

TOOLBOX TALKS

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Carbon Monoxide

Carbon monoxide (CO) is a colorless, odorless gas produced by all internal combustion engines, including diesel and propane-powered engines. It is also produced by burning wood, paper, or plastic products and from welding when carbon dioxide shielding gas is used. Because it is not readily detected, employees can be exposed to very high levels without realizing there is a problem. Symptoms include headache, nausea, dizziness, visual disturbance and rapid breathing. A person may feel weak and disoriented, making it difficult to get help. Most people recover completely, but in severe cases, symptoms can persist for many weeks or even months, or there can be permanent brain damage or damage to the heart, or death.

Exposure can occur when operating equipment with small gasoline engines, such as pressure washers, concrete cutters, water pumps, air compressors, and generators at construction sites. CO is also produced from kerosene space heaters (salamanders), natural gas cooking units, and propane-powered floor polishers. Outdoor use of any of this equipment is not usually hazardous but in buildings or enclosed spaces, carbon monoxide can quickly build up to dangerous and even deadly amounts.

The most common workplaces for carbon monoxide exposures are storage facilities, warehouses, cold-storage facilities, and fruit, vegetable and seafood packing sheds that use gas or propane forklifts or other equipment, and in enclosed construction sites or workrooms with portable gas heaters.

Carbon monoxide doesn't suffocate you. It combines directly with the blood so it can't carry oxygen to the tissues. Carbon monoxide can also slow down your brain and reflexes, dim your vision, and lead you into an accident. So, if you have even the least suspicion you're inhaling too much carbon monoxide, get some fresh air and do not return until the area is considered safe.

To prevent accidents from happening OSHA requires having CO monitor in areas where CO can accumulate from combustion engines. Also, always have enough fresh air coming in where combustion engines are running in enclosed areas.

OSHA's permissible exposure limit (PEL) for carbon monoxide is 50 parts per million (ppm) parts of air (55 milligrams per cubic meter (mg/m³)) as an 8-hour time-weighted average (TWA) concentration. NIOSH is stricter on CO. They have established a recommended exposure limit (REL) for carbon monoxide of 35 ppm (40 mg/m³) as an 8-hour TWA and 200 ppm (229 mg/m³) as a ceiling.