I. WHAT'S ALL THE SIGNAGE ABOUT?

OSHA regulations for Hazardous Chemicals in Laboratories (29CFR1910.1450), Hazard Communication (29CFR1910.1200), Exits (29CFR1910.37), Fire Extinguishers (29CFR1910.157), and ANSI rules for Accident Prevention Signs (Z35.1-1968), and Accident Prevention Tags (Z35.2-1968), to name a few standards/regulations, require facility markings or signage in efforts to alert employees to dangers in the workplace. The purpose of this article is to inform science teachers and supervisors of common signage they should embrace in their laboratories. Some markings are required and others are strongly recommended as prudent practice. The markings can often be found in the appendixes of safety standards.

II. SAFETY THROUGH SYMBOLS!

With today's diverse working population and language barriers, symbols and color coded signage help alert all employees to danger in the workplace. OSHA addresses this problem in its "Specifications for accident prevention signs and tags" (29CFR1920.145). OSHA recommends the following codes:

A. DANGER: Red signs with lettering or symbols in black and white - indicates immediate danger. If not avoided, will result in serious injury or death.

B. WARNING: Orange signage with lettering or symbols in a contrasting color to represent a hazard level between DANGER AND CAUTION. If not avoided, could result in serious injury or death.

C. CAUTION: Yellow sign with black lettering to warn employees against potential hazards. If not avoided, could result in a minor or moderate injury.

D. BIOHAZARD: Signage with fluorescent orange or orange/red signs to designate infectious agents posing risk of death, injury or illness.

E. SAFETY INSTRUCTION SIGNS: Green signs with white lettering providing general suggestions of safety measures.

F. EXIT SIGNS: Must be displayed in legible letters, not less than 6 inches high, on a white field and the principal stroke of the letters shall be at least three-fourths inch in width.

III. SIGNS AND LABELS IN THE LABORATORY!

Prominent signs and labels should be posted in the science laboratory:

A. Location signs are required for eyewash stations, safety showers and other safety and first aid equipment. - .151(c)

B. Warnings at locations or equipment where special or unusual hazards exist; e.g., Laser, hazardous chemicals, etc. - .1450 Appendix A

C. Areas where food and beverage consumption and storage are allowed; e.g. refrigerators for edible food and
refrigerators for hazardous chemical storage; - .1450, Appendix A.

D. Telephone numbers of emergency personnel/facilities, supervisors and lab workers; - .1450, appendix A.

E. Identity labels showing contents of containers (including waste receptacles) and associated hazards. - .1450(h)(1) & - .1200(f)(5)

F. Material Safety Data Sheets (MSDSs) readily accessible in an MSDS station. - .1200(g)(10).

G. Exit or means of egress signage must be marked by readily visible signs. - .1450, Appendix A and Exits .37(q)

H. Eye protection warning; e.g. fume hood, entrance to lab, etc. Note some states have goggle laws which require posting of signage such as the goggle statute. - .145(c)(2).

I. Floor Markings: Permanent aisles and passageways must be appropriately marked; e.g., safety zones around eyewash stations.

IV. CHEMICAL STORAGE AREA MARKINGS!

A. Fire Extinguisher: extinguishers must be readily accessible relative to location and identification. At least one fire extinguisher must be located within 10 feet from the door opening into any room used for storage of flammable and combustible liquids. At least one portable fire extinguisher must be located not less than 10 feet, nor more than 25 feet, from any Class I or Class II liquid storage area located outside of a storage room but inside a building. - .106(d)(7) and - .157(c)(1).

B. Spill Control Station: Spill control stations must be set up where hazardous substances can be released into the workplace. Signage must indicate location of Spill Control Station - .120 Appendix C.


D. Danger: No Smoking: Signage is required noting smoking is not permitted in areas where flammable or combustible liquids are stored. - .106(d)(7).

E. Hazard Communication Labels on Containers: All containers of hazardous chemicals in the workplace must be labeled, tagged, or marked with the chemical name and an appropriate hazard warning. - .1200(f)(5).

F. Aisle Markings: Inside storage room containing flammable and combustible liquids must have one clear aisle at least 3 feet wide with aisle markings. - .106(d)(4)(iv).

G. No Open Flames, No Water Reactive Materials: Open flames are not permitted in flammable or combustible liquid storage areas. Water reactive materials may not be stored in the same room with flammable or combustible liquids. - .106(d)(7)

H. Gas Cylinder Markings: Compressed gas cylinders must be legibly marked with either the chemical or the trade name of the gas. - ANSI Z48.1-1954.

V. HAZARDOUS CHEMICAL LABELS!
OSHA's Hazard Communication standard establishes uniform requirements for hazardous chemical information and training. This information is provided by manufacturers and shared with employers via material safety data sheets (MSDS) and labels. The labeling requirements by OSHA are not applicable to all substances in the workplace. For example, pesticide labeling is regulated by the Environmental Protection Agency, foods, drugs, etc. are regulated by the Food and Drug Administration.

Chemical manufacturers and distributors must ensure that hazardous chemicals shipped to employers are labeled with appropriate hazard warnings, the identity of the chemical and the name/address of the manufacturer. Workplace containers of hazardous chemicals must also have employee protection. The employer (employees) is not required to label portable containers in which hazardous chemicals are transferred from their original containers, as long as they are intended for immediate use.

OSHA requires a written program in both the Hazard Communication standard and the laboratory standard. The following components must be included in the written plans: description of labeling system, procedures to review information for labeling, designation of person responsible for labeling containers of hazardous chemicals.

VI. SIGNING OFF!

Signage is not only important to maintaining a safe working environment for employees and students, it is the law. "Signing off - over and out!"

Author's Note: The author wishes to sincerely thank John F. Able, CSP, Occupational Safety Training Specialist for Conn-OSHA, Wethersfield, CT, for his time and effort in reviewing this article.

LIVE LONG AND PROSPER WITH SAFETY!

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