Carbon Monoxide Safety Talk



WHAT'S AT STAKE?

Carbon Monoxide (CO) is an invisible, tasteless and odorless gas that can be lethal to human beings. Due to its difficult detection, carbon monoxide is a serious concern in the work place.

WHAT'S THE DANGER?

CO is a common industrial hazard resulting from the incomplete burning of material containing carbon such as natural gas, gasoline, kerosene, oil, propane, coal, or wood. Forges, blast furnaces and coke ovens produce CO, but one of the most common sources of exposure in the workplace is the internal combustion engine

Exposure to Workers

Running an internal combustion engine indoors or in confined areas will quickly fill a workplace with dangerous levels of the gas. **On a worksite there are many possible sources of carbon monoxide, including:**

- Gas-powered engines
- Fires
- Natural gas space heaters
- Furnaces
- Kilns
- Boilers

Workers indoors can also be exposed if vehicles idle next to fresh air intakes on the building.

HOW TO PROTECT YOURSELF

RISK REDUCTION

To reduce the potential for injury or disease, control the risks and hazards in the workplace.

The most effective way to manage the risk of exposure to carbon monoxide is to eliminate the source of exposure. If that's not possible, there are other risk controls to use.

1. **Elimination or substitution**

This involves eliminating the hazard by substituting a safer process or material, where possible. It is the most effective control.

2. **Engineering controls**

Making physical modifications to facilities, equipment and processes can reduce exposure.

3. **Administrative controls**

Changing work practices and work policies, awareness tools, and training can limit the risk of carbon monoxide poisoning.

4. **Personal protective equipment**

This is the least effective control. When used, there must always be at least one other control in place as well.

Occupational Risks

Workers may be exposed to harmful levels of CO in boiler rooms, warehouses, petroleum refineries, pulp and paper production, and steel production; around docks, blast furnaces, or coke ovens; or in one of the following occupations:

- Welder
- Garage mechanic
- Firefighter
- Carbon-black maker
- Organic chemical synthesizer
- Metal oxide reducer
- Longshore worker
- Diesel engine operator
- Forklift operator
- Marine terminal worker
- Toll booth or tunnel attendant
- Customs inspector
- Police officer
- Taxi driver

HOW DOES CARBON MONOXIDE HARM PEOPLE?

The “How”

Carbon monoxide is harmful when breathed because it displaces oxygen in the blood and deprives the heart, brain and other vital organs of oxygen. Large amounts of CO can overcome you in minutes without warning – causing you to lose consciousness and suffocate.

Symptoms

Besides tightness across the chest, initial symptoms of CO poisoning may include headache, fatigue, dizziness, drowsiness, or nausea. Sudden chest pain may occur in people with angina. During prolonged or high exposures, symptoms may worsen and include vomiting, confusion and collapse in addition to loss of consciousness and muscle weakness. Symptoms can vary widely from person to person. CO poisoning may occur sooner in those most susceptible: young children, the elderly, people with lung

or heart disease, people at high altitudes, or those who already have elevated CO blood levels, such as smokers. Also, CO poisoning poses a special risk to fetuses.

Employers Responsibility to Prevent Carbon Monoxide Poisoning

- Install an effective ventilation system that will remove CO from work areas.
- Maintain equipment and appliances (e.g., water heaters, space heaters, and cooking ranges) that can produce CO in good working order to promote their safe operation and to reduce CO formation.
- Consider switching from gasoline-powered equipment to equipment powered by electricity, batteries, or compressed air if it can be used safely.
- Prohibit the use of gasoline-powered engines or tools in poorly ventilated areas.
- Provide personal CO monitors with audible alarms if potential exposure to CO exists.
- Test air regularly in areas where CO may be present, including confined spaces.
- Use a full-facepiece pressure-demand self-contained breathing apparatus (SCBA) certified by the National Institute for Occupational Safety and Health (NIOSH), or a combination full-facepiece pressure demand supplied-air respirator with auxiliary self-contained air supply in areas with high CO concentrations, i.e., those with immediately dangerous to life and health atmospheres.
- Use respirators with appropriate canisters, in conjunction with personal CO monitoring, for short periods under certain circumstances where CO levels are not exceedingly high.
- Educate workers about the sources and conditions that may result in CO poisoning as well as the symptoms and control of CO exposure.

Worker Responsibility to Help Prevent Carbon Monoxide Poisoning

- Report any situation to your employer that might cause CO to accumulate.
- Be alert to ventilation problems – especially in enclosed areas where gases of burning fuels may be released.
- Report promptly complaints of dizziness, drowsiness, or nausea.
- Avoid overexertion if you suspect CO poisoning and leave the contaminated area.
- Tell your doctor that you may have been exposed to CO if you get sick.
- Avoid the use of gas-powered engines, such as those in powered washers as well as heaters and forklifts, while working in enclosed spaces.

FINAL WORD

Whether you work in white collar enclosed office setting, an industrial setting, or as a public/private service provider, there is a risk of being exposed to the lethal effects of carbon monoxide.