ORANGE COUNTY FIRE AUTHORITY

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Hazardous Materials Identification

Guideline G-05

Date: December 6, 2007

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Hazardous Materials Identification

PURPOSE

Fire incidents and other accidents involving hazardous materials require special consideration by emergency response personnel. Posted hazardous materials identification signs are required in order to provide specific information about the nature of the materials.

SCOPE

This document was developed to replace NFPA 704 for the design and placement of hazardous materials identification signs on property and within structures in which hazardous materials and hazardous wastes are stored, used, processed, or handled. All references to NFPA 704 have been deleted from the California Fire Code (CFC) by amendment (2013 CFC 5003.5) and replaced with the information provided in this guideline.

SUBMITTAL REQUIREMENTS

1. Applicability

In general, hazardous materials signs are required when the quantities of hazardous materials at a single site are sufficient to warrant the issuance of a permit. A table defining these quantities is referenced in Attachment 1.

2. Classification of Hazardous Materials

Hazard classes are summarized in two distinct categories: physical hazards and health hazards. Many hazardous materials pose multiple hazards and, thus, warrant several hazard classes (e.g., sulfuric acid = Toxic liquid, Corrosive liquid and Class 2 Water Reactive liquid). In order to accurately assess the nature of the hazardous materials stored or used at a business, the business owner or their representative must complete a Chemical Classification Packet (see OCFA Guideline G-06). Businesses must accurately assess their materials against the specific hazard class definitions found in the CFC. In addition, the business must calculate the total quantities of materials within each hazard class for both use and storage conditions. Once accomplished, aggregate quantities of material exceeding the permit threshold are required to have hazardous materials identification signs posted.

Specific hazard classes as defined in the CFC are listed below for reference. *NOTE: Many of these hazard classes may be found in all three material states (solid, liquid, gas), and many chemicals have two or more hazard classes.*

EXPLOSIVE	FLAMMABLE GAS	LIQUEFIED PETROLEUM GAS
FLAMMABLE I-A	FLAMMABLE I-B	FLAMMABLE I-C
COMBUSTIBLE II	COMBUSTIBLE III-A	COMBUSTIBLE III-B
FLAMMABLE SOLID	ORGANIC PEROXIDE I	ORGANIC PEROXIDE II
ORGANIC PEROXIDE III	ORGANIC PEROXIDE IV	ORGANIC PEROXIDE V
OXIDIZER 1	OXIDIZER 2	OXIDIZER 3
OXIDIZER 4	PYROPHORIC	UNSTABLE REACTIVE 1
UNSTABLE REACTIVE 2	UNSTABLE REACTIVE 3	UNSTABLE REACTIVE 4
WATER REACTIVE 1	WATER REACTIVE 2	WATER REACTIVE 3
HIGHLY TOXIC	TOXIC	CORROSIVE
CRYOGEN		

3. Hazardous Materials Identification Sign Requirements

A. Rooms, Buildings, Outside Areas, Aboveground Tanks, and Vats

Hazardous materials identification signs shall state *in plain language* the hazard class(es) presented by the materials stored or used (see list above).

1) All lettering shall be in capital letters on a contrasting background (e.g. white on red, white on black).

2) Signs shall be of durable construction and suitable for the environment in which they are posted.

3) Letters shall be not less than three inches in height when a single hazard class is present. When two hazard classes are present the letters may be reduced to not less than two inches in height. If three or more hazards are present, letters shall be a minimum of one inch in height. Lettering height adjustments allow sign dimensions to be of a size that can be placed on doors, buildings, and tanks and still be visible to emergency response personnel.

4) The material state (solid/liquid/gas) is also required to be included on the sign for each hazard class identified.

5) When tanks or vats are heated, this information shall also be specified on the tank (e.g., HEATED TANK).

6) When multiple hazards exist, the sign must contain all applicable hazards. *Exception: When multiple hazards are present and they are of the same general class (e.g., Water Reactive 1 and Water Reactive 3, Organic Peroxide III and Organic Peroxide II, etc.), only the greatest hazard within each class is required to be listed on the sign.*

B. Individual Containers, Cartons, and Packages

Individual containers, cartons and packages shall be labeled in accordance with nationally recognized standards. Label and lettering size shall be determined by the physical size of the container, package, or vessel. Requirements are met if:

1) Labeling is in accordance with DOT or OSHA requirements where the label provides sufficient data to identify the content and is consistent with the specific hazard classes defined in the CFC.

2) The label indicates the primary hazards of the product and is generally consistent with the specific hazard classes defined in the CFC.

4. Signage Examples

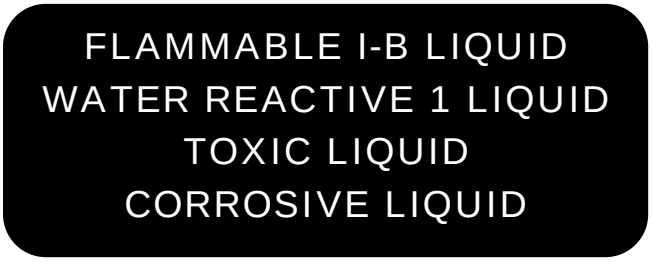
Example #1:
Hazardous material present: Sodium Hypochlorite, 15% Solution (Corrosive)

- All letters are a minimum of 3" in height

Example #2:
Hazardous material present: Hydrogen Peroxide 35% (Class 2 Oxidizer, Corrosive)

- All letters are a minimum of 2" in height

Example #3:
Hazardous materials present: Isopropyl Alcohol (Flammable I-B)
Sulfuric Acid, 30% (Water Reactive 1/Toxic/Corrosive)



- All letters are a minimum of 1" in height

5. Hazardous Materials Identification Sign Placement

Hazardous materials identification signs shall be located as specified by this document.

A. Rooms, Buildings, or Outside Areas

Hazardous materials identification signs shall be placed adjacent to or on all swinging doors providing direct access to any room, building, or area containing hazardous materials. Signs may be located on or adjacent to the doors as directed by the inspector. The location and number of signs is subject to the approval of the inspector based on site-specific conditions.

B. Aboveground Tanks and Vats

Tanks and vats shall be posted with hazardous materials identification signs located so they are visible from all angles of approach. In general, this will require four signs located at equally distant points around the vessel. The number of signs may be reduced when the vessel cannot be approached from one or more sides.

C. Individual Containers, Cartons, and Packages

Hazardous materials identification signs shall be located in a manner that allows the handler of the containers, carton, or package to see the label during the storage and handling process. One or more labels may be appropriate to meet these requirements.

D. Other Warning Sign Requirements

This guideline shall not be used to prevent the installation of any specialized warning sign otherwise required by adopted codes and standards (e.g., No Smoking, Welding, LPG, etc.).

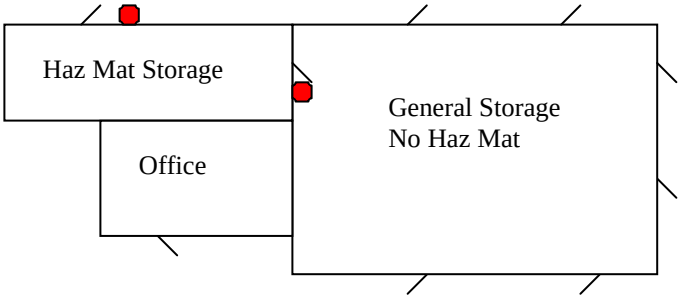
E. Existing Conditions

When the Orange County Fire Authority has previously approved hazardous materials identification signs and they continue to provide accurate information, such signs shall be deemed acceptable without modification.

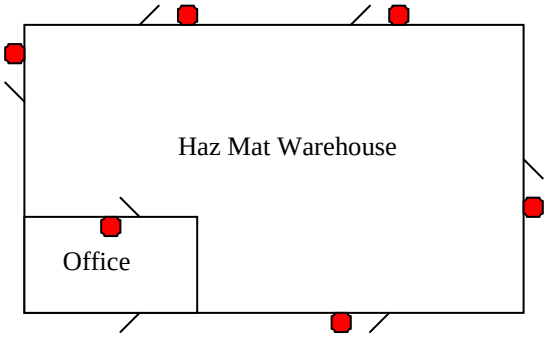
6. Sign Placement Examples

= Hazardous Materials Identification Sign

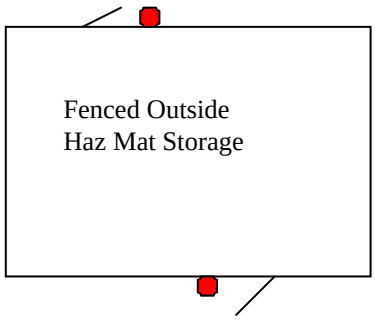
Example #1: Storage/Non-Storage



Example #2: Warehouse/Office



Example #3: Fenced Outside



Attachment 1

Hazardous Materials Permit Chart

HAZARD CLASS/PERMIT TYPE	PERMIT AMOUNTS	DISCLOSURE AMOUNT
Explosive	Any amount	Any amount
Liquefied Petroleum Gas	Any amount (Except R-3, 500lbs)	55 gallons
Flammable Gas	> 200 cubic feet	200 cubic feet
Cryogen, Flammable	> 1 gallon inside, 60 gallons outside	55 gallons
Inert Gas	> 6000 cubic feet	200 cubic feet
Cryogen, Nonflammable	> 60 gallons inside, 500 gallons outside	55 gallons
Flammable Liquid	> 5 gallons inside, 10 gallons outside	55 gallons
Combustible Liquid (II & IIIA)	> 25 gallons inside, 60 gallons outside	55 gallons
Flammable Solid	> 100 pounds	500 pounds
Unstable Reactive, Class 3 & 4 Unstable Reactive, Class 2 Unstable Reactive, Class 1	Any amount > 5 gallons, 50 pounds > 10 gallons, 100 pounds	55 gallons 500 pounds
Water Reactive, Class 3 Water Reactive, Class 2 Water Reactive, Class 1	Any amount > 5 gallons, 50 pounds > 55 gallons, 500 pounds	55 gallons 500 pounds
Oxidizing Gas	> 504 cubic feet	200 cubic feet
Cryogen, Oxidizing	> 10 gallons inside, 50 gallons outside	55 gallons
Oxidizer, Class 4 Oxidizer, Class 3 Oxidizer, Class 2 Oxidizer, Class 1	Any amount > 1 gallon, 10 pounds > 10 gallons, 100 pounds > 55 gallons, 500pounds	55 gallons 500 pounds
Organic Peroxide, Class I & II Organic Peroxide, Class III Organic Peroxide, Class IV	Any amount > 1 gallons, 10 pounds > 2 gallons, 20 pounds	55 gallons 500 pounds
Highly Toxic	Any amount	55 gallons 500 pounds
Cryogen, Highly Toxic	Any amount	Any amount
Highly Toxic Gas	Any amount	Any amount
Toxic	> 10 gallons, 100 pounds	55 gallons 500 pounds
Toxic Gas	Any amount	200 cubic feet
Corrosive	>55 gallons, 500 pounds	55 gallons 500 pounds
Cryogen, Physical or Health Hazard Except Flammable, Oxidizer and Inert	Any amount	55 gallons
Corrosive Gas	> 200 cubic feet	200 cubic feet
Pyrophoric	Any amount	55 gallons 500 pounds
Pyrophoric Gas	Any amount	200 cubic feet
Aerosol Product (Level 2 & 3)	>500 pounds	55 gallons