# RIGHT TO KNOW AND LABELING

## Identification Of Chemical Hazards Through Labeling

Hazardous materials can be handled and stored more safely if they have labels that list the precautions associated with the material. Chemical manufacturers are required by the Right To Know Law to provide containers of hazardous chemicals with precautionary information. Some common labeling terms include *combustible*, *flammable*, *corrosive*, *irritating*, and *toxic*. Hazardous material labels must not be removed from a chemical container until the container is completely empty of all material.

In addition, according to the Georgia Right To Know Law, OCGA 45-22-3,:

"All hazardous chemicals introduced into the workplace by employers and used in the workplace by employees shall be in labeled containers that meet the requirements of the Occupational Safety and Health Administration standard; provided, however, that employers shall not be required to label portable containers into which hazardous chemicals are transferred from labeled containers provided that the portable container and the hazardous chemical transferred to it are intended only for the immediate use of an employee who performs the transfer or who is present at the time of such transfer."

There are several systems and standards for labeling chemicals to communicate their hazards, but there is not a uniformly accepted system in use at this time. Each system and standard has advantages and limitations.

This brief document lists and describes the systems most commonly used by manufacturers.

## ANSI Z129.1

Precautionary labeling for hazardous materials has been developed by the Chemical Manufacturers Association (CMA) and the American Conference on Chemical Labeling and adopted as American National Standards (Z129.1) by the American National Standards Institute (ANSI). This precautionary labeling contains the name of the chemical, a signal word such as WARNING or DANGER, the key hazard such as flammable or vapor harmful, and statements of precautions to avoid the hazard. The use of a single term will not always provide adequate information because many chemicals have multiple hazards. Another problem is that the term corrosive includes materials that may be incompatible with one another. For example, strong mineral acids (hydrochloric acid) and strong alkaline materials (sodium hydroxide) are both corrosive but if they mix during storage or use, they will react vigorously.

ANSI Example

## Hazard Communication Label

Plate-X Gold Plating Solution

**DANGER !**

*May be fatal if swallowed, inhaled, or absorbed through the skin.*


- Do not breathe vapor or mist.
- Do not get into eyes, on skin, or on clothing.
- Exposure causes weakness, headache, cyanosis, loss of consciousness, respiratory arrest, or death.
- Target organs - blood, metabolic enzymes, skin, lungs.
- Physicians - treat exposure victims for cyanide poisoning.
- Refer to Material Safety Data Sheet for additional Information.

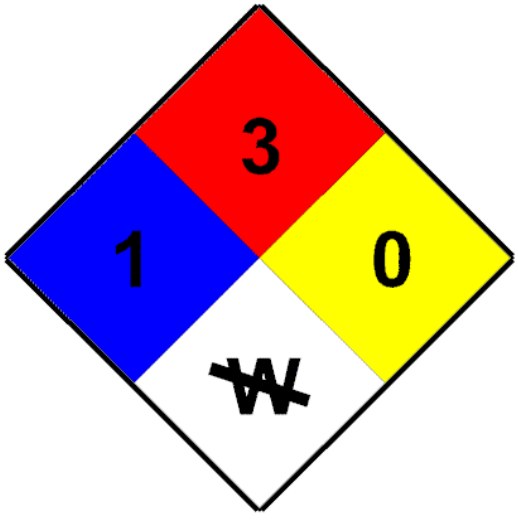
ABC Chemical Company
123 Hazard Drive
Anyu here, NY 13333
800-123-4567

**NFPA 704**

The National Fire Protection Association (NFPA) has developed a color coded system called NFPA 704. The system uses a color coded diamond with four quadrants in which numbers are used in the upper three quadrants to signal the degree of emergency health hazard (blue), fire hazard (red), and reactivity hazard (yellow). The bottom quadrant is used to indicate water reactivity, radioactivity, biohazards, or other special hazards. The emergency hazards are signaled on a numerical scale of 0 to 4, with 0 = no unusual hazard, 1 = minor hazard, 2 = moderate hazard, 3 = severe hazard, and 4 = extreme hazard.

The NFPA diamond is used primarily by emergency response personnel and for emergency planning and as such does not adequately signal occupational hazards or precautionary information. The NFPA system is good for alerting personnel to the degree of hazard of the chemical and helpful in drawing attention to storage needs and emergency equipment needed.

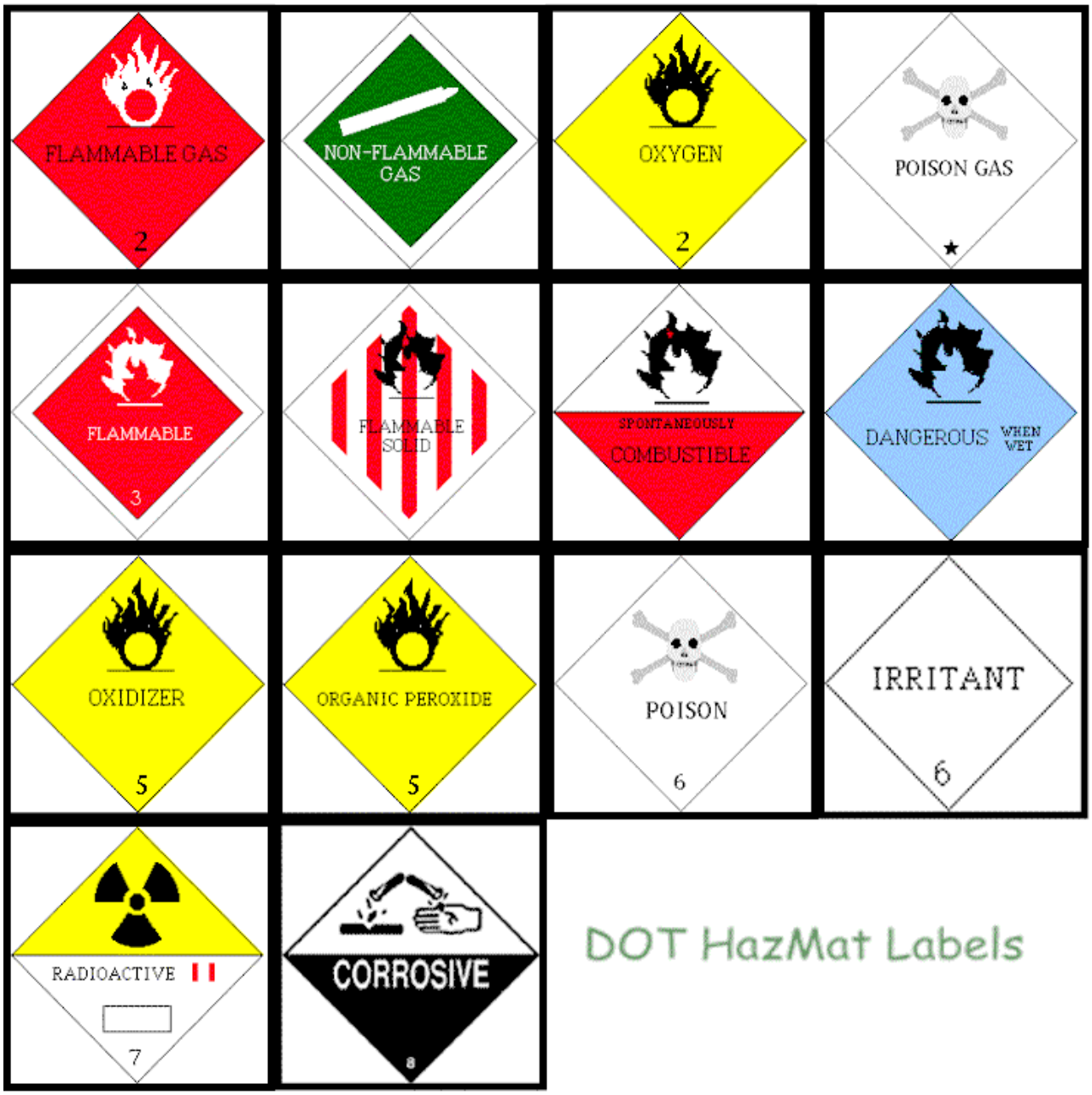
NPFA Example



**DOT**

The Department of Transportation (DOT) hazard labeling system uses a color coded diamond in which there is a symbol and a term describing the major hazard of the material. DOT hazard classes include explosive, gases (flammable, nonflammable, corrosive, and poison), flammable liquids, flammable solids, oxidizers, poisons, radioactive materials, and corrosives. Most chemicals are rated by what the DOT considers to be the single major hazard, but many chemicals have subsidiary hazard categories as well. The DOT system is used for the transportation of hazardous materials.

DOT Examples



**HMIS**

The National Paint & Coatings Association (NPCA) Hazardous Materials Information System (HMIS) is one of the most popular systems for labeling hazardous chemicals. The system uses standard labels to communicate hazards through the use of colors, numbers, letters of the alphabet, and symbols. The HMIS is a five part rectangle that provides identification of the chemical, acute health hazard, flammability, reactivity, personal protective equipment designations, and chronic health hazard information. The chemical identity is conveyed by the chemical name and should be the same as the name on the MSDS. the acute health hazard reactivity (yellow) hazards are communicated (blue), flammability (red), and by numerical ratings similar to the NFPA system. An alphabetical designation is used to denote recommended personal protective equipment. Chronic health hazards may be any abbreviated technique such as an asterisk communicated by placed on the label denoting reference to the specific Material Safety Data Sheet, or the actual chronic information may be written on the label if space allows.

HMIS Example