

Chemical Labeling

Labeling Systems General Information

Label (n): Any written, printed, graphic, sign or symbol, placard, process sheet or batch tickets displayed on or affixed to the hazardous chemical container which may be bags, barrels, bottles, test tubes, boxes, cans, cylinders, drums, tanks, etc.

The Hazard Communication (HazCom) Standard (HCS) specifies that all containers of hazardous materials be labeled with an appropriate warning. Federal and state regulations mandate that all labels on original containers include the name of the chemical, the name and address of the manufacturer, the type of hazard that exists, how to properly handle the chemical or type of protective equipment necessary, and possible specific damage (i.e. lung, kidney, liver damage). Labels may include common names, amount of contents storage and handling instructions, special signal words (danger, warning, caution), special symbols (corrosive, flammable, poison, spontaneously combustible etc), special health hazards (carcinogen, toxic, irritant, sensitizer, nephrotoxin, hepatotoxin, neurotoxin etc.), special precautionary statements (first aid instructions), spill clean-up procedures, and fire precautionary factors.

Substances regulated by a specific OSHA standard must be labeled by the manufacturer according to requirements of that standard. AN EXAMPLE:

OSHA 1910.1018(p) - The Inorganic Arsenic Standard states that containers of inorganic arsenic must have a label which bears the following information:

DANGER
CONTAINS INORGANIC ARSENIC
CANCER HAZARD
HARMFUL IF INHALED OR SWALLOWED
USE ONLY WITH ADEQUATE VENTILATION

Labeling Systems: NFPA and HMIS/HMIG

Although the hazard communication Standard (HCS) requires all chemicals in the workplace to be labeled, the actual format and method of labeling is not specified. Therefore, several formats exist. The National Fire Protection Agency (NFPA), in section 704 of the National Fire code, specifies a system using the NFPA hazard diamond. The system was developed primarily with the needs of fire protection agencies in mind. Two other HCS compliance systems that are very similar are the Hazardous Material Identification Guide (HMIG) and the Hazardous Material Information System (HMIS).

The NFPA Hazard Identification System and the Hazardous Material Identification Guide (HMIG or HMIS) may be used to comply with the labeling requirements of the OSHA Hazard Communication Standard (HCS). These systems, although similar, differ in some important respects.

Similarities:

1. Each system has four color coded fields to indicate the flammability (red), health (blue), reactivity (yellow), and specific hazards (white) associated with the material.
2. Each uses a system of five numbers, ranging from 0 to 4, to indicate the severity of hazard, with 0 being the least and 4 being the most hazardous, for the flammability health and reactivity section. (Info on the white section varies - see differences)

Differences:

1. Possibly the most significant difference, however, has to do with the intended audience for each of the systems. The HMIG (or HMIS) was devised as an HCS compliance tool, and has employees who must handle hazardous chemicals in the workplace as the intended audience. The NFPA system was designed to alert fire fighters arriving on the scene of a fire to the hazards associated with materials present at that location. Therefore, the numbers assigned in the NFPA system assume that a fire is present. No such assumption holds in the HMIG/HMIS system. For this reason, the numbers that are assigned to the flammability, health, and reactivity hazards may differ between the NFPA and HMIG or HMIS systems, even for the exact same chemical.
2. HMIG/HMIS: The fourth, white bar is marked “protective equipment” in the HMIG system, and the “personal protection” in the HMIS system. Both systems (HMIG and HMIS) place a letter in this bar to indicate the kind(s) of personal protective equipment (PPE) that should be used in order to handle the material safely. The letters used are A - K and X. Meanings of the letters are the same in both systems, and both systems may augment the letter code with icons or pictograms showing the kinds of PPE to be used.

A significant difference between the HMIG and HMIS systems is that the recently (1995) revised HMIS system now includes a second box on the blue (health hazard) bar. If this second box holds an asterisk (*), the health hazard associated with the material is a chronic (long-term) effect.

BLUE: Health Hazard

RED: Fire Hazard (flammability)

YELLOW: Reactivity Hazard

WHITE: Other (i.e. oxidizer, water reactive, personal protection equipment (PPE) required, etc.)

GRAY: At Middle Georgia College this storage area consists of chemicals showing no storage or minimal storage hazard.

Primary and Secondary Containers

All hazardous chemicals introduced into the workplace by employers and used by employees shall be in labeled containers that meet the requirements of OSHA's (Occupational Safety and Health Administration) Hazard Communication Standard (29 CFR 1910.1200). Labels on all incoming chemical containers cannot be removed or defaced (unless the container is empty and ready for disposal). Therefore “Primary” labels that come with the chemicals' original containers require no action. However, labels on “secondary” containers such as squirt bottles, tote tanks and wash buckets, etc must be labeled.

It is important to understand that OSHA recognizes two types of containers and labels: primary and secondary. A primary label is one that is prepared by the manufacturer of the chemical and affixed to all containers of this chemical before it is shipped to consumers.

These labels are required to meet all of the requirements established by OSHA; therefore, employers/consumers would be in full compliance if they elect to rely on the primary labels supplied by the manufacturer.

The primary container's label must include: The identity of the chemical (as given on the MSDS), the

appropriate hazard warnings, and the name and address of the manufacturer, distributor, or responsible party.

If an employee transfers a chemical from a primary container into another container which will be used only in that facility, the container is called a secondary container.

The work shift supervisor must ensure that these labels include: The identity of the chemical (as given on the MSDS), the appropriate hazard warning (which may include either a NFPA or HMIS label), the date of transfer, and the initial of preparer.

Portable containers will be classified as secondary containers and must be labeled unless: Only one person uses the material AND the material is used entirely in one shift.

If workers on different shifts use the same container, then it must be labeled. The labeling of all portable containers is a recommended practice which will prevent accidental mixing of reactive substances.

If the secondary container is intended only for short-term storage (one week or less), it shall be labeled with the name of the chemical and the date of filling. Vials and test tubes may have chemical labels affixed to the rack or container in which they are held, rather than on each vial or test tube, so long as every vial or test tube in the rack or container presents the same hazard. This type of temporary secondary container shall be labeled with the name of the chemical, fill date, and initial of preparer at a minimum.

If an employee of the College combines chemicals in a separate container this container now becomes a “primary container” of the newly created solution and its label must include all information required on a primary label. It is also that employee’s responsibility to generate the necessary hazard ID numbers based on the hazards associated with each constituent in the new solution.

The name of the chemical (identity) on both the primary and secondary labels should match the identity on the MSDS.

Obtaining New Containers

When new containers/drums are introduced to the campus, any old label(s) on the container must be painted over and a new label must be fixed to the container. Examples include waste paints, waste floor stripper, waste airplane cleaner, and so forth.

Unlabeled Containers

If an employee finds an unlabeled or defaced labeled container in the workplace, it is considered to contain a hazardous chemical. The employee should immediately notify the supervisor. It is the responsibility of the supervisor to identify the contents. The supervisor should request a label from the manufacturer or label the container using the MSDS to transfer accurate information, or use a copy of a properly labeled container. If after exhausting all efforts to identify the contents, the supervisor shall call the RTK Coordinator for assistance in investigation and attempting to determine the contents. If such efforts fail to identify the contents, the supervisor will isolate the container from other chemicals, treat it as a container of hazardous chemicals having all possible hazardous characteristics. The supervisor should then contact the EHS office for proper storage considerations until the container can be removed as hazardous waste. The disposal company may assist in the identification, otherwise, it is the responsibility of the department to request identification.

Label Inspection

Inspection for proper labeling will be conducted randomly by the RTK Coordinator and/or the Middle Georgia Laboratory Safety Committee. Any reported improperly labeled container must be identified and corrected by the Supervisor within 24 hours. The report should be signed and returned to the EHOS office. If the supervisor cannot identify the container, he/she will follow the procedure for “Unlabeled Containers.”

Summary

1. The employer checks all containers when they arrive to make sure they are properly labeled and not damaged. The labels must stay on the container and be readable as long as they are in use.
2. Report any container without a label or damaged label.
3. The LABEL is the source of immediate information on the chemical. (MSDS contains more detailed information)
4. Be familiar with the requirements of primary and secondary labels.
5. Always start preparing for a job involving a hazardous chemical with these four steps:
 - Read the container label.
 - Read the MSDS.
 - Follow the instructions and precautions on the MSDS.
 - Alert your supervisor if you can't understand the label and/or you can't find an MSDS or don't understand some part of the information it provides.

That last point is an important one. There's a lot of information on Labels and MSDSs and some of it is in unfamiliar or technical language. This label training module has been prepared by your EHS officer to keep you informed of the terms. If there's anything you're not sure of, ASK! Remember, you have a right to know about chemical hazards and protective measures. The label and MSDS are key resources, but don't hesitate to get added help to make sure you have the protection you need when you work with chemicals or any job related hazard.

Rights also come with obligations. you have a right to know AND an obligation to use the information on a material safety data sheet to protect yourself and others from chemical hazards.

Only **YOU** can make safety happen.