Chapter 7

Notes

CONTAINERS, PLACARDS, LABELS: CLUES ABOUT HAZMAT

Objectives

After completing this section, participants will be able to:

- Understand how an emergency responder can gather information about an unknown material.
- Use "clues" such as container shapes, placards and labels, shipping papers, and physical senses to help identify and report hazardous materials.

Introduction

As the first person who comes upon a spill or incident scene, you must be prepared to search for information from a variety of sources. Your call for help is a key to the speed and success of an emergency response. Responders should gather as much information about the spill as possible from a distance. Remember: don't put yourself in danger by getting too close.

Notes

Information Visible from A Distance

The first clues about the presence of hazardous materials are visible as you approach the scene of an incident. These include container shapes, placards, and other markings and labels, and environmental signs. For example, smoke or clouds of gas, dead or injured animals or people, and discolored buildings and vegetation may be indicators of a hazardous materials release.

Vehicles and Other Modes of Transportation

There is a classification system for trailers and tankers. You may not know the system, but you can still get useful information just by looking. For example, do you see a simple box trailer? If it is a tank or vessel of some kind, what do you see? Are there reinforcing rings around the tank? What is the shape of the tank? This information is easily seen and can be reported when you call in the emergency.

Trucks are the common examples, but the same principles apply to any mode of transportation. If there is a railroad incident, you can look for the distinguishing features of the cars to report.

Containers

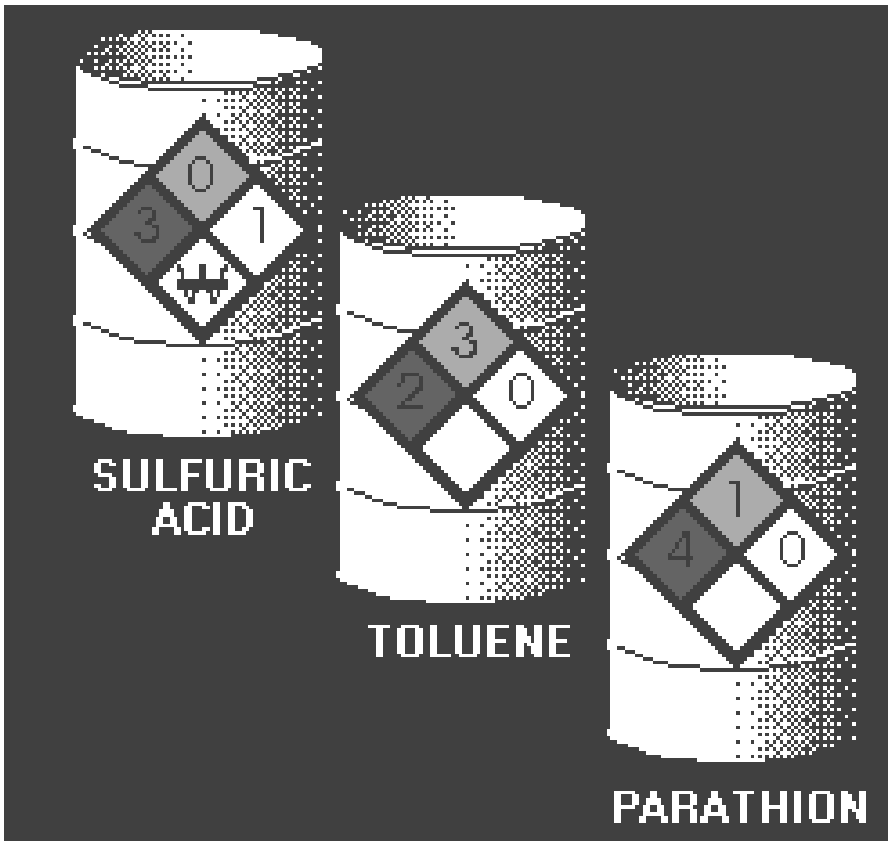
There are many kinds of containers that may hold hazardous materials. The container can be a good clue of the contents. Probably the best example of that is the difference between different kinds of drums:

- Metal drums: usually hold liquids. Often flammables, oils, and toxic material may be inside.

- Plastic drums: corrosive materials eat through metal drums, so plastic drums often hold acids or bases.

- Fiber drums: most likely to hold a powder.

Other kinds of containers, such as cylinders (which hold compressed gas), boxes, bags, plastic pails or glass jugs may be seen from a distance and is another clue for you to report.



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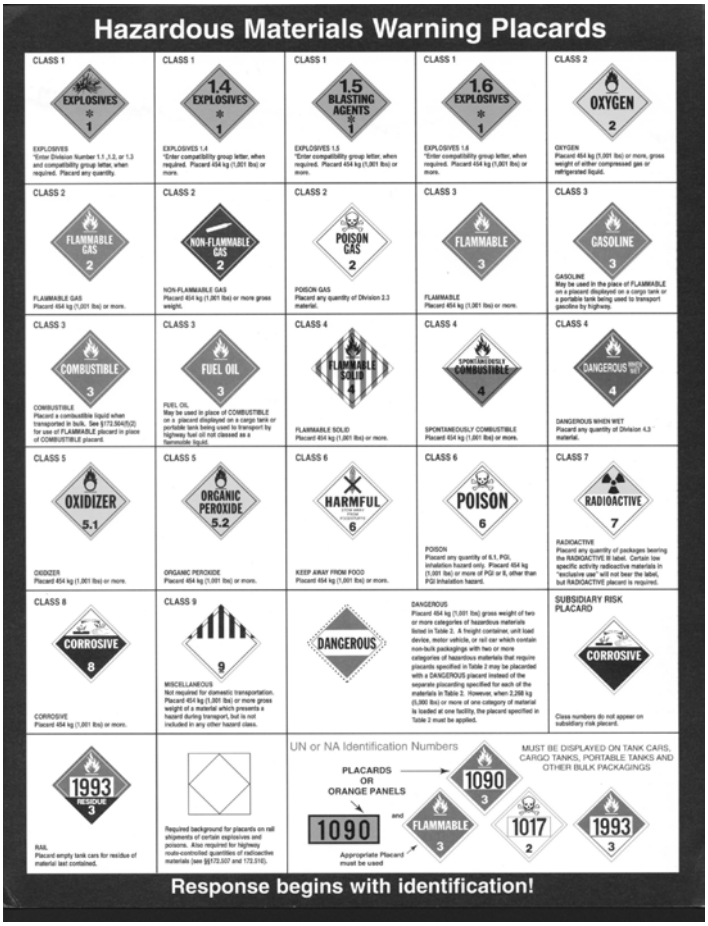
DOT Chart 11



The DOT (Department Of Transportation) Chart 11 shows the systems of placards and labels for identifying hazardous materials while they are being transported.

- **Placards** are used to mark carriers, such as trucks and railroad cars, and large containers.

Notes

- **Labels** are used for smaller containers, such as buckets, boxes, and drums.

There are some difference between placards and labels, but many similarities. You can find these identification features on both placards and labels:

- Color
- Symbol
- UN 4 digit ID number
- Hazard class number

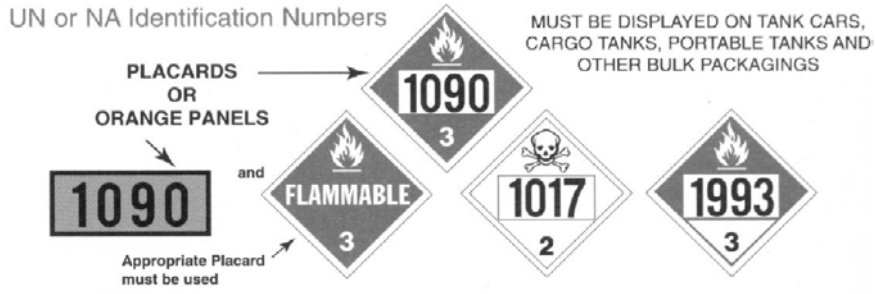
On a placard you see the information in this form:

- Hazard class name placard *and* orange panel with the UN 4 digit ID number.

Placards

The guide to placards can be found in the DOT Chart 11. It shows pictures of the placards assigned to various kinds - or classes - of materials. Placard information can be incomplete. Only materials that the DOT recognizes as hazardous in any quantity, such as poison gas, must always be placarded. Other materials, for example corrosives, are required to be placarded only when it is transported in quantities greater than 1,000 pounds. The more hazardous materials are found on the DOT Table One, the less hazardous materials on Table Two. However, the materials listed in both tables are hazardous! A transport vehicle or bulk container could hold several Table Two materials with a total weight of less than 1,001 pounds and there would be no requirement to display placards.

From a safe distance you may only be able to see the ***color*** of the placard. If you have binoculars you could use them to read the numbers or label.



Labels

Hazardous materials in all non-bulk containers, such as five- gallon buckets, 55-gallon drums, and boxes must have a DOT label when it is shipped by truck, train, air, or water. These labels can be found on the DOT Chart 11 and are similar to the placards. For example, a solid red diamond marking indicates material that will burn for both placards and labels.

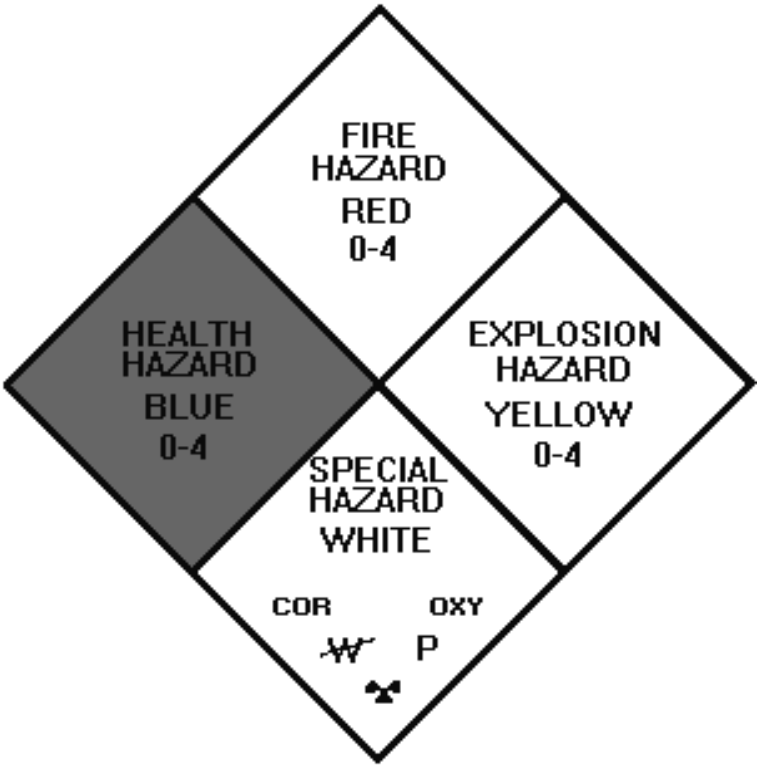
Other Labels

Notes

NFPA Diamond

The National Fire Protection Association (NFPA) designed a labeling system to give firefighters and emergency responders a quick summary of the dangers of a material. It is the NFPA 704 system and it may appear on containers within a workplace or on containers in transport.

The NFPA coding system uses a diamond-shaped symbol divided into 4 color-coded smaller diamonds, each of which represents a different type of hazard.



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Blue, on the left, displays health hazards. Red is on top and stands for flammability. Yellow is on the right and that is where the reactivity information can be found. Each of these diamonds contains a number, 0 through 4 that represents the degree of each hazard. The higher the number is, the higher the danger of the diamond's hazard. For example 0 means not dangerous (in that category) while 4 means extremely dangerous. The white diamond on the bottom is for specific hazards and doesn't contain a number. For example, CORR stands for "Corrosive" and ₩ means: "do not mix with water."

One thing worth noting about this system is that it was developed for emergency responders and the hazard ratings reflect short-term exposures to a chemical. You might see these labels on materials you work with everyday, but the ratings may not be your best source of health information. For example, powdered lead peroxide has a relatively low health (blue section) rating, but a high reactivity (yellow) rating because it is an oxidizer and could cause fires to be more intense. The reactivity hazard is very important to emergency responders but daily users of the product would probably be more worried about lead's toxicity and reproductive hazards.

HMIS Label

Like the NFPA 704 system, these are color-coded with the colors representing the same hazards as the 704 labels. HMIS labels also have the 0 through 4 numbering system. The white section is for specific PPE (Personal Protective Equipment).

The colors are arranged in horizontal stripes with the hazard rating (number) on the right.

Do you use either the NFPA or HMIS labeling system in your workplace?

Notes

Clues About Hazardous Materials

Key Points **7**

1) Clues about the presence of hazardous materials include:
   - Container shapes
   - Markings
   - Placards
   - Labels
   - Colors
   - Shipping papers
   - Senses
2) Observe scenes uphill, upwind
3) Do not rely solely on your senses