



Working Safely with Solvents

Solvents are liquids and sometimes gases that can dissolve or extract substances. Some of the most common uses of solvents include dissolving grease, oil, and paint and cleaning electronics, tools, and engines. The most common solvent is actually water, which is known as the “universal solvent” because it is able to dissolve the largest variety of substances. Water is harmless, but you may be exposed to more toxic solvents like acetone or turpentine in your workplace or at your home.

Here are some tips to remain safe if you work with solvents:

- Carefully read and follow all instructions on safety data sheets (SDSs).
- Never use a solvent or any chemical from an unlabeled container.
- Wear appropriate personal protective equipment (PPE), including splash-proof goggles.
- Do not inhale vapors—if someone does, get him or her to fresh air immediately. If someone is not breathing, he or she should receive immediate medical attention.
- Some solvents can contaminate water supplies, so don't flush them down a drain.

Importance of Safety Data Sheets

You have probably heard of safety data sheets (SDSs), and if you work with chemicals, you have hopefully been trained by your employer to read one. Each chemical has a unique SDS created by its manufacturer, but the format always includes 16 sections. Each SDS details important information about that specific chemical, including its product identification, composition or ingredients, identification of hazards to humans and the environment, physical and chemical properties, first-aid measures, firefighting measures, and what to do if there is an accidental spill. SDSs also provide information on how to properly handle, store, transport, and dispose of the chemical; what personal protective equipment may be necessary when working with the chemical; and what regulatory requirements apply to the use of the chemical.

OSHA requires that SDSs be readily accessible to you in your work area. Make sure you read and understand the information on the SDS for each chemical you work with. Additionally, most SDSs are readily available on the Internet with a quick search.

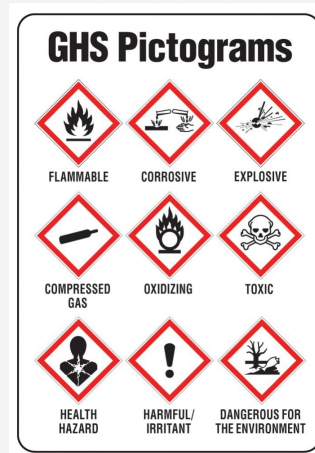
GHS Labels

Know how to read and understand them

The Globally Harmonized System of Classification and Labelling of Chemicals (GHS) is a system for standardizing how chemicals are labeled and classified across the globe. The GHS is intended to improve understanding of hazards and lead to better handling and use of chemicals in the workplace.

The labels provide workers with immediate visual reminders of hazards. The elements of a GHS-compliant label include:

- **Product Identifiers:** Chemical name, code, quantity, etc.
- **Supplier Information:** Manufacturer's company name and contact information.
- **Pictograms:** Nine different black symbols on a white background inside a diamond-shaped red border depict the hazard classification of the given chemical.
- **Hazard Statements:** Various detailed phrases describing the nature and degree of hazards associated with a chemical, e.g., flammable gas, fatal if swallowed, causes eye irritation.
- **Precautionary Statements:** Four types of precautionary statements must be on each label: prevention, response, storage, and disposal.
- **Signal Word:** One of two signal words for alerting the level of hazard:
DANGER—more severe hazards possible.
WARNING—less serious hazard.
- **Supplemental Information:** Any other instructional information that the chemical manufacturer would like to provide.



Ergonomics in the Office

Protect yourself from musculoskeletal disorders

According to the Occupational Safety and Health Administration (OSHA), 1.8 million workers in the United States report work-related musculoskeletal disorders (MSDs) each year. OSHA states that ergonomics is the solution to preventing these work-related MSD injuries and illnesses. Take these ergonomic steps:

- **Position your monitor directly in front of you** so that you do not have to twist your head, neck, or body to view the screen.
- **Maintain a comfortable viewing distance** between your eyes and the monitor.
- **Place source documents just below eye level**, angled slightly upward, and at the same distance from your eyes as the monitor.
- **Take appropriate steps to reduce glare** on the screen.
- **Adjust your chair** so that you can sit with your back comfortably straight and your head level.
- **Allow your feet to rest flat on the floor** or on a stable footrest.
- **Keep your shoulders and upper arms perpendicular to the floor** and relaxed.
- **Keep your upper arms and elbows close to your body.**
- **Keep your forearms, wrists, and hands straight**, not bent up, down, or sideways.
- **Keep your forearms, wrists, and hands straight**, not bent up, down, or sideways.
- **Give your eyes a break** from time to time by refocusing on something at a distance.
- **Give your body a break** by changing positions every 15 minutes.
- **Stand up and stretch** or walk around for a few minutes every hour.

Guard Against the Machine

Mind those Moving Parts

Almost every machine has moving components that can injure you if they are not properly guarded. For example:

- **Reciprocating motions** include back and forth or up and down motions of machine components, such as the motion of the ram on a power press.
- **Transverse motion** in a straight or continuous line could drag you into a pinch point or shear point, such as the motion of a powered belt.
- **Rotating motion** can be found on almost every machine. Every form of rotation can be hazardous. Even slowly rotating smooth shafts can grab clothing or hair, or push a hand into a more dangerous area. Rotating motions are even more dangerous when the rotating shaft has exposed keys, set screws, bolts, nicks, or spokes. Examples include collars, couplings, cams, clutches, flywheels, shaft ends, spindles, meshing gears, and horizontal or vertical shafts.
- **Nip points** are created when parts with parallel axes rotate in opposite directions. Examples include rollers and sprockets. Another type of nip point occurs between a rotating component and a tangentially moving part—for example, the nip point between a chain and sprocket or a belt and pulley. Nip points are also created between rotating objects and stationary objects, such as screw conveyors, abrasive wheels with incorrectly set work rests, and spoked flywheels.

OSHA regulations require that any machine part that could cause injury must be properly guarded. There are four basic types of machine guards:

1. **Fixed guards** are attached permanently to equipment and can only be removed with considerable effort. They usually cover power transmission units and can also be found on band saws.
2. **Interlocked guards** are designed to be removed or opened to allow access to the hazard zone—for example, to insert or remove material from the point of operation. Once the guard is opened, however, the machine shuts down automatically, effectively eliminating the hazard.
3. **Adjustable guards** allow a machine to handle a wide variety of material sizes while still protecting the unused portion of the blade or the point of operation. These guards must be adjusted manually. An example is the guard over the point of operation on a band saw.
4. **Self-adjusting guards**, typically found on saws, are pushed away from the point of operation when material is fed into the machine. But they only open enough to allow the material into the cutting zone, thus keeping the remainder of the blade covered.

Machine safeguarding is critical, but guards alone won't keep you safe. You must use your knowledge and experience about machine safety every day to stay safe.

