Carbon Monoxide Meeting Kit

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 workplace.

ORIGINS

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.

HOW DOES CARBON MONOXIDE HARM PEOPLE?

Carbon monoxide is harmful when inhaled 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 blood levels of CO, such as smokers. Also, CO poisoning poses a special risk to fetuses.

REDUCE THE RISK

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 that may be used

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

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

Administrative controls: Changing work practices and work policies, awareness tools,

and training can limit the risk of carbon monoxide poisoning.

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

PROPER MAINTENANCE

Correct installation and maintenance of ventilation equipment can go a long way toward preventing carbon monoxide exposure.

WORKPLACE LOCATIONS WHERE WORKERS EMPLOYEES ENCOUNTER CARBON MONOXIDE INCLUDE:

- A kitchen with a malfunctioning gas oven or range
- Gas-powered water heater in need of servicing
- An underground parking garage
- Air intake located on a loading dock
- Boiler room where ventilation is defective
- A laundry department with gas-fueled appliances that aren’t working properly

OCCUPATIONS AT RISK

Workers may be exposed to harmful levels of CO 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

EMPLOYER’S 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 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.
- 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.
- Promptly Report complaints of dizziness, drowsiness, or nausea.
- If you suspect CO poisoning, avoid overexertion and leave the contaminated area.
- Avoid the use of gas-powered engines, as heaters and forklifts, while working in enclosed spaces.

FINAL WORD

Carbon Monoxide is produced whenever carbon-based fuels such as diesel fuel, gasoline, natural gas, heating oil, wood, or other similar products are burned. The danger not only exists in homes with natural-gas powered furnaces, water heaters or stoves, but also in sheds, garages, barns or shops where work is being performed with internal combustion engines or being heated with fuel-powered heating systems.