

## Hazardous Chemical Training

Hazardous chemical products are everywhere in the industry of manufacturing, university laboratory experiments, medical research, and construction. These chemicals have a wide range of different uses from lubrication of mechanical parts, adhesives, paint thinners, coolants, creating pesticides, cutting materials and creating medicines. We must know how to use chemicals safely. The first step in using chemicals safely is to identify those chemicals that maybe hazardous to our health and physical safety.

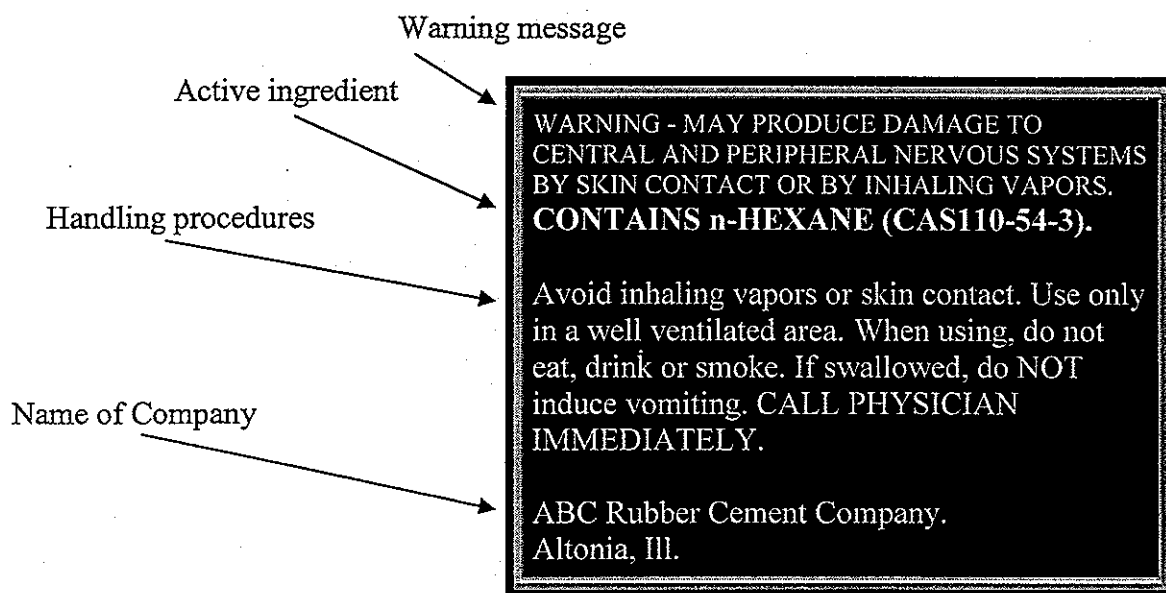
### Questions to ask yourself about the chemical or chemicals being used:

1. How can this chemical or these chemicals hurt me?
2. What can I do to protect myself?
3. Where to find answers for the first 2 questions above?

*Answers to questions 1, 2, and 3:* the most immediate source of chemical information is on the chemicals' label located directly on the container. The second source of information about the chemical can be found on the Material Safety Data Sheet (MSDS) located in the hanging basket near the chemicals' storage area.

### Example of warning label

1. Warning message of possible reactions to contact with the chemical.
2. Name of active ingredient of the chemical.
3. Safe handling procedures and protective clothing to be worn.
4. Name of company that manufactured the chemical.



**Note:** This label does not provide safety equipment to be worn. This information can be found on the Material Safety Data Sheet.

Key words to look for on a hazardous chemical label include:

**Danger**

**Moderate Risk**

**Caution**

**Serious Risk**

These keywords are a prompt for protective clothing/ equipment to be worn before use of the chemical or chemicals. These key words also prompt the user to identify if the chemical is flammable, corrosive, or toxic which could result in the immediate harm with long term effects or death to yourself or coworkers.

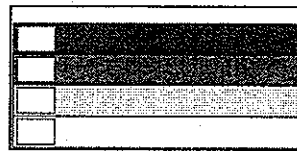
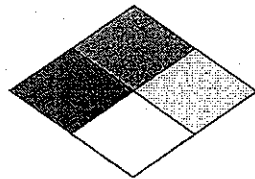
*Note:* If you have troubles interpreting a chemicals' label contact your supervisor for instructions on how to handle the chemical or chemicals safely.

### Plant Label

The other label we must familiar with is the Plant Label. The label is easily identified as the Diamond shape with the 4 colors Blue, Red, Yellow, and White. The 4 colors of the diamond are the different classes of hazard and rating scale from 0-4.

**Blue** = Health hazard, **Red** = Flammability hazard, **Yellow** = Reactivity hazard,

**White** = Special hazards or Protective equipment to be worn.



#### **Blue Health hazard scale:**

- 0-No Hazard
- 1-Slight hazard
- 2-Dangerous
- 3-Extreme Danger
- 4-Deadly

#### **Yellow Reactivity scale:**

- 0-Stable
- 1-Normally stable
- 2-Unstable
- 3-Explosive
- 4-May Detonate

#### **Red Flammability Scale:**

- 0- Will not burn
- 1- Ignites above 200° degrees Fahrenheit
- 2- Ignites below 200° degrees Fahrenheit
- 3- Ignites above 100° degrees Fahrenheit
- 4- Ignites above 73° degrees Fahrenheit

#### **White Hazard Scale:**

- W**- Water Reactive      **ALKI**- Alkali
- OX**-Oxidizer
- R**- Radioactive
- COR**- Corrosive
- ACD**- Acid

## Physical Hazards and their symbols

The 3 most common types of physical hazards when handling hazardous chemicals are:

1. Fire
2. Explosion
3. Chemical Reactivity

Symbol 

There are 3 classes of materials that use the fire symbol which include Flammables, Combustible, and Pyrophoric.

*Flammables* can ignite and burn easily and have a flashpoint under 100° Fahrenheit or 37.7° degrees Celsius

*Combustibles* do not ignite as easily they have a flashpoint above 100° Fahrenheit or 37.7° degrees Celsius

*Pyrophorics* burst into flames on their own at temperatures below 130° Fahrenheit or 54.4° degrees Celsius

**Note:** When working with these chemicals you must never expose them to sparks, flame or light a match near them. Always consult the container label and MSDS when the flame symbol appears on the container.

Symbol 

*Oxidizers* cause other substances to burn more easily through a chemical reaction or change. Organic peroxides contain oxygen and act as powerful oxidizers.

Symbol 

Great care should be taken when you handle gas cylinders to insure that they are not damaged when they are moved or used. In addition, you should read the warning label and the MSDS for safe handling procedures concerning the gas contained in a gas cylinder.

## Elements of EPA and OSHA Hazard communication Standards

1. Materials Inventory - A list of the hazardous materials present in your work area.
2. Material Safety Data Sheets - A detailed description of each hazardous material listed in the Materials Inventory.
3. Labeling - Containers of hazardous materials must have labels which identify the material and warn of its potential hazard to employees at all times.

*Exception:* A hazardous material in portable containers which are for the immediate use of the employee who performs the transfer is the exception to this rule.

4. Training - All employees must be trained to identify and work safely with hazardous materials.
5. Written Program - A written program must be developed which ties all of the above together.

## **Personal Protective Equipment**

Safe work practices will insure that chemicals are used correctly and safely. We must protect ourselves from potentially hazardous situations when coming into contact with hazardous chemicals and materials. The first line of defense is to identify what chemical hazards we are dealing with and using the proper equipment to protect ourselves.

Masks, eye protection, gloves, aprons, and other protective equipment and clothing are designed to protect you while you work. **USE THEM!**

Knowing how to work safely with chemicals that pose a hazard is an important activity. This is the reason for this training. You have a responsibility to use the knowledge and skills to work safely. Safety meetings, MSDSs, and various bulletins will give you the knowledge you need to protect yourself from hazards. **USE THEM!**

Be on the lookout for any physical symptoms which would indicate that you or your coworkers have been overexposed to any hazardous chemical. Symptoms, such as skin rashes, dizziness, eye or throat irritations or strong odors, should be reported to your supervisor.

I have received, read, and understand all information given to me in this Hazardous Chemical training meeting. I understand that it is my responsibility to ensure the safety of myself and coworkers when working with Hazardous Chemicals and Materials. I understand it is my responsibility to wear protective equipment and clothing when Hazardous Chemicals and Materials are being used, transported or handled.

**Signature:** \_\_\_\_\_ **Date:** \_\_\_\_\_

**Supervisor Signature:** \_\_\_\_\_ **Date:** \_\_\_\_\_