbs
		X	PAINT, 4, UN1436, PG III	
		X	FLAMMABLE LIQUIDS, N.O.S., 3, UN1993, PG III	
		X	FLAMMABLE LIQUIDS, CORROSIVE LIQUIDS, N.O.S., 3, UN2924, PG III	
		X	FLAMMABLE LIQUIDS, POISONOUS N.O.S., 3, UN1992, PG III	
		X	COAL TAR DISTILLATES, 3, UN1136, PG III	
		X	ENVIRONMENTALLY HAZARDOUS SUBSTANCES, N.O.S., 9, UN3082, PG III	
			PAINT AND PAINT RELATED MATERIALS, LIQUID NON HAZARDOUS	

Shipping paper



Package marking



# Yellow and Blue Border Pages

Look in Second Column for Guide Number

1075	<b>115</b>	Isobutane mixture	1099	<b>131</b>	Allyl bromide
1075	<b>115</b>	Isobutylene	1100	<b>131</b>	Allyl chloride
1075	<b>115</b>	Liquefied petroleum gas	1104	<b>129</b>	Amyl acetates
1075	<b>115</b>	LPG	1105	<b>129</b>	Amyl alcohols
1075	<b>115</b>	Petroleum gases, liquefied	1105	<b>129</b>	Pentanol
1075	<b>115</b>	Propane	1106	<b>132</b>	Amylamines
1075	<b>115</b>	Propene mixture	1107	<b>131</b>	Amyl chloride

Benzene	<b>130</b>	1114	Beryllium nitrate	<b>141</b>	2464
Benzene phosphorus dichloride	<b>137</b>	2798	Beryllium powder	<b>134</b>	1567
Benzene phosphorus thiodichloride	<b>137</b>	2799	Bhusa, wet, damp or contaminated with oil	<b>133</b>	1327
Benzenesulfonyl chloride	<b>156</b>	2225	Bicyclo[2.2.1]hepta-2,5-diene, stabilized	<b>128</b>	2251
Benzenesulphonyl chloride	<b>156</b>	2225	Biological agents	<b>158</b>	—
Benzidine	<b>153</b>	1885			



# Yellow and Blue Border Pages

Go to Indicated Guide Number

GUIDE 111	MIXED LOAD/UNIDENTIFIED CARGO	ERG2004	ERG2004	MIXED LOAD/UNIDENTIFIED CARGO	GUIDE 111
<p style="text-align: center;"><b>POTENTIAL HAZARDS</b></p> <p><b>FIRE OR EXPLOSION</b></p> <ul style="list-style-type: none"> <li>• May explode from heat, shock, friction or contamination.</li> <li>• May react violently or explosively on contact with air, water or foam.</li> <li>• May be ignited by heat, sparks or flames.</li> <li>• Vapors may travel to source of ignition and flash back.</li> <li>• Containers may explode when heated.</li> <li>• Ruptured cylinders may rocket.</li> </ul> <p><b>HEALTH</b></p> <ul style="list-style-type: none"> <li>• Inhalation, ingestion or contact with substance may cause severe injury, infection, disease or death.</li> <li>• High concentration of gas may cause asphyxiation without warning.</li> <li>• Contact may cause burns to skin and eyes.</li> <li>• Fire or contact with water may produce irritating, toxic and/or corrosive gases.</li> <li>• Runoff from fire control may cause pollution.</li> </ul> <p style="text-align: center;"><b>PUBLIC SAFETY</b></p> <ul style="list-style-type: none"> <li>• 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.</li> <li>• As an immediate precautionary measure, isolate spill or leak area for at least 100 meters (330 feet) in all directions.</li> <li>• Keep unauthorized personnel away.</li> <li>• Stay upwind.</li> <li>• Keep out of low areas.</li> </ul> <p><b>PROTECTIVE CLOTHING</b></p> <ul style="list-style-type: none"> <li>• Wear positive pressure self-contained breathing apparatus (SCBA).</li> <li>• Structural firefighters' protective clothing provides limited protection in fire situations ONLY; it may not be effective in spill situations.</li> </ul> <p><b>EVACUATION</b></p> <p><b>Fire</b></p> <ul style="list-style-type: none"> <li>• 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.</li> </ul>			<p style="text-align: center;"><b>EMERGENCY RESPONSE</b></p> <p><b>FIRE</b></p> <p><b>CAUTION:</b> Material may react with extinguishing agent.</p> <p><b>Small Fires</b></p> <ul style="list-style-type: none"> <li>• Dry chemical, CO<sub>2</sub>, water spray or regular foam.</li> </ul> <p><b>Large Fires</b></p> <ul style="list-style-type: none"> <li>• Water spray, fog or regular foam.</li> <li>• Move containers from fire area if you can do it without risk.</li> </ul> <p><b>Fire Involving Tanks</b></p> <ul style="list-style-type: none"> <li>• Cool containers with flooding quantities of water until well after fire is out.</li> <li>• Do not get water inside containers.</li> <li>• Withdraw immediately in case of rising sound from venting safety devices or discoloration of tank.</li> <li>• ALWAYS stay away from tanks engulfed in fire.</li> </ul> <p><b>SPILL OR LEAK</b></p> <ul style="list-style-type: none"> <li>• Do not touch or walk through spilled material.</li> <li>• ELIMINATE all ignition sources (no smoking, flares, sparks or flames in immediate area).</li> <li>• All equipment used when handling the product must be grounded.</li> <li>• Keep combustibles (wood, paper, oil, etc.) away from spilled material.</li> <li>• Use water spray to reduce vapors or divert vapor cloud drift. Avoid allowing water runoff to contact spilled material.</li> <li>• Prevent entry into waterways, sewers, basements or confined areas.</li> </ul> <p><b>Small Spills</b> - Take up with sand or other non-combustible absorbent material and place into containers for later disposal.</p> <p><b>Large Spills</b> - Dike far ahead of liquid spill for later disposal.</p> <p><b>FIRST AID</b></p> <ul style="list-style-type: none"> <li>• Move victim to fresh air. • Call 911 or emergency medical service.</li> <li>• Give artificial respiration if victim is not breathing.</li> <li>• 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.</li> <li>• Administer oxygen if breathing is difficult.</li> <li>• Remove and isolate contaminated clothing and shoes.</li> <li>• In case of contact with substance, immediately flush skin or eyes with running water for at least 20 minutes.</li> <li>• Shower and wash with soap and water.</li> <li>• Keep victim warm and quiet.</li> <li>• Effects of exposure (inhalation, ingestion or skin contact) to substance may be delayed.</li> <li>• Ensure that medical personnel are aware of the material(s) involved and take precautions to protect themselves.</li> </ul>		
Page 170			Page 171		

Follow the Guidance Indicated



# Green Border Pages

## Table 1 - Initial Isolation and Protective Action Distances

### Required information:

- ID number
- Package size
- Day/night
- Wind direction

**TABLE 1 - INITIAL ISOLATION AND PROTECTIVE ACTION DISTANCES**

ID No.	NAME OF MATERIAL	SMALL SPILLS (From a small package or small leak from a large package)				LARGE SPILLS (From a large package or from many small packages)			
		First ISOLATE in all Directions		Then PROTECT persons Downwind during-		First ISOLATE in all Directions		Then PROTECT persons Downwind during-	
		Meters	(Feet)	DAY Kilometers (Miles)	NIGHT Kilometers (Miles)	Meters	(Feet)	DAY Kilometers (Miles)	NIGHT Kilometers (Miles)
1005	Ammonia, anhydrous	30 m	(100 ft)	0.1 km (0.1 mi)	0.2 km (0.1 mi)	150 m	(500 ft)	0.8 km (0.5 mi)	2.3 km (1.4 mi)
1005	Anhydrous ammonia								
1008	Boron trifluoride	30 m	(100 ft)	0.1 km (0.1 mi)	0.6 km (0.4 mi)	300 m	(1000 ft)	1.9 km (1.2 mi)	4.8 km (3.0 mi)
1008	Boron trifluoride, compressed								
1016	Carbon monoxide	30 m	(100 ft)	0.1 km (0.1 mi)	0.1 km (0.1 mi)	150 m	(500 ft)	0.7 km (0.5 mi)	2.7 km (1.7 mi)
1016	Carbon monoxide, compressed								
1017	Chlorine	60 m	(200 ft)	0.4 km (0.3 mi)	1.6 km (1.0 mi)	600 m	(2000 ft)	3.5 km (2.2 mi)	8.0 km (5.0 mi)
1023	Coal gas	30 m	(100 ft)	0.1 km (0.1 mi)	0.1 km (0.1 mi)	60 m	(200 ft)	0.3 km (0.2 mi)	0.4 km (0.3 mi)
1023	Coal gas, compressed								
1026	Cyanogen	30 m	(100 ft)	0.2 km (0.1 mi)	0.9 km (0.5 mi)	150 m	(500 ft)	1.0 km (0.7 mi)	3.5 km (2.2 mi)
1026	Cyanogen gas								
1040	Ethylene oxide	30 m	(100 ft)	0.1 km (0.1 mi)	0.2 km (0.1 mi)	150 m	(500 ft)	0.8 km (0.5 mi)	2.5 km (1.6 mi)
1040	Ethylene oxide with Nitrogen								
1045	Fluorine	30 m	(100 ft)	0.1 km (0.1 mi)	0.3 km (0.2 mi)	150 m	(500 ft)	0.8 km (0.5 mi)	3.1 km (1.9 mi)
1045	Fluorine, compressed								
1048	Hydrogen bromide, anhydrous	30 m	(100 ft)	0.1 km (0.1 mi)	0.4 km (0.3 mi)	300 m	(1000 ft)	1.5 km (1.0 mi)	4.5 km (2.8 mi)
1050	Hydrogen chloride, anhydrous	30 m	(100 ft)	0.1 km (0.1 mi)	0.4 km (0.2 mi)	60 m	(200 ft)	0.3 km (0.2 mi)	1.4 km (0.9 mi)
1051	AC (when used as a weapon)	100 m	(300 ft)	0.3 km (0.2 mi)	1.1 km (0.7 mi)	1000 m	(3000 ft)	3.8 km (2.4 mi)	7.2 km (4.5 mi)
1051	Hydrocyanic acid, aqueous solutions, with more than 20% Hydrogen cyanide	60 m	(200 ft)	0.2 km (0.1 mi)	0.6 km (0.4 mi)	400 m	(1250 ft)	1.6 km (1.0 mi)	4.1 km (2.5 mi)
1051	Hydrogen cyanide, anhydrous, stabilized								
1051	Hydrogen cyanide, stabilized								
1052	Hydrogen fluoride, anhydrous	30 m	(100 ft)	0.1 km (0.1 mi)	0.5 km (0.3 mi)	300 m	(1000 ft)	1.7 km (1.1 mi)	3.6 km (2.2 mi)



# Green Border Pages

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**TABLE 1 - INITIAL ISOLATION AND PROTECTIVE ACTION DISTANCES**

ID No.	NAME OF MATERIAL	SMALL SPILLS (From a small package or small leak from a large package)				LARGE SPILLS (From a large package or from many small packages)			
		First ISOLATE in all Directions		Then PROTECT persons Downwind during-		First ISOLATE in all Directions		Then PROTECT persons Downwind during-	
		Meters	(Feet)	DAY Kilometers (Miles)	NIGHT Kilometers (Miles)	Meters	(Feet)	DAY Kilometers (Miles)	NIGHT Kilometers (Miles)
1005	Ammonia, anhydrous	30 m	(100 ft)	0.1 km (0.1 mi)	0.2 km (0.1 mi)	150 m (500 ft)	0.8 km (0.5 mi)	2.3 km (1.4 mi)	
1005	Anhydrous ammonia								
1008	Boron trifluoride	30 m	(100 ft)	0.1 km (0.1 mi)	0.6 km (0.4 mi)	300 m (1000 ft)	1.9 km (1.2 mi)	4.8 km (3.0 mi)	
1008	Boron trifluoride, compressed								
1016	Carbon monoxide	30 m	(100 ft)	0.1 km (0.1 mi)	0.1 km (0.1 mi)	150 m (500 ft)	0.7 km (0.5 mi)	2.7 km (1.7 mi)	
1016	Carbon monoxide, compressed								
1017	Chlorine	60 m	(200 ft)	0.4 km (0.3 mi)	1.6 km (1.0 mi)	600 m (2000 ft)	3.5 km (2.2 mi)	8.0 km (5.0 mi)	
1023	Coal gas	30 m	(100 ft)	0.1 km (0.1 mi)	0.1 km (0.1 mi)	60 m (200 ft)	0.3 km (0.2 mi)	0.4 km (0.3 mi)	
1023	Coal gas, compressed								
1026	Cyanogen	30 m	(100 ft)	0.2 km (0.1 mi)	0.9 km (0.5 mi)	150 m (500 ft)	1.0 km (0.7 mi)	3.5 km (2.2 mi)	
1026	Cyanogen gas								
1040	Ethylene oxide	30 m	(100 ft)	0.1 km (0.1 mi)	0.2 km (0.1 mi)	150 m (500 ft)	0.8 km (0.5 mi)	2.5 km (1.6 mi)	
1040	Ethylene oxide with Nitrogen								
1045	Fluorine	30 m	(100 ft)	0.1 km (0.1 mi)	0.3 km (0.2 mi)	150 m (500 ft)	0.8 km (0.5 mi)	3.1 km (1.9 mi)	
1045	Fluorine, compressed								
1048	Hydrogen bromide, anhydrous						(1.0 mi)	4.5 km (2.8 mi)	
1050	Hydrogen chloride, anhydrous						(0.2 mi)	1.4 km (0.9 mi)	
1051	AC (when used as a weapon)						(2.4 mi)	7.2 km (4.5 mi)	
1051	Hydrocyanic acid, aqueous solutions, with more than 2% Hydrogen cyanide						(1.0 mi)	4.1 km (2.5 mi)	
1051	Hydrogen cyanide, anhydrous, stabilized								
1051	Hydrogen cyanide, stabilized								
1052	Hydrogen fluoride, anhydrous	30 m	(100 ft)	0.1 km (0.1 mi)	0.5 km (0.3 mi)	300 m (1000 ft)	1.7 km (1.1 mi)	3.6 km (2.2 mi)	

30m (100 ft)



## Green Border Pages

# WARNING

# DO NOT Confuse meters with feet !!!

If you isolate 30 feet  
instead of 100  
WHERE will you be?

First <b>ISOLATE</b> in ALL directions	
Meters	(Feet)
30 m	(100 ft)

# 70 feet **TOO** close



## Additional WHITE PAGE Information

- Protective Clothing
- Fire and Spill Control
- Criminal/Terrorist Use of Chemical/Biological/Radiological Agents
- Glossary





## Distribution of ERGs

- Distribution is facilitated through a network of volunteer state coordinators
- Downloadable version of 2012 ERG and a list of state coordinators is available on PHMSA's hazmat website

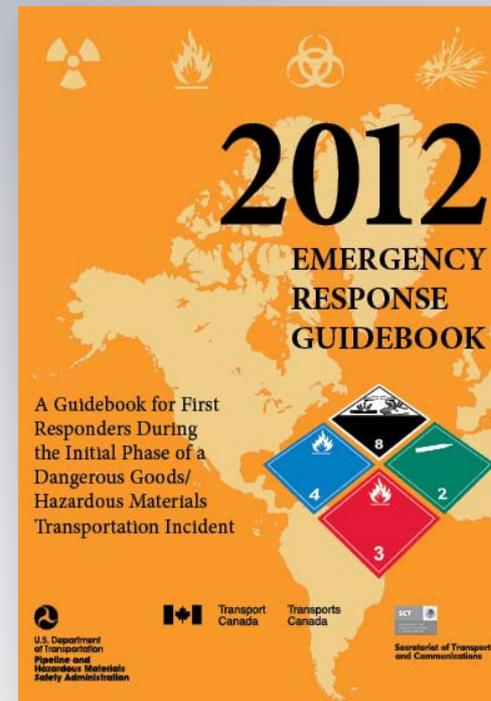
<http://hazmat.dot.gov/guidebook.htm>



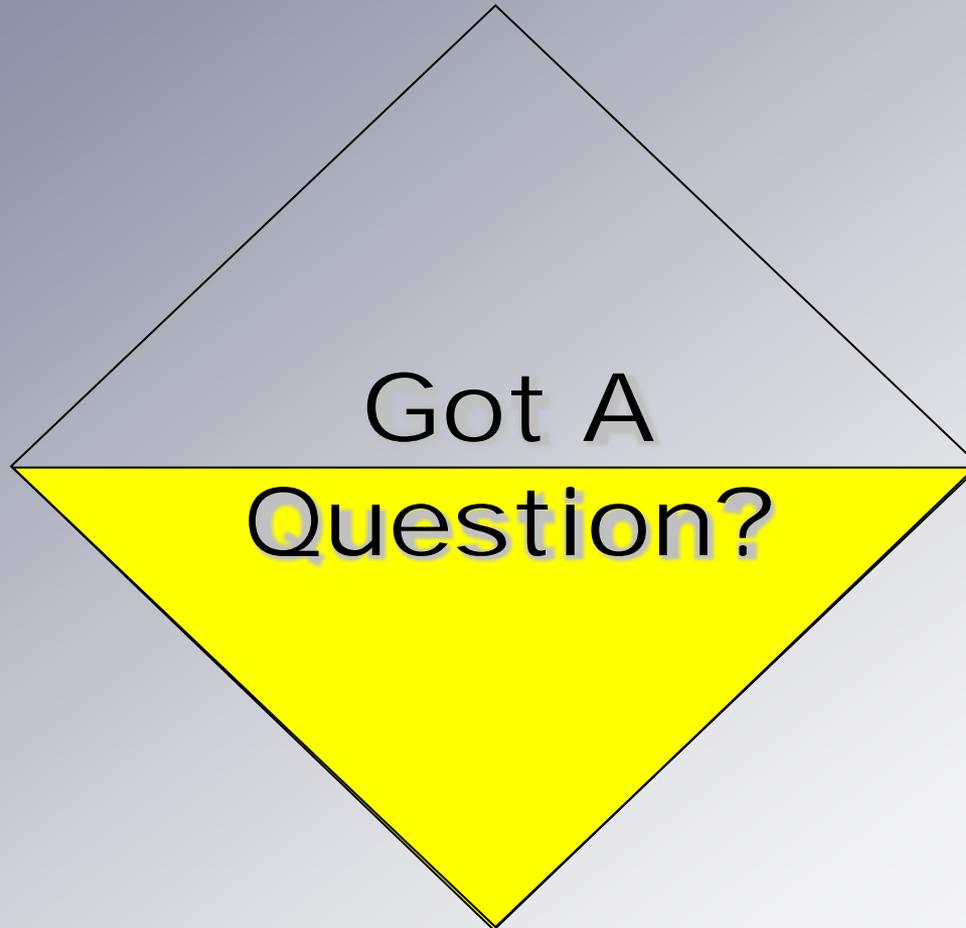
# ERG 2012

## Mobile Pocket and Windows PC

- Requests Received From Emergency Responders Indicate Need for ERG2012 Mobile
- ERG2012 Download Now Available
- Smartphone Software Coming
- Windows Print Function Coming



<http://hazmat.dot.gov/pubs/erg/guidebook.htm>





# Where to Find More Information...

**PHMSA**  
Pipeline and Hazardous Materials  
Safety Administration

U.S. Department of Transportation

Contact Us | FAQs | Site Map

PHMSA Home | Pipeline Safety | **Hazardous Materials Safety**

Go  Advanced Search

**2012 EMERGENCY RESPONSE GUIDEBOOK**  
A Guidebook for First Responders, Starting with the Incident, Planning and Response, and the Incident Response Guidebook, Hazardous Materials Transportation Incident

DOT Distributes Over 2 Million New Hazardous Materials Emergency Guidebooks to Nation's First Responders

1 2 3 4 5

**Hazmat News** | **Most Viewed Info**

**Safety Advisories**

- > [PHMSA Continues Push to Clarify & Update Hazmat Rules](#)
- > [2011 Hazmat Penalty Action Report](#)
- > [Hazmat Harmonization Rule on Air Packaging Issued](#)
- > [PHMSA seeks comment on transportation of lithium batteries](#)
- > [PHMSA Proposes Updating Hazmat Rules to Better Balance Safety Standards and Regulatory Requirements](#)

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**PHMSA/Hazmat Resources**

**Regulations & Rulemakings**  
PHMSA regulates and ensures the safe movement of hazardous materials.

**Data & Reports**  
PHMSA tracks data on the frequency of failures, incidents and accidents.

**Permits & Approvals**

<http://hazmat.dot.gov>



# Hazardous Material Info-Center

1-800-HMR-4922

(1-800-467-4922)

**E-mail: [infocntr@dot.gov](mailto:infocntr@dot.gov)**

**Hours of Operation: 9 am – 5 pm ET**



- Obtain answers to HMR questions
- Request copies of Federal Register, special permits or training materials
- Report HMR violations
- Fax on Demand