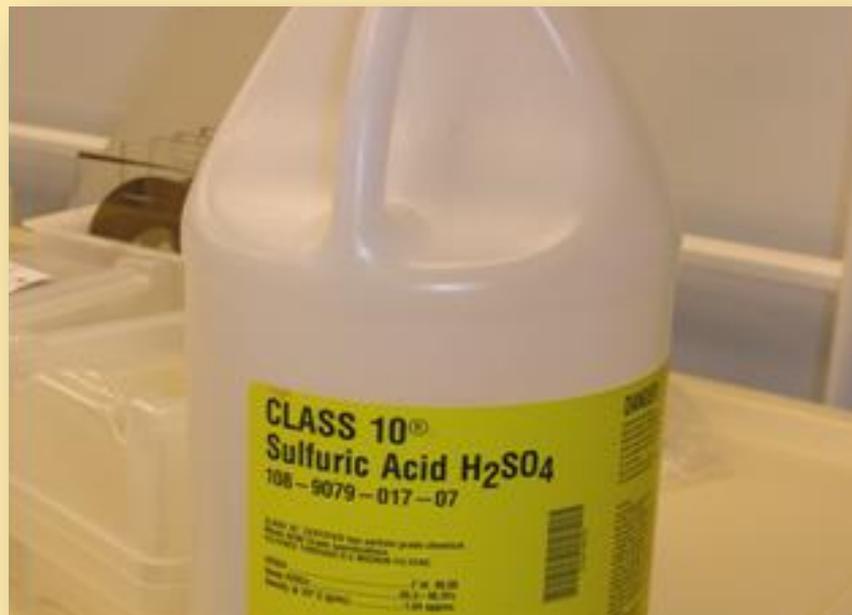


INTERPRETING CHEMICAL LABELS



SCME Interpreting Chemical Labels Learning
Module

Unit Overview

Just like any chemical cleaner you buy at the store, each chemical used in the fabrication of microsystems has a label that contains important information about that chemical. Before using any chemical, **READ THE LABEL.**

This unit provides information on the content and requirements of chemical labels, information that prior to working in a manufacturing facility or any facility with chemicals.

Objectives

- ❖ List the information required by the Occupational Safety & Health Association (OSHA) to be on chemical labels
- ❖ State at least three chemical safety rules associated with chemical labels

Introduction

When working with a chemical, the most accessible information could be the information on the chemical bottle's label. The label tells you what the chemical is and any immediate hazards associated with the chemical.

Once you know what you are dealing with, you should consult the SDS (Safety Data Sheet) for additional information.



Chemical Label

Safety



Chemicals are dangerous and can cause serious injury or death when handled improperly.

One should always read the label and study the Safety Data Sheet (SDS) prior to using, handling, or working with a chemical.

OSHA Requirements

OSHA requires that chemical manufacturers and distributors label every container of hazardous chemicals that they ship.

Label requirements are stated in Section 1910.1200(f) of the Hazardous Communication Standard ([29 CFR 1910.1200](#)).

Label Content

OSHA's minimum requirements:

- ❖ *Chemical identity* – code and product name
- ❖ *Supplier Identification* – name, address, emergency phone #
- ❖ Appropriate hazards warnings (physical and health hazards)
- ❖ Hazard Pictogram and single word (i.e., Danger, Corrosive)

Labels must remain on the containers.



Minimum Requirements

Labels for Secondary Containers

If the chemical is transferred to another container, the label must contain the following:

- ❖ Chemical's identity
- ❖ Appropriate hazard warnings (physical and health hazards)

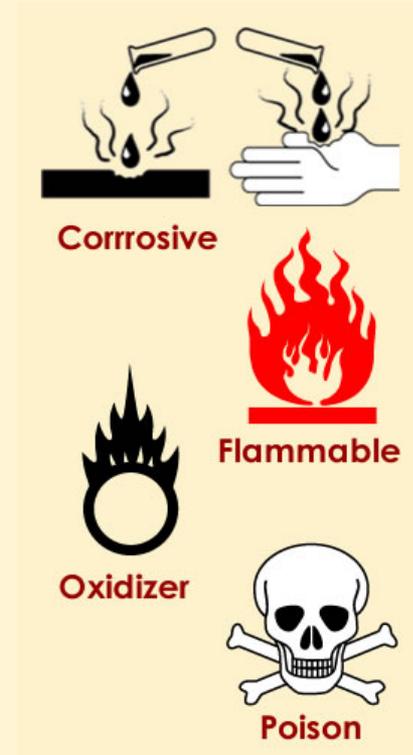


Secondary Container Label

Hazard Warnings

A brief statement, word, picture, symbol or combination thereof that clearly states the chemical's immediate hazard(s):

- ❖ Flammable
- ❖ Corrosive
- ❖ Causes lung damage
- ❖ Poisonous if swallowed
- ❖ Do not mix with water



These are some standards symbols for hazards.

Common Hazard Symbols

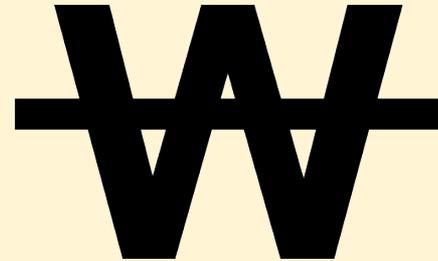
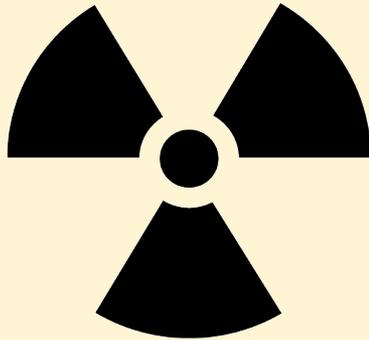


What other hazard warning symbols would you recognize?

Common Hazard Symbols

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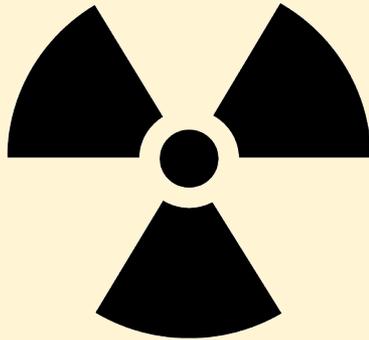
What hazards are represented by these symbols?



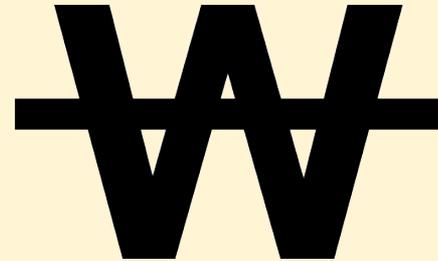
Common Hazard Symbols

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What hazards are represented by these symbols?



Radioactive

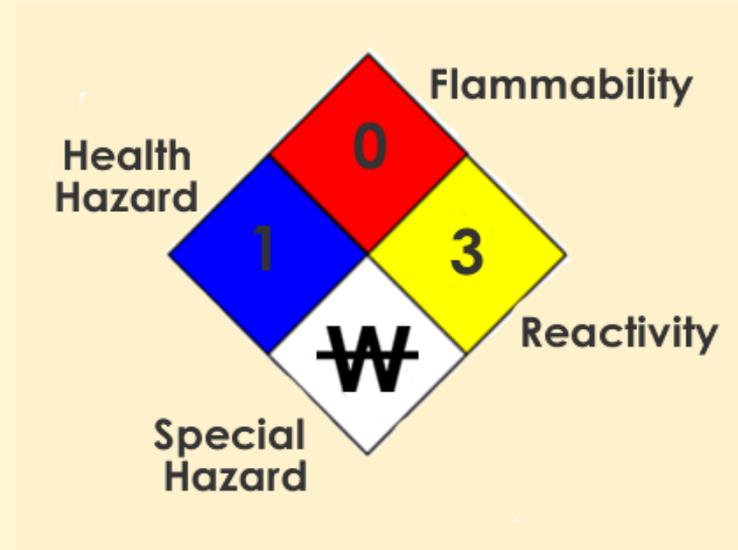


Do not mix with water

NFPA Diamond

A quick and easy way to supply the user with critical information about a chemical is the NFPA diamond. The NFPA diamond uses a system of ratings developed by the [National Fire Protection Association](#).

These ratings inform the user of a chemical's level of hazard in health, flammability and reactivity. It also warns of any special hazard such as "do not mix with water" or "corrosive".



ANSI Requirements

A voluntary labeling standard published by the American National Standard (ANSI) Institute calls for additional items:

- ❖ Signal words - DANGER, WARNING, CAUTION
- ❖ Highly toxic materials shall be marked POISON
- ❖ Precautionary measures useful in preventing physical harm
- ❖ Instructions in case of exposure
- ❖ Notes to physician for emergency treatment
- ❖ Instructions in case of fire or chemical spill
- ❖ Instructions for chemical handling and storage

Rules for Chemical Labels

- ❖ Read all labels carefully.
- ❖ Double check the label. Know what you are handling.
- ❖ Do NOT use a chemical if it is unfamiliar to you or it has no label.
- ❖ Ensure the chemical container has the proper label.
- ❖ Chemical labels must be legible and prominently displayed.
- ❖ Chemicals poured into a smaller container for daily use must be properly labeled.
- ❖ Never obscure, deface, or remove any label.

Summary

The chemical label is an immediate warning that a chemical may pose a physical or health hazard to the user. Therefore, it is important to be able to quickly interpret the information on a chemical label.

If more information is needed, consult the SDS.

Disclaimer

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