

Lesson Overview

Chemicals have become a part of everyday living. They make our lives easier in innumerable ways. But, following a disaster, the same chemicals can pose a real danger to CERT members because they are spilled or mixed with other chemicals.

Key Points:

- Chemicals have become a part of everyday life.
 - They make our lives easier but can be hazardous when spilled or mixed with other chemicals.
 - CERT members need to know:
 - How to identify if hazardous materials pose a threat to them.
 - What actions to take when they encounter hazardous materials.
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What Are Hazardous Materials?

Materials are considered hazardous if they:

- Corrode other materials.
 - Explode or are easily ignited.
 - React strongly with water.
 - Are unstable when exposed to heat or shock.
 - Are toxic to humans, animals, or the environment.
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Household Chemical Emergencies

Nearly every household uses products that contain hazardous materials. You need to read the labels on products to learn how to use them properly. Most chemical accidents are preventable. However, because accidents do happen, knowing what to do if there is a hazardous materials emergency is important. Taking the appropriate actions can reduce the risk of injury.

Household Chemical Emergencies

Some household chemicals are dangerous when inhaled. Others are dangerous when ingested or absorbed through the skin.

Exposed persons can display one or more of the following symptoms:

- Difficulty breathing
- Changes in skin color
- Headaches, blurred vision, dizziness
- Cramps or diarrhea
- Irritation of eyes, skin, throat, or respiratory tract
- Clumsiness or lack of coordination

The labels on products provide important information about their proper use and their dangers.

Preventing Household Chemical Emergencies

Besides using household chemicals properly, there are other ways to protect yourself in your home, such as the L.I.E.S. procedure.

- **L**imit the amount of hazardous materials that you have stored.
 - **I**solate products in approved containers, and protect them from sources of ignition.
 - **E**liminate products that are no longer necessary by disposing of them properly.
 - **S**eparate incompatible materials.
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What To Do if a Household Chemical Emergency Occurs

How you respond in a household chemical emergency may help prevent a serious injury. What you do depends on the type of exposure and the chemical.

- **If a poison is consumed**, find the container(s) and call the poison control center (800-222-1222) immediately. Follow the directions that you are given.
 - **If a chemical gets into the eyes**, flush with water for at least 15 minutes. If possible, have someone else call 9-1-1.
 - **If there is a danger of fire or explosion**, get out of the building immediately. When you are safely outside and away from the danger, call the fire department. Stay upwind and uphill from the building.
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Identifying Stored Hazardous Materials

Hazardous materials can be stored in production facilities, storage tanks, warehouses, schools, places of worship, and other places throughout every community. To identify these locations and provide information about the hazardous materials, the National Fire Protection Association (NFPA) developed the NFPA 704 Diamond.

The NFPA 704 Diamond is a standard system for identifying the hazards associated with specific materials stored at fixed facilities.

Identifying Stored Hazardous Materials

The NFPA 704 Diamond is divided into four colored quadrants. Each color provides information about the materials inside. Blue represents health hazard, red represents flammability, yellow represents reactivity, and white provides information about special precautions.

Within the blue, red, and yellow quadrants is a number from 1 to 4. The number indicates the degree of risk associated with the material. The higher the number, the higher the risk!

The white quadrant has a symbol.

For example:

- ~~W~~ indicates a material, such as magnesium, that shows unusual reactivity with water.
 - **OX** indicates a material, such as ammonium nitrate, that reacts with oxygen.
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Identifying Stored Hazardous Materials

An NFPA 704 Diamond indicates hazardous materials inside a location. Because of the danger of leaking and spillage after a disaster, CERT members should consider these placards a “stop sign.”

The only actions that CERT members should take when a facility is placarded with an NFPA 704 Diamond are to warn people of the danger and to evacuate them to an uphill and upwind location.

Identifying Hazardous Materials in Transit

The Department of Transportation (DOT) has developed a placard system to identify hazardous materials in transit. DOT placards:

- Use a combination of colors, symbols, and numbers.
- Indicate hazardous cargo carried in the vehicle or rail car.

Always use caution around any vehicle in an accident because:

- Placards are not required for less than 1,001 pounds of many hazardous materials.
 - Sometimes drivers forget to change the placard when they change their cargo.
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Identifying Hazardous Materials in Transit

The DOT placard system is the most commonly used in the United States. There are two other placarding systems that you may also see. These are:

- The United Nations (UN) system, which is used internationally but is also used within the United States.
 - The North American (NA) system, which is being phased out but is still used on some shipments from Canada.
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Lesson Summary

- Chemicals can become hazardous when mishandled, mixed, or spilled.
 - To protect yourself in your home or workplace, use the L.I.E.S. procedure.
 - CERTs should never enter a building placarded with an NFPA 704 Diamond.
 - If hazardous materials are present, the only actions that CERTs should take are to warn others of the danger, and evacuate them to an upwind, uphill location.
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