

Using the ERG – Participant

The Emergency Response Guidebook (ERG) provides summary information on potential hazards, public safety and emergency response to unintended releases of goods being transported by road, rail, air, water or pipeline. It is sometimes referred to as the North American ERG (NAERG) as Canadian transport requires the same systems. Training in use of the ERG is required for all levels of responder training (29CFR1910.120(q)(6)(i)(E)).

The ERG is issued every four years as a book and is also available in digital format for access on a computer, tablet, or smartphone (Android and iPhone). This exercise can be used for training with the book or digital format. An internet connection will be needed for the download but not for use of the app once it is loaded.

Objectives

When you have completed this exercise, you will be better able to:

- Identify hazard information using the ERG
- Identify response actions based on scenario provided
- Identify changes in tactical operations as conditions change

Review of the ERG

The Department of Transportation (DOT) system of placards and labels is required on hazardous materials during shipment. It is important to understand the systems which are used to identify hazardous materials. Hazard information is included on DOT placards fixed to large containers (trailers, rail cars, tanks) and manufacturer labels fixed to small containers (drums, packages, boxes).

Caution must be exercised, because labels and placards may be missing, incorrect, or difficult to read.

The DOT system of placards and labels is used with hazardous materials during shipment. What does the DOT system look like?

- Diamond-shaped.
- **Color-coded.**

Color	Hazard
Orange	Explosive
Red	Flammable or combustible
Green	Non-flammable gas
Yellow	Reactive oxidizer or organic peroxide
White	Toxic/Poisonous or infectious substance
White and red vertical stripes	Flammable solid
White top with black bottom	Corrosive
Blue	Dangerous when wet
Yellow top with white bottom	Radioactive
White top with red bottom	Spontaneously combustible

Below is an example of the DOT placard for flammable or combustible (red)



- **Word-coded (hazard class name).**

For example:

- Explosives
- Corrosive
- Dangerous (may be used with mixed loads)

Here is an example of the DOT placard for a radioactive hazard



- **Symbol-coded.**

Symbol	Hazard
Bursting ball	Explosive
Flame	Flammable/organic peroxide
W with slash	Dangerous when wet
Skull and crossbones	Poisonous
Circle and flame	Oxidizing material
Cylinder	Non-flammable gas
Propeller/Trefoil	Radioactive
Test tube/hand/metal	Corrosive
Special symbol	Infectious (discussed previously)

Below is a DOT placard with the symbol for a corrosive hazard



- Number-coded

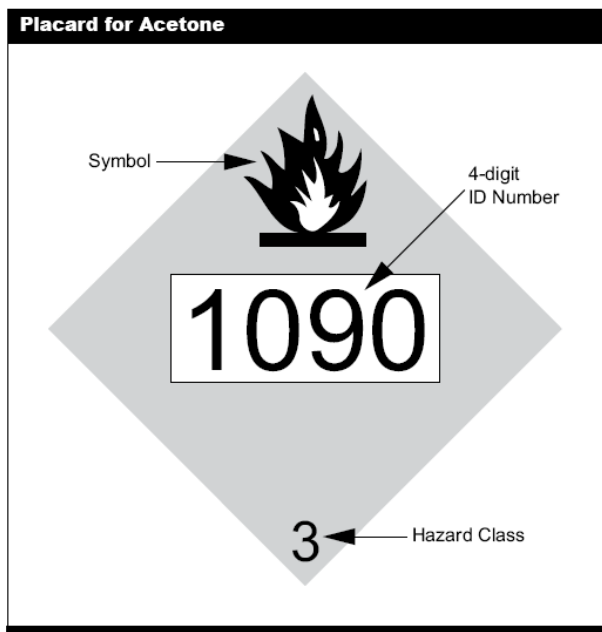
A **four-digit UN** number in the **center** identifies a specific compound. These numbers are identified in the ERG. For example, 1223 is kerosene. This number may be in the center of the placard or on an orange-colored panel below the placard.

The DOT placard above has the number 1760, which identifies it as one of several corrosive liquids.

The **one-digit** number at the **bottom** is the Hazard Identification Code.

<u>#</u>	<u>Hazard Class</u>
1	Explosives
2	Gases (compressed, liquefied, or dissolved under pressure)
3	Flammable liquids
4	Flammable solids or substances, spontaneously combustible materials, and dangerous when wet materials/ water-reactive materials.
5	Oxidizing substances and Organic peroxides
6	Poisonous and infectious substances
7	Radioactive substances
8	Corrosives
9	Miscellaneous dangerous substances/ organisms

The placard below is red with white symbols except for the black four-digit number. It tells you that the substance is Flammable (the flame and red background), a Flammable Liquid (Hazard Class 3), and Acetone (the four-digit number 1090).



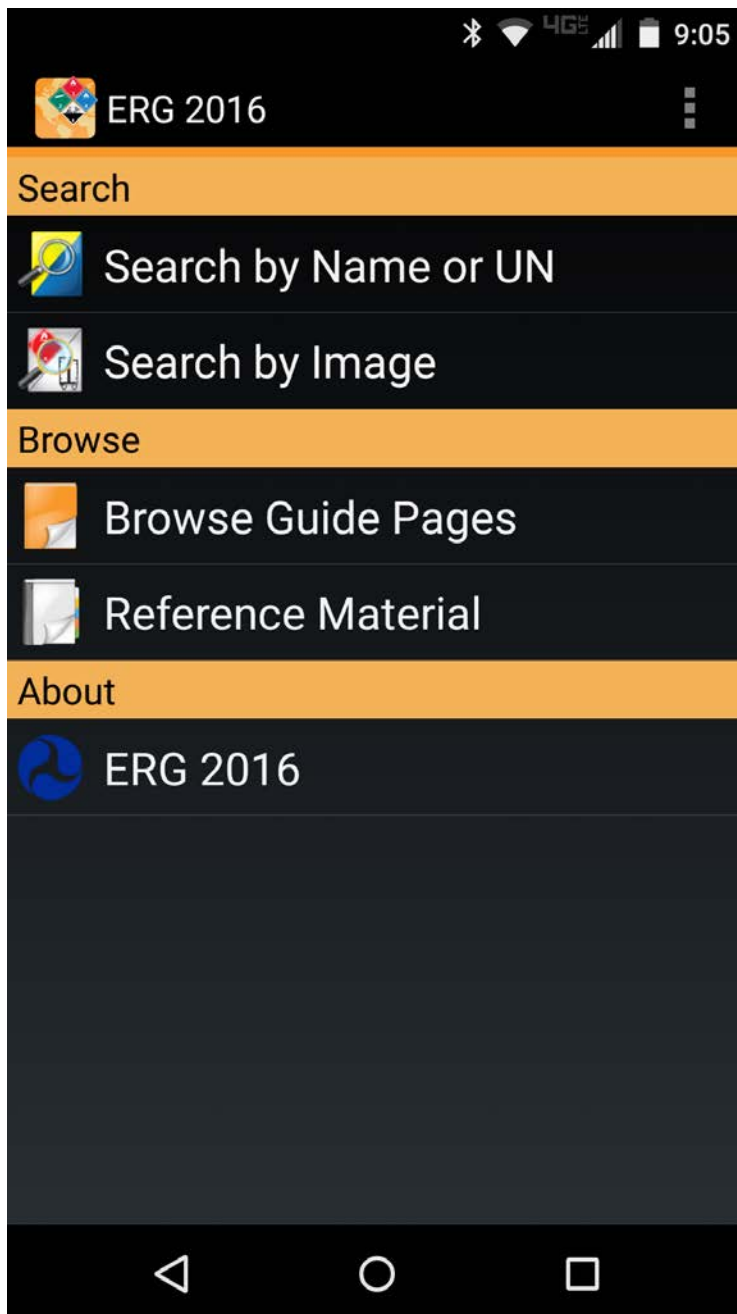
The acetone placard is called a “number placard,” which means that the number in the center of the placard specifies the exact contents of the container. “Word placards” are so named because a word designating a type of hazard (e.g., flammable) will be printed in the middle of the placard. Number placards must be displayed on large portable tanks, tank trucks, and rail cars. A word placard means that drums or smaller containers are present.

To use the guidebook, you need to know either the chemical name or the identification number.

Using the ERG App

When first opening the app or software, the home page will look different depending on the device you are using, but will basically work the same way. Here is what each home pages will look like:

Home page for Smartphone (Android or iPhone)



Home page for iPad

iPad 7:49 AM 84%

ERG 2016 Settings

A guidebook intended for use by first responders during the initial phase of a transportation incident involving dangerous goods/hazardous materials

2016 EMERGENCY RESPONSE GUIDEBOOK

Search


- Search by UN or Name
- Search by Image

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- Reference Materials

About

- ERG 2016



U.S. Department of Transportation Pipeline and Hazardous Materials Safety Administration

Transport Canada

Transports Canada

SCT

Home page for Windows



Using the Emergency Response Guide

The ERG is divided into sections, each with its own color. The typical starting point is looking up a substance by name (blue pages), ID (UN) number (yellow pages) or image (placard, rail car, trailer).

YELLOW: The yellow pages list chemicals in numerical order based on their assigned ID number (UN number). If you are reading a placard or label which has a four-digit number in the center, you can look up the chemical name in the yellow pages, which will tell you the name of the chemical and the Guide number. When using the app, you simply type the number into the Search by Name or UN field.

BLUE: The blue pages list chemicals alphabetically by their name. From this listing you can determine each chemical's ID number and the Guide number. When using the app, you simply enter the chemical name into the Search by Name or UN field.

ORANGE: The orange pages are called the Guides. These pages are of use in determining the potential hazards of the chemical in question, with the greatest concern listed first. Additionally, the Guides give a brief description of the emergency action that should be taken by appropriate emergency response personnel. When using the book, you must first find the appropriate Guide Number by looking in the yellow or blue pages or referring to the Table of Placards. When using the app, you are immediately taken to the appropriate Guide Number when you select the chemical name, ID number, or placard (Note: with some chemicals you may receive guidance based on if a fire is involved before proceeding to the Guides).

GREEN: Some chemicals are also included in the green pages. The green pages indicate the Table of Initial Isolation and Protective Action Distances. This section of the ERG describes the distances necessary for initial isolation around a chemical incident as well as the distance downwind that persons must be protected.

Book: Chemicals that are highlighted green in the blue and yellow pages will be found in Table 1 (green pages). If the name of the material in Table 1 is followed by “(when spilled in water)”, consult Table 2 for toxic gases produced. If there is an asterisk next to the ID number in Table 1, also consult Table 3.

Smartphone: If a chemical has green page you will see at the top of the screen the words Initial Isolation and Protective Distances. You can access the green pages by pressing those words or swiping left.

iPad: The green pages information will automatically appear on the right side of the screen.

Windows: The green pages information will automatically appear at the bottom of the Guide.

In addition to the Protective Distance information found in Table 1 (green pages) some chemicals have information about toxic gases produced “when spilled in water” (Table 2). When using the app, this information is listed at the bottom of the green section, “TIH gas(es) produced when spilled in water”.

Six common TIH gases have additional information provided by type of container (Table 3). When using the app, this Table 3 information will be available at the same location as the other Protective Distance information.

PLACARD: The Windows app also allows you to search by image of Placard, Railcar, or Trailer by selecting this option on the home screen or navigator bar at the top. With your smartphone or iPad, select Search by Image and then swipe down to select the placard of interest. You can navigate to the Railcar and Trailer sections by swiping left (smartphone) or buttons at top (iPad).

PROTECTIVE DISTANCE MAPPING: Digital formats will display protective action distances in real time using your devices GPS location. From the Guide or green page, select the distance cone icon or ‘Map.’ You will be asked about the spill location, wind direction and speed, size of spill, container type, and time of day. You will then be able to view the protective distance area on the actual map of the spill area.

Other notes when using digital format:

- You can review the orange pages by selecting “Browse Guide Pages” on the home screen.
- You can look at the white and green reference pages and ‘How to use this app’ by selecting Reference Material on the home screen.
- When using a smartphone or iPad, selecting the picture of a book at the top of the screen will open the ‘User Guide’
- When using a smartphone, select the 3 dots at the top to return to the home screen.
- When using an iPad, use the back arrow (<) at the top right to return to the home screen.
- When using Windows, use the symbols at the top or ‘Search by’ to navigate.

If you want additional help for smartphone apps, tutorials are available online from DOT: <http://www.phmsa.dot.gov/hazmat/erg-mobile-app>.

Exercise – Using the ERG

The facilitator will provide an exposure scenario involving a hazardous material. Use the ERG to find information about the hazard. Use the information to describe operations level response actions. Continue to use the ERG as conditions change.

Complete the Worksheets provided and be prepared to share the decisions made in your group with the other participants.

Closing

Using the ERG, did you:

- Identify hazard information using the ERG?
- Identify response actions based on scenario provided?
- Identify changes in tactical operations as conditions changed?

Based on this exercise, what takeaways do you have as you go back to work?

Please ask any remaining questions.

ERG Worksheet

(Instructor will provide ID number, container type, and time of day for your use on this exercise.)

ID Number: _____

Container: Rail Tank Car Highway Tank Truck 150 lb. Cylinder Drum
Roll-Off Box

Time of Day: 2 a.m. 2 p.m. **Wind Speed (if applicable):** _____

Instructions: Using the information in the *Emergency Response Guide*, answer the following questions, providing all significant information.

1. The substance is (you need to give only one name): _____
2. a. The Guide number that should be consulted for more information is: _____
b. The Guide title is _____
3. The distance to allow for each of the following (feet or miles) is:
a. Isolation _____ b. Evacuation _____

[Use low end of range for small release, high end of range for larger release. If the distance cannot be determined or is not given in the Guide, put "N/A"]

4. The primary hazard is due to: a. Health b. Fire
5. Major fire or explosion hazards due to this type of material are (list up to three):

6. Potential health effects from exposure to this material are (list up to three):

7. What respiratory protection is recommended for responses to this material?
