

Staying on the Safe Side of Oxidizers



Oxidizers are chemicals that release large amounts of oxygen into the air. If you work with oxidizers, you know that they are a dangerous and unpredictable group of chemicals. Knowing what makes oxidizers dangerous can help you guard against accidents involving them.

Oxidizers Are “Firebugs”

When a fire burns, it needs oxygen to maintain the reaction that feeds the fire; that’s why using a bellows makes a fire burn hotter, and why smothering a fire makes it go out. Oxidizers are like chemical bellows: They provide plenty of oxygen to make a fire bigger and hotter. Inorganic oxidizers can increase the danger of fire around flammable or combustible materials, while organic oxidizers are flammable in themselves. Some organic oxidizers can even explode when they are exposed to heat, shock or friction. Oxidizers can supply oxygen to a fire and support combustion even if there is no oxygen present in the air. Commonly used oxidizers are concentrated nitric acid, compressed oxygen and hydrogen peroxide.

Keep Them Separate

Because oxidizers are “firebugs,” they must be kept away from flammable liquids and from wood, paper and other easy-to-burn materials. Always keep containers of oxidizers tightly closed, and store oxidizers in isolation; even different types of oxidizer should be stored separately. Check containers for leaks, and be sure to use the right container, since some oxidizers can damage seals and valves. Large amounts of them should be stored in a separate room with specific fire-protection requirements. Make sure all containers are clearly labeled; report containers with missing or illegible labels.

In an Emergency

If you spill a small amount of oxidizer in a well-ventilated area, wipe it up immediately, disposing of cleanup materials in an approved manner. Large spills

pose an immediate fire hazard; you should evacuate the area and report the spill at once. Leave the cleanup to an emergency response team that has the equipment and tools designed to protect them and prevent accidental fires.

Using Oxidizers

Because oxidizers are a fire hazard, be sure you are familiar with fire response procedures and the location of fire extinguishers. Before using an oxidizer, read its MSDS to become familiar with the hazards it presents. Is it flammable or explosive? Is it dangerous when mixed with certain other chemicals? In what kind of temporary container can you safely store it? Is it corrosive or dangerous to inhale? How do you handle a spill or accidental contact with it? Most oxidizers are also corrosive and can irritate skin or lungs. Take appropriate precautions, such as wearing personal protective equipment or working under a hood. By knowing its properties, you can more safely use the oxidizer and prevent accidents. ❏

