NFPA Sign and Chemical Hazard Codes

Introduction

The National Fire Protection Association (NFPA) is a professional firefighters organization that works to prevent the loss of life and property from fire. NFPA has developed regulations, guidelines, and procedures to prevent fires, protect individuals during fires, reduce losses due to fires, and how to respond to emergency situations. NFPA has developed a standard system, called the NFPA chemical hazard codes, for classifying the health, flammability, and reactivity hazards of chemicals during an emergency situation. A standard label called the NFPA chemical hazard label has also been developed to be used by chemical manufacturers.

This system of identifying hazards associated with various chemicals was developed primarily for fire protection and emergency personnel. As stated in NFPA Code #704, "This standard provides a simple system of readily recognizable and easily understood markings, which will give, at a glance, a general idea of the inherent hazards of any materials and the order of severity of these hazards as they relate to fire prevention, exposure, and control." The NFPA chemical hazard codes and label are not intended as a guide for workplace exposure or for relative indices of toxicity.

The NFPA chemical hazard label is a multi-colored, 4-part diamond as shown in Figure 1. The four parts of the diamond are each color-coded and represent a particular hazard—health (blue), flammability (red), and reactivity (yellow). The bottom part of the diamond is left blank for special hazards such as water-reactive materials or strong oxidizers. The NPFA hazard code uses a 0–4 rating system where 0 is no unusual hazard and 4 is danger. A more specific explanation for each hazard is outlined below.

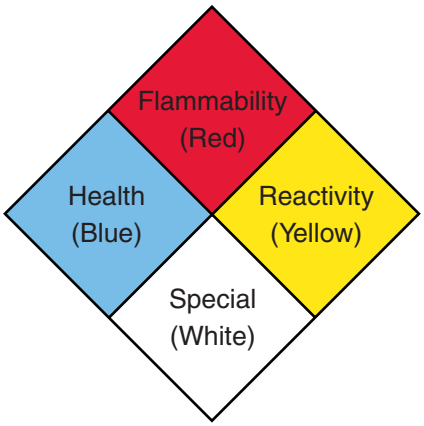

Figure 1. NFPA Chemical Hazard Label

General NFPA Rating Summary

Health (Blue)

4	**Danger**	May be fatal on short exposure. Specialized protective equipment required.
3	**Warning**	Corrosive or toxic. Avoid skin contact or inhalation.
2	**Warning**	May be harmful if inhaled or absorbed.
1	**Caution**	May be irritating.
0		No unusual hazard.

Flammability (Red)

4	**Danger**	Flammable gas or extremely flammable liquid.
3	**Warning**	Flammable liquid flash point below 100 °F.
2	**Caution**	Combustible liquid flash point of 100 ° to 200 °F.
1		Combustible if heated.
0		Not combustible.

Reactivity (Yellow)

4	**Danger**	Explosive material at room temperature.
3	**Danger**	May be explosive if shocked, heated under confinement, or mixed with water.
2	**Warning**	May undergo violent chemical change at elevated temperatures or pressures.
1	**Caution**	Normally stable but the material may be unstable at elevated temperatures or pressures.
0	**Stable**	Materials that are normally stable, even under fire conditions.

Special Notice Key (White)

~~W~~	Water Reactive
OX	Oxidizing Agent

Summary

NFPA chemical hazard codes are found on many labels and are sometimes required on storage room doors. The NFPA hazard codes and the NFPA chemical hazard label are used by firefighters to warn them of hazards during an emergency situation. They are not intended as a guide for workplace exposure or for relative toxicity levels. Flinn At-A-Glance codes, HMIS codes, or Material Safety Data Sheets (MSDS) are better suited as guides for workplace and classroom hazards.

Tip

- A dry-erase marker should be used on the NFPA sign. The marker may need to be wiped clean using an alcohol solution.

The *NFPA Sign* is available from Flinn Scientific, Inc.

Catalog No.	Description
AP6491	NFPA Sign

Consult your *Flinn Scientific Catalog/Reference Manual* for current prices.