



Hazard Communication Standard (HCS)

"Right to Know"

The Hazard Communication Standard (HCS) means you have a right and a need to know what hazards and chemicals you may be exposed to while at work.

You also need to know what precautions to take to prevent adverse effects from exposure to potentially dangerous chemicals. By reading warning labels, using Material Safety Data Sheets (MSDSs) and asking your supervisor for directions, you will be able to use chemicals safely in your workplace.

The HCS requires your employer to inform you of workplace chemical hazards by:

- Identifying and establishing a list of potentially hazardous materials you may encounter. These materials must be identified with warning labels and MSDSs;
- Informing you of ways to protect yourself using safe work practices, personal protective equipment (PPE), and emergency procedures;
- Informing you of any operations in your work area where hazardous materials are present;
- Informing you of the location and availability of your employer's written Hazard Communication Program. The company Hazard Communication program should explain your company's chemical labeling system, the location of MSDSs and how to use the information effectively;
- Conducting training within the first 30 days of hire with additional training annually or whenever additional hazards are introduced into the workplace.

Material Safety Data Sheets

When you need more detailed information at work, you should consult the MSDSs. Your employer must keep them readily accessible during each work shift for every hazardous chemical at the worksite.

Although MSDSs probably contain everything you will need to know regarding the safe handling of hazardous materials, and chemicals, they can be difficult to use. You should be familiar with four main categories of information they provide:

- Product information;
- Exposure situations;



- Hazard prevention and protection;
- Other specific information

Your company's MSDSs may not be in this exact format, but the reason to use them is the same.

Information Found in the MSDS

In the Identity Section, the chemical name is listed as it should appear on the label.

Section I – Product Identification:

The manufacturer's name, address, telephone number and emergency telephone numbers; the preparation date or date of last revision; May use Hazardous Materials Identification system (HMIS) codes.

Section II – Hazardous Ingredients / Identity Information:

The hazardous components by chemical identity and other common names; Includes OSHA / PEL (Permissible Exposure Limit), ACGIH/TLV (Threshold Limit Value) and other recommended exposure limits; Percentage listings of the hazardous components.

Section III – Physical/Chemical Characteristics:

Boiling point; vapor pressure; vapor density; specific gravity; melting point; evaporation rate; solubility in water; physical appearance; and odor.

Section IV – Fire and Explosion Hazard Data:

Flash point (and method used to determine it); flammability limits; flammability limits; extinguishing media; special firefighting procedures; unusual fire; and explosion hazards.

Section V – Reactivity Data:

Stability (stable, unstable); conditions to avoid; incompatibility (materials to avoid); hazardous decomposition or byproducts; and hazardous polymerization.

Section VI – Health Hazard Data:



Router of entry (inhalation, absorption, injection ingestion); health hazards acute (immediate) and chronic (builds up over time); carcinogenicity, signs and symptoms of exposure; emergency and first aid procedures.

Section VII – Precautions for Safe Handling and Use:

Steps to be taken in case material is released or spilled; waste disposal methods; handling and storage; and other precautions.

Section VIII – Control Measures:

Respiratory protection (specify type); ventilation (local, mechanical exhaust, special or other); protective gloves; eye protection; other protective clothing or equipment; and work/hygienic practices.

Labeling and marketing Systems.

A label on a chemical container will provide important warnings relative to the chemical's potential hazards. Sometimes labels provide only a little information, and sometimes no label exists. If this happens, use common sense:

- Never mix chemicals that aren't properly labeled;
- Never assume an unlabeled container is harmless;
- If you remove a label you must replace it with another one immediately.

For your safety, it is your employer's responsibility to ensure labels are attached to nearly every hazardous material at your workplace. The labels must be legible, prominently displayed and include the following information:

- The identity or name of the chemical;
- The appropriate hazard warnings such as FLAMMABLE or EXPLOSIVE;
- The Name and address of the chemical manufacturer, importer or other responsible party.

In some instances, labels aren't required. Here are some examples:

- Pipes are not considered "containers", so they do not have to be labeled. But do not assume the chemical inside is safe just because there is no label.

- Portable containers don't have to be labeled if the employee who transferred the chemicals from a labeled container uses them immediately. Remember; never leave an unmarked container of a hazardous material unattended.
- Individual process container can be marked with other signs, placards, process sheets, batch tickets, operating procedures or other written forms instead of labels under only two conditions: The placard or other written method must identify to which containers the warnings refer; and, the written method used must contain the same information that would be on a warning label, such as the physical and health hazards.

Hazardous Materials Identification System (HMIS)

This system used colored bars, numbers and symbols to convey the hazards of chemicals used in the workplace. Do not confuse HMIS labels (colored bars) with National Fire Protection Association (NFPA) labels (colored diamonds). The two systems are similar but not identical. HMIS conveys full health warning information to all employees and is not intended for emergency circumstances. NFPA 704 is meant primarily for fire fighters and other emergency responders.

- ***Health (blue bar)*** – The health section conveys the materials' health hazards. The blue health bar has two spaces, one for an asterisk and one for a numeric hazard rating. If present, the asterisk signifies a chronic health hazard, meaning that long-term exposure to the material could cause a health problem. With a 0-4 numeric hazard rating, the 0 indicates minimal hazard and 4 indicates an extreme hazard.
- ***Flammability (red bar)*** – The assigned numeric values (0 indicates low hazard and 4 indicates high hazard) are identical to those the NFPA 704 uses.
- ***Physical Hazard (orange)*** – Reactivity hazards are assessed using OSHA's physical hazard criteria. Seven hazard classes are recognized: water reactive, organic peroxides, explosives, compressed gases, pyrophoric materials, oxidizers and other unstable elements that react to stimulus. AS in previous sections, the hazardous rating scale uses numeric values (0 represents low hazard to 4 high hazards).
- ***Personal Protection (white bar)*** – This is where the main difference exists between the NFPA 704 and HMIS systems. In the NFPA 704 system, the white area conveys special hazards, whereas HMIS uses the white section to indicate what PPE should be used when working with the material.



Fire Hazards of Materials NFPA 704 Diamonds

This system was designed to convey information to safeguard the people who respond to an emergency situation where fire or hazardous materials are located or stored. It alerts emergency responders to the type of hazards present. NFPA 704 identifies material hazards in three principal categories: health, flammability and reactivity. It also indicates the order of severity numerically by five divisions ranging from 4 – the most severe hazard – to 0, which indicates no special hazard.

The diamond-shaped placard is divided into four areas. The health area is colored blue and located to the left; flammability is colored red and placed on the top; reactivity is colored yellow and placed to the right; and unusual reactivity with water or additional information such as radioactivity, proper fire extinguishing agents or protective equipment that may be required is colored in white and placed on the bottom.

Never handle a chemical without first reading the label and appropriate MSDS. If you're unsure about a chemical, ask your supervisor.

Remember that by reading warning labels, understanding MSDSs and applying the training your employer provides, you'll be helping to protect yourself and your coworkers from hazards.

DISCLAIMER: The recommendations listed were developed for training purposes only using generally accepted standards. Compliance does not guarantee that you will be in conformance with any safety regulation nor does it ensure the absolute safety of your occupation/place of business.