



CHEMICAL HYGIENE

In modern society, Humans have found a way to use natural chemicals or to manufacture synthetic ones for beneficial purposes. Their use is everywhere. Exposure to chemicals can cause illness and death. Death from chemical exposure is approximately 150 a day or 50,000 persons per year. For this reason it is extremely important to follow good chemical hygiene practices. It is vital to the health and safety efforts of everyone to know the hazards from exposure to chemicals in the workplace. For this reason the Federal Government enacted laws pertaining to chemical use under the Occupational Safety & Health Agency (OSHA), Title 29 of the Code of Federal Regulation (29CFR1910), with subparts to specify minimum safety standards. These standards are applicable to all academic institutions.

Federal Law requires each laboratory or workplace using chemicals to have its own system to provide information to employees. (OSHA 29CFR1910.1450) Known as the Laboratory Standard provides guidelines for:

1. A written Chemical Hygiene Plan (CHP).
2. An inventory of all chemicals.
3. Material Safety Data Sheets (MSDS).
4. A labeling system to communicate the hazards and safety precautions.
5. Provides for Chemical Hygiene Officer(s).(CHO)

(OSHA Hazard Communication Standard, 29CFR1910.1200). Is another important standard for Chemical Hygiene, the standard defines a Chemical hazard as: A substance capable of causing harmful effects to health and safety. It does not mean that one will be harmed each time he or she is exposed to the chemical. Hazard refers to the level of risk. The greater the hazard, the greater the risk. Ones own sensitivity to certain chemicals, safety precautions and lax of protection can increase the safety risk. Hazardous chemicals under this standard are ones that meet any of the following conditions:

1. It is cancer causing, toxic, corrosive, irritant, strong sensitizer, flammable or reactive and poses a threat to human health or the environment.
2. Chemical hazards are listed under the chemicals in the Occupational Safety and Health Act, 29CFR1910, subpart Z.
3. All chemical hazards are assigned Threshold Limit Value (TLV) by the American Conference of Governmental Hygiene (ACGIH).

This Hazardous Communication Standard covers:

1. Health Hazards
 - a. Acute and chronic effects
 - b. Routes of entry
2. Exposure Limits

3. Toxicity information
4. MSDS's
5. Signs and labels
6. Hazard rating systems
 - a. HMIS (Health Materials Information System) Labels
 - b. NFPA (National Fire Protection Association) Labels
7. Overexposure symptoms

References:

1. OSHA 29CFR1910.1450 *** <http://www.osha.gov>
2. OSHA 29CFR1910.1200 ***
3. National Fire Protection Association. NFPA45 <http://www.nfpa.org>
4. "Safety in Academic Chemistry Laboratories ";6th edition
American Chemical Society; Washington, DC; 1995