

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.



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Dangers of blue light

The white light we see, from the sun or artificial sources, is made up of light waves of different colors. The visible light spectrum spans red light, with the lowest energy, to blue light, with the highest energy. These higher-energy waves can penetrate the cornea and lens (the outer two layers of the eye) and reach the retina (the back layer of the eye). Most people know about the dangers of ultraviolet (UV) rays, which are not visible to the human eye but are even higher energy than blue light. However, there are negative health effects that can also result from exposure to too much blue light, including eyestrain or retina damage, which could lead to age-related macular degeneration (AMD), an incurable eye disease caused by the degradation of the retina. AMD is the leading cause of vision loss and is caused by both hereditary and environmental factors. It's estimated that 11 million people in the United States have AMD, and it is projected that by 2050, 22 million people will suffer from the disease.

Blue light is not all bad—it serves an important function by regulating your body's circadian rhythm, which is the natural cycle of sleeping and waking. While exposure to blue light during daytime hours is essential for healthy functioning, additional exposure at night could disrupt this natural cycle, causing poor-quality sleep. Many health issues have been related to sleep deficiency, including heart disease, high blood pressure, obesity, and depression. Tiredness on the job also presents safety issues; when employees are not alert, more accidents and near misses have been shown to occur.

While the largest source of blue light is the sun, other sources include:

- Fluorescent, CFL, and LED bulbs
- LED televisions
- Computer, smartphone, and tablet screens

Today, we spend an increasing amount of time in front of screens. Many office workers spend most of their day in front of the computer and at home watching TV, playing computer or video games, and on their smartphone. The proximity of our eyes to the screens and the time spent exposed to the screens have an impact on long-term health risks. While we can't control the natural blue light we are exposed to, you can decrease your exposure to blue light from artificial sources by doing the following:

- Limit your screen time, and take breaks to let your eyes rest.
- Wear yellow-tinted computer glasses or glasses with antireflective lenses that reduce glare and block some of the blue light.
- Use a screen filter. Some operating systems have built-in display functions that decrease the blue light and give it a slightly yellow appearance. There are also apps available for download that can be adjusted to your desired level of filtration.

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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.



Vision, fact or fiction: Quiz

How much do you know about your vision? Select TRUE or FALSE to each of the following statements.

1. Reading in dim light damages your eyes.
2. Eating carrots improves your eyesight.
3. UV light is harmful to your eyes.
4. Blue light is only emitted by artificial sources.
5. Wearing safety goggles around potential hazards can protect the health of your eyes.

Answers. **1. FALSE.** While reading in low light conditions may cause eyestrain, which could result in your eyes feeling tired, it does not hurt your eyes permanently. **2. FALSE.** Carrots, as well as many other vegetables such as broccoli and leafy greens, are high in vitamin A. While vitamin A is an essential vitamin for sight, only a small amount is necessary for healthy vision. A well-balanced diet, which may or may not include carrots, is crucial and provides all the nutrients the body needs. **3. TRUE.** The UV rays are high-energy light waves that can damage your eyes. Prolonged UV exposure can lead to vision loss and cataracts. High short-term exposure can even cause your eyes to become sunburned—a condition called photokeratitis. It is important to wear eye protection and consider wearing a brimmed hat. **4. FALSE.** The sun emits a large range of light waves that include the visible light spectrum. The eye perceives this as color; any waves with energies outside of this range are invisible to the human eye. **5. TRUE.** Safety goggles are a critical component for your eye protection—if chemicals or debris enters your eye, it may cause slight irritation or major injury or blindness.

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Avoiding overexertion

Often, employees experience workplace injuries from overexertion, which is when you strain yourself from pushing your body too hard. This can happen by lifting, pushing, or pulling something too heavy for you.

Overexertion can lead to a “musculoskeletal disorder,” which can include these symptoms: swelling, numbness, stiffness, chronic pain, or the permanent loss of mobility in muscles, tendons, ligaments, and joints.

Overexertion can lead to long-term consequences for health, so preventing overexertion is important and can be accomplished by simple practices:

- Use correct lifting techniques when lifting a heavy object. For example, when you lift, face the load with your feet shoulder-width apart and your back straight, squat by bending at the hips and knees, and then use your leg and stomach muscles to power the lift.
- Use material-handling aides, like a cart or hand truck, to lift and carry heavy or awkward objects.
- Ask for help instead of trying to “muscle” your way through a job alone.
- Don’t add an extra package or box to an already full load; instead, make an extra trip or ask someone to help.
- Don’t overextend or reach to grab that item on a shelf; climb down the ladder, reposition it, and climb again.
- Arrange your work and your workstation to minimize reaching, bending, twisting, and awkward postures.
- Take short breaks when doing strenuous tasks so that you can stretch and relax tense muscles, giving them a chance to recover.

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