



Inside this issue:

Understanding HazCom labels 1

Safety focus: Teamwork . . 3

Blood pressure and your health 4

National Institutes of Health Office of Research Services Division of Occupational Health and Safety

Providing a safe and healthy environment for employees, patients and visitors.

“Safe science and good science go hand-in-hand.”

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Understanding HazCom labels

As an employee, you may be exposed to any number of hazards in your workplace including chemicals. To help protect you from the dangers of chemicals, in 2012, the Occupational Safety and Health Administration (OSHA) aligned the hazard communication (HazCom) standard with the United Nations' Globally Harmonized System of Classification and Labeling of Chemicals (GHS). The revised standard includes requirements for applying GHS hazard classifications, format and content for Safety Data Sheets (SDSs), and standardized container label elements.

The purpose of labels is to warn about potential dangers. Labels serve as an immediate warning and as a reminder of the more detailed information provided in other formats such as safety data sheets (SDSs). The standardized format for labels makes them easier for everyone who uses the chemical to find and learn about the chemical's hazards.



Labels on shipped containers

Chemical manufacturers or importers classify a chemical's hazards, and they use that information to prepare the labels you see on shipped containers of hazardous chemicals.

Labels for shipped containers must have these six required elements:

1. **Product identifier.** This is the name or number used to identify the chemical. It will also be used to identify the chemical on the SDS and the list of hazardous chemicals in the employer's written hazard communication program.
2. **Signal word.** This helps you know how severe the hazard is. The word "danger" is used for the more severe hazards, and "warning" is used for the less severe hazards.
3. **Hazard statement.** This is a brief statement for a hazard class and category to describe the nature of the hazard.
4. **Pictogram.** This is a symbol used to show you the chemical's hazard class. There are eight pictograms used to meet the HazCom standard's labeling requirements, and one additional pictogram (not required under the HazCom standard) is used to show environmental hazards.
5. **Precautionary statement.** This recommends the steps you should take to safely use, handle, and store the chemical.
6. **Name, address, and telephone number of the chemical manufacturer, importer, or other responsible party.** The responsible party is someone who

(continued on page 2)

Understanding HazCom labels (continued from page 1)

can provide more information on the chemical and what to do in case of an emergency.

GHS pictogram labels

There are two general types of chemical hazards: physical hazards and health hazards. The nine pictograms used on GHS labels quickly identify the hazards.

Flame over circle is used for:

- Oxidizers

Flame is used for:

- Flammables
- Pyrophorics
- Self-heating
- Emits flammable gas
- Self-reactives
- Organic peroxides

Exploding bomb is used for:

- Explosives
- Self-reactives
- Organic peroxides

Skull and crossbones is used for:

- Acute toxicity (fatal or toxic; severe)

Corrosion is used for:

- Skin corrosion; burns
- Eye damage
- Corrosive to metals

Gas cylinder is used for:

- Gases under pressure

Health hazard is used for:

- Carcinogenicity
- Respiratory sensitizer (allergic reaction)
- Reproductive toxicity
- Target organ toxicity
- Mutagenicity
- Aspiration toxicity (directly inhaling a harmful solid or liquid chemical or indirectly inhaling liquid after vomiting)

Exclamation mark is used for:

- Irritant (skin and eye)
- Skin sensitizer (allergic reaction)
- Acute toxicity (harmful)
- Narcotic effects (dizziness, drowsiness, headache, nausea, etc.)
- Respiratory tract irritant

The health hazard pictogram indicates more severe hazards than the exclamation point.

You might also see labels using an **Environmental** pictogram to show aquatic toxicity hazards. OSHA's HazCom standard doesn't require the use of the Environmental pictogram.



OSHA also doesn't require a pictogram on the labels for two hazards. For a simple asphyxiant, the signal word "Warning" is required, along with the hazard statement "May displace oxygen and cause rapid suffocation." For combustible dust, the signal word "Warning" issued along with the hazard statement "May form combustible dust concentrations in air."

In-house labeling systems

As you use the chemicals in the workplace, you can rely on the labels that were on the containers when they arrived. OSHA doesn't require containers to be relabeled (unless a label is removed from a container or if it becomes unreadable). If you transfer chemicals into another container, be sure to label it if anyone else could use it.

When in-house workplace containers are labeled, the labels must include:

- The product identifier.
- Words, pictures, symbols, or combination of these, that provide at least general information on the hazards of the chemicals.



Safety focus: Teamwork

Teamwork is an essential part of workplace success. It involves working together to achieve a common goal. It also means sacrificing individual preferences and recognition in order to help the group accomplish what it needs to do.

Teamwork involves building relationships and working with other people using a number of important skills and habits:

- Working cooperatively;
- Contributing to groups with ideas, suggestions, and effort;
- Communication (both giving and receiving);
- Sense of responsibility;
- Healthy respect for different opinions, customs, and individual preferences; and
- Ability to participate in group decision-making.

For example, team members in the workplace plan ahead and work cooperatively to assign tasks, assess progress, and deliver on time. They have professional discussions during which differing approaches and opinions might be shared and assessed in a respectful manner. Even when certain employees end up with tasks that were not their first choices, jobs get done with limited complaints because it is in the spirit of teamwork and with the overall goal in mind.

Teamwork helps fight fatigue

With the economic downturn in recent years, companies have had to do more with less. Doing more with less means that employees may have to work extended shifts or have more responsibilities added to their jobs. Studies have found that fatigue can lead to dangerous errors by doctors,



pilots, and others in high-risk professions. New research shows that individuals who work together as a team display better problem-solving skills than those who face their fatigue alone.

Daniel Frings, PhD, a senior lecturer in social psychology at London South Bank University published a study in



2011 on teams and how they handle fatigue in the American Psychological Association's *Journal of Experimental Psychology: Applied*[®]. "Teams appear to be more highly motivated to perform well, and team members can compare solutions to reach the best decision when they are fatigued. This appears to allow teams to avoid the inflexible thinking experienced by fatigued individuals," said Frings.

The study examined the problem-solving skills of 171 army officer cadets during a weekend training exercise. Individual cadets and teams of four cadets worked on a series of math problems. Some cadets were tested at the beginning of the training when they were rested, while others were tested at the end when they were exhausted from military drills, night watch duty, and a lack of sleep. The results showed that individual soldiers who were fatigued performed significantly worse on the tests than alert soldiers. However, teams of cadets performed just as well when they were tired as when they were alert.

The cadets completed math tests that measured the "Einstellung effect," a type of inflexible thinking where individuals rely on previous solutions to problems rather than adapting to new situations that may require a different approach. Some problems had multiple solutions so cadets had to show flexible thinking as they worked through the test.

Teams may handle fatigue better than individuals because some team members may be less susceptible to fatigue and remain able to perform at a high level, the study found. The study concluded that, in situations where fatigue is a factor, decisions should be made by teams rather than individuals when possible. If that isn't practical, then organizations should train their employees to identify the inflexible thinking that can result from fatigue and possibly delay crucial decisions.

Everyone benefits from working together

When employees work together to accomplish a goal, everyone benefits. Henry Ford who pioneered the assembly line production method stated that, "Coming together is a beginning. Keeping together is progress. Working together is success."

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The purpose of this newsletter is to provide a forum for the dissemination of health and safety information. It is intended to enhance communication to National Institutes of Health (NIH) employees, raise awareness of current safety policies and procedures, and provide guidance on relevant issues. It is provided as a service by the NIH, Office of Research Services, Division of Occupational Health and Safety.

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Blood pressure and your health

"If your actions inspire others to dream more, learn more, do more, and become more, you are a leader."

John Quincy Adams



High blood pressure usually has no warning signs or symptoms.

As blood makes its way from your heart to other parts of your body, it's pushing on artery walls. When this pressure is too great, a person has hypertension, or high blood pressure.

It's normal for blood pressure to rise and fall throughout the day, but high blood pressure harms your health if it remains elevated for a prolonged period of time.

High blood pressure makes your heart work harder and damages artery walls. If it's not controlled, it can lead to heart attack, stroke, or heart failure, as well as vision loss and kidney problems.

Because high blood pressure usually has no warning signs or symptoms, many people are unaware they have it. That's why it's important to have your blood pressure regularly checked by your health care provider.

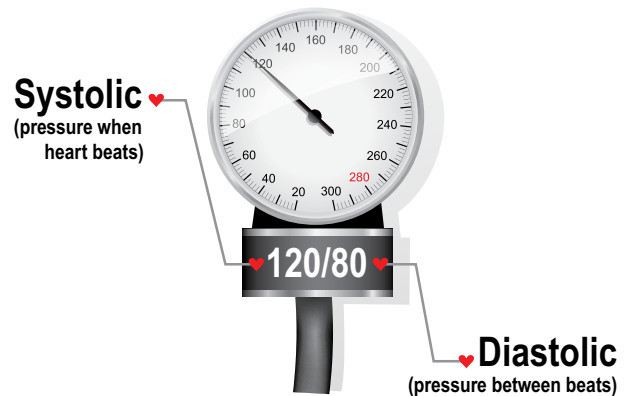
Measuring the force

A blood pressure reading measures the force of blood pushing against the walls of your

arteries when your heart pumps and when it's resting between beats.

The systolic pressure, or the top number of the blood pressure reading, measures the pressure in your arteries when your heart beats.

The diastolic pressure, or bottom number, measures the pressure in your arteries between heartbeats.



Certain lifestyle choices can help prevent high blood pressure. These include eating a healthy diet, maintaining a healthy weight, exercising, managing stress, refraining from smoking, and consuming alcohol in moderation.

The meaning behind your blood pressure numbers			
Top number		Bottom number	Category
< 120	and	< 80	Normal
120 – 139	or	80 – 89	Prehypertension
140 – 159	or	90 – 99	High Blood Pressure Stage 1
160 or higher	or	100 or higher	High Blood Pressure Stage 2