Understanding Chemical Labels and Pictograms



What’s at Stake?

Chemicals are present everywhere. We encounter them every day, often without even knowing it. But, not knowing what chemicals are present at work and how to manage them safely, puts lives at stake.

What’s the Danger?

Chemicals come in many forms and can cause death, cancers, respiratory, organ damage, and birth defects, if misused. Some may start fires, cause explosions, or damage the environment. Because of their dangerous nature, safety and health laws require suppliers and workplaces to label and attach information about all hazardous products. Labels carry the product name, related hazards, safety measures and more. The absence or damage of labels can lead to injury, illness, and catastrophic events.

Factors contributing to chemical accidents include:

- No **product identifiers** such as brand, chemical, common, generic and trade names of the product to inform users what the substance is. This can easily cause someone to use the wrong chemical. Example, bleach can be mistaken for water.
- In the event of a chemical accident, further damage can be experienced if there is no **supplier identifier.** The supplier identifier lists the name, address and telephone number of the manufacturer or importer to be contacted for advice.
- The absence of a **signal word** (either Danger or Warning) that will alert and show the severity of a potential hazard to a user.
- The absence of **hazard statement(s**) describing the hazardous nature of a product. Example “poisonous; avoid contact with mouth.”
- No **precautionary statement(s)** that describe measures to prevent or minimize the effects of a hazard. Example, “use eye protection.”
- No **supplemental label information** on details about potential hazards and precautions not included in the label.
- Not understanding **pictogram(s)**. Pictograms are images inside a red square which gives users an idea of the type of hazard in a product. The following describes 9 pictograms:

1. “Flame” pictogram warns about liquids, gases, mixtures, solids or sprays that can start a fire or explosion.
2. “Flame over a circle” is for oxidizing gases, liquids and solids that combine

with oxygen to increase fires and explosions.
3. The “gas cylinder” shows gases under pressure such as compressed gas, liquefied gas, refrigerated liquefied gas, and dissolved gas, all of which can cause an explosion, severe cold, burns and injuries.
4. The image of a “corroding hand and metal” represents corrosive products that damage metals and irritates the eyes and skin.
5. “Exploding bomb” shows substances and mixtures that react alone to cause fires and explosions.
6. The “skull and crossbones” is for toxic products that must never be inhaled or allowed to touch the skin and mouth.
7. The image of a “human head and shoulders” represents chemicals that can easily cause death, cancer or damage the respiratory/reproductive systems, skin and body organs.
8. The “exclamation (!)” is used to show high toxic risk, skin/eye allergies and organ damage.
9. The image of the “dead fish and dead tree” are substances that may cause harm to the aquatic environment.
    1. This is a non-mandatory pictogram under OSHA, because it deals with environmental hazards.
    2. Environmental hazards are regulated under the EPA or Environmental Protection Agency.

The absence of any of the above label information, required to be in English at a minimum, can result in accidents.

How to Protect Yourself

- Always check for a label before using any product.
- Follow all the instructions on the label and SDS.
- Learn to identify pictograms.
- Attend all training provided by your employer.
- Use all recommended PPE.
- Ask questions when in doubt.
- Avoid unlabeled products and do not use unreadable labels. Report these to your supervisor so a new label can be created and used.

Final Word

Chemicals can be dangerous to your safety, your health and the environment. Always read labels and pictograms for information on safe handling, use, and storage.