



## **MONTHLY SAFETY BRIEF: CARBON MONOXIDE EXPOSURES**

Continuing our journey of specific contaminants to be aware of and understand the basics about, this safety brief is on the deadly gas Carbon Monoxide.

Carbon monoxide is created from the incomplete combustion of organic compounds. It is a poisonous, colorless, odorless, tasteless gas but is often mix with other gases with an odor. The main route of exposure is inhalation, this can be inhaled unknowing when odors of other gases are present. The most common sources of carbon monoxide in the workplace is from vehicles or anything that generates power through the burning of fuel from an internal combustion engine. On our jobsites, we see many different sources of CO including gas powered equipment, furnaces, emergency generators and vehicles.

Good to know and remember the OSHA exposure limits for CO:

- The NIOSH REL is 35 ppm
- The OSHA PEL is 50 ppm
- The OSHA Ceiling Limit is 200 ppm

### **HEALTH EFFECTS**

Carbon monoxide is poisonous when inhaled, disallowing your body to transfer oxygen from blood cells to the lungs. Symptoms include tightness across chest, muscle weakness, dizziness, nausea, fatigue and headache. In high doses a loss of consciousness and death may occur. Recovery is possible but it may cause permanent brain damage.

People who are more susceptible to carbon monoxide poisoning include:

- Young children
- Elders
- People with lung or heart disease
- Smokers
- Pregnant women (risk to fetuses)

### **OCCUPATIONS AT RISK TO CARBON MONOXIDE EXPOSURE**

- Welder
- Firefighter
- Toll both attendant
- Garage Mechanic
- Forklift operator
- Anyone near combustion sources

### **HOW TO REDUCE CO EXPOSURE**

- Be aware of CO exposure symptoms and take prompt action if noted
- Be alert to ventilation problems especially in enclosed spaces
- Avoid using gas powered engines in enclosed spaces
- Use personal carbon monoxide alarms if potential exposure exists
- Test air regularly if carbon monoxide may be present
- Use of NIOSH certified full-faced SCBA in area with high carbon monoxide concentrations (there is no filter/chemical respirator for CO – need supplied air).
- Educate workers about sources, conditions and symptoms of carbon monoxide poisoning



### Carbon Monoxide Quiz

- 1) Which of the following is not a quality of carbon monoxide?
  - a. Odorless and colorless
  - b. Gaseous state
  - c. Absorbed through the skin
  - d. Causes headaches
  
- 2) Which of the following is not typically a person working in an environment susceptible to carbon monoxide poisoning?
  - a. A worker inside a confined space
  - b. A fork lift operator that smokes
  - c. A nurse
  - d. A firefighter
  
- 3) When inhaled carbon monoxide attacks the lungs directly and paralyzes them rendering the person unconscious.  
 True  
 False
  
- 4) Your HEPA filtered half-mask will protect you from CO.  
 True  
 False
  
- 5) Which of the following is not a way of controlling the CO exposure potential:
  - a. Using SCBA that is NOISH approved in high concentration.
  - b. Alerting your manager if you suspect high levels of carbon monoxide.
  - c. Being informed on the sources and conditions where carbon monoxide poisoning could occur.
  - d. If carbon monoxide is suspected wait until the smell becomes too much until you leave the work area.
  - e. Avoid gas powered engines in enclosed areas.

**SCORE: PASS / FAIL**

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Employee Signature

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Supervisor Signature

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Date