

Carbon monoxide gas is colorless, tasteless, odorless and non-irritating. It cannot be detected by any of the senses. Because it is not readily detected, employees can be exposed to very high levels without realizing there is a problem. Here are some statistics.

Annually in the USA

- Tens of thousands of people seek medical attention or lose several days, weeks and months of normal activity from CO exposure
- Over 40,000 emergency department visits for CO poisoning
- More than 450 people die through unintentional CO exposure (CDC)
- As many as 2000 people die intentionally using CO (CDC)

Sources of Carbon Monoxide

- Running a “jumping jack” in a trench
- Saw cutting or pressure washing indoors
- Confined spaces along heavily traveled roads
- Burning wood, paper or plastic products
- Welding when carbon dioxide shielding gas is used
- Propane space heaters
- Forklifts indoors

Precautions to Ensure Air Quality

- Equip compressors with suitable air-purifying filters, water traps, and sorbents
- Monitor activity around work the area which may affect air quality
- Bump test air monitoring equipment and follow manufacturers recommendations
- Look for signs and symptoms in workers. (shortness of breath, nausea, headaches and dizziness)
- If gas fired machinery is used indoors, ensure air quality

At lower levels, people sometimes mistake the symptoms of CO exposure for the flu, or do not associate their severe headache and nausea with carbon monoxide exposure. Carbon monoxide is serious and deserves our attention.

Concentration	Symptoms
35 ppm (0.0035%) 8 hour PEL	Headache and dizziness within, six to eight hours of constant exposure
100 ppm (0.01%)	Slight headache in two to three hours
200 ppm	Slight headache within two to three hours; loss of judgment
400 ppm	Severe headache, fatigue, nausea, dizziness, confusion, can be life-threatening after 3 hours of, exposure
800 ppm (0.08%)	Dizziness, nausea, and convulsions within 45 min; insensible within 2 hours
1,600 ppm (0.16%)	Headache, tachycardia, dizziness, and nausea within 20 min; death in less than 2 hours
6,400 ppm (0.64%)	Headache and dizziness in one to two minutes. Convulsions, respiratory arrest, and death in less than 20 minutes

Questions for Discussion

- Have you ever had an unaccounted headache during the workday?
- Do you know of someone who has had CO poisoning?

Presenter tips

- Pre-read the Toolbox Talk. Your comfort level and confidence will be higher if you know your topic.
- Discuss related tasks, work areas or events that make the Toolbox Talk relevant to your job site.
- Involve the workers by asking questions and input that drives discussion.