



## Reducing Carbon Monoxide Risks

According to the U.S. Centers for Disease Control, about 500 Americans die each year from accidental carbon monoxide (CO) poisoning, and another 20,000 are sickened. About 40,000 Americans visit emergency rooms to seek help for possible CO poisoning. In California, CO poisoning causes between 30 and 40 deaths each year, leads to about 700 emergency room visits, and causes thousands of illnesses and injuries.

### Recognize Carbon Monoxide Dangers

Carbon monoxide is a colorless, odorless, toxic gas which is produced by the incomplete combustion of solid, liquid, and gaseous fuels (natural gas, propane, gasoline, oil, kerosene, wood, etc.). CO is absorbed quickly into the bloodstream, where it replaces essential oxygen. Exposure to high levels of CO can cause brain damage or death within minutes by depriving the brain and other organs of oxygen. Exposure to low levels causes flu-like symptoms, including dizziness, headache, fatigue, nausea, and irregular breathing. Exposure to higher levels may cause loss of consciousness and death even before the milder symptoms are experienced.

### Minimize Your Carbon Monoxide Risk

- Know the symptoms of CO poisoning: headache, nausea, dizziness, weakness, vomiting, sleepiness, and confusion.
- If you suspect CO poisoning, or if the CO alarm sounds, turn off all appliances, leave the building immediately, and call 911.
- Follow manufacturers' instructions for safe installation, maintenance, and use of any appliance or fixture that has a flame, such as ovens, burners, fireplaces, wood stoves, or gas-fired dryers, freezers, or refrigerators.
- Never use gas stoves or ovens for space or comfort heating.
- Never use outdoor appliances (generators, grills, etc.) indoors or in the garage.
- Never run a vehicle in the garage, even if the door is open. Exhaust can quickly enter the building and poison the occupants.

- Before using a fireplace or wood stove, open the damper and keep it open until the fire is out and the ashes are cool. The open damper allows carbon monoxide to leave the building.
- Consult local authorities before using unvented gas or kerosene space heaters, which are prohibited in many areas because they produce dangerous carbon monoxide.

### Install Carbon Monoxide Detectors

Even in a well-maintained property, an appliance could malfunction and release toxic carbon monoxide. For this reason, it is prudent to install carbon monoxide detectors throughout the property. Choose only detectors that are listed by Underwriters Laboratories (UL). Follow manufacturers' instructions for installation, testing, and replacement of batteries.

Because CO spreads quickly and evenly, install CO detectors in sleeping areas, hallways, and stairwells to alert occupants quickly. Choose detectors with audible alarms; however, where hearing-impaired residents are present, install detectors that attach to beds and alert residents with strong vibrations to shake them awake.

If the alarm sounds:

- Take the alarm seriously. Do not silence it or disconnect it. The CO alarm is designed to sound when dangerous CO is present.
- Turn off all fuel-fired appliances. Open doors and windows immediately to introduce fresh air.
- If any one has symptoms of CO poisoning, call 911 and get everyone outside. (If people feel better in the fresh air, CO poisoning is likely)
- If no one has symptoms, open doors and windows to increase ventilation, and contact a qualified technician to correct the problem.
- Additional ventilation from doors and windows may reduce CO levels temporarily. However, until a technician has corrected the problem, do not operate any fuel-burning appliances until everything has been declared safe.

For more detailed guidance on reducing carbon monoxide risks, request the Sequoia *Risk Management Guide* "Carbon Monoxide: The Silent, Cold Weather Killer." (SRMG-008)