7-Minute SAFETY TRAINER

Dangers of Carbon Monoxide

Trainer Outline 3032

Goals: **This safety session should teach employees to:**

- Realize that carbon monoxide (CO) is an especially dangerous poison because it is colorless and odorless.
- Be aware of the many possible causes of carbon monoxide exposure.
- The most common source is incomplete fuel burning–often from a motor vehicle or a furnace–in an airtight building.
- Understand that symptoms may resemble illnesses but, without prompt treatment, they can be fatal.

Applicable Regulations: 29 CFR 1910.1000 (a) Table Z-1 sets permissible exposure limits (PELs).

1. Carbon monoxide is an invisible, odorless poison.

- CO causes health problems by reducing the oxygen-carrying capacity of the blood, and can result in permanent damage or even death.
- The initial symptoms of CO are similar to the flu (but without the fever).
- Early symptoms of exposure include headache, fatigue, nausea, and dizziness as well as rapid breathing or pulse.
- If you have any of these symptoms and feel better when you go outside but the symptoms reappear once you're back inside, you may have CO poisoning.

2. Carbon monoxide is produced by burning organic fuels like gasoline in areas with too little air or oxygen.

- Exhaust from a car, truck, or forklift contains CO–there can be a dangerous buildup around loading docks or in repair areas.
- A few of the many occupations that carry a risk of CO exposure include welders, firefighters, toll booth or tunnel attendants, taxi drivers, and boiler room workers.
- Faulty exhaust systems can release CO into a vehicle and endanger the driver and passengers.
- Heating systems in homes and businesses may also have leaks that can cause a buildup of CO.
- Emergency generators operated during power outages also emit CO, so they should be operated only in well-ventilated areas.

3. Monitor your workplace to control exposure limits.

- Conduct a workplace survey to identify all potential sources of CO exposure.
- OSHA sets the PEL at 50 parts per million (ppm) of air or 55 milligrams per cubic meter of air, averaged over an 8-hour work shift.
- Engineering controls (like installation of a good ventilation system) should be used to reduce CO levels.

- Install CO detectors with an audible alarm in your workplace to monitor the level of carbon monoxide.
- Have a low-level CO monitor at home as well.

4. Establish safety rules to eliminate sources of CO exposure.

- The use of gasoline-powered engines or tools inside buildings or partially enclosed areas should not be allowed.
- Try to substitute gasoline-powered equipment with machines that use electricity, batteries, or compressed air.
- Have heating systems and other fuel-burning appliances checked regularly to make sure they have no leaks.
- Make sure all workers have training about the dangers of CO and possible exposure sources.

5. Emergency response for CO poisoning.

- Anyone exposed should move to fresh air in an open area immediately.
- Call 911 or the local emergency number for medical assistance.
- Each affected person should be monitored.
- Administer 100-percent oxygen using a tight-fitting mask if the victim is breathing.
- Administer cardiopulmonary resuscitation (CPR) if the victim has stopped breathing.
- Anyone attempting a CO rescue should be trained and have a full-facepiece, pressure-demand self-contained breathing apparatus (SCBA).

Discussion Points:

Discuss the use of any gasoline-powered equipment within your facility. Is there adequate ventilation? Are vehicles idling outside close to windows or air-intakes so that CO fumes could enter the building? Is all heating equipment checked regularly for proper operation? Are CO monitors available?

Conclusion:

Carbon monoxide is a silent but deadly killer. Knowing both the potential sources and the early symptoms is necessary to protect yourself. Above all, if you believe there may be a problem, get to fresh air immediately.

Test Your Knowledge:

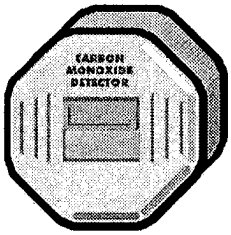
Have your employees take the Dangers of Carbon Monoxide Quiz. By testing their knowledge, you can judge their understanding of how to protect themselves from carbon monoxide and whether they need to review this important topic again soon.

7-Minute SAFETY TRAINER

Dangers of Carbon Monoxide

Handout 3032

WARNING! A SILENT KILLER



Know the dangers:

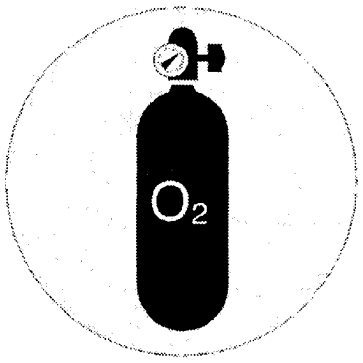
- ✔ Reduces the oxygen-carrying capacity of the blood
- ✔ Gives no warning because it is odorless and colorless
- ✔ Can aggravate anemia and heart and respiratory problems
- ✔ Can be passed to the fetus by a pregnant woman
- ✔ Can cause unconsciousness, permanent damage, or death

Know the symptoms of CO exposure:

- ✔ Headache
- ✔ Fatigue
- ✔ Nausea
- ✔ Dizziness
- ✔ Rapid breathing or pulse

Know the common sources of CO exposure

- ✔ Vehicle exhaust fumes
- ✔ Faulty heating systems
- ✔ Operation of other fuel-burning equipment



Know the proper response:

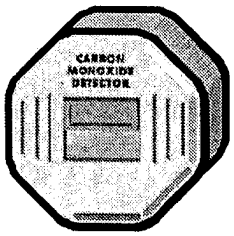
- ✔ Get to fresh air immediately.
- ✔ Call 911 for medical assistance.
- ✔ Administer 100 percent oxygen if the victim is breathing.
- ✔ Administer CPR if the victim has stopped breathing.
- ✔ Attempt a CO rescue only if you are trained and have proper respiratory protection.

Entrenamiento de Seguridad de 7 Minutos

Los Peligros Del Monóxido de Carbono

Hoja 3032

¡ADVERTENCIA! EL ASESINO SILENCIOSO

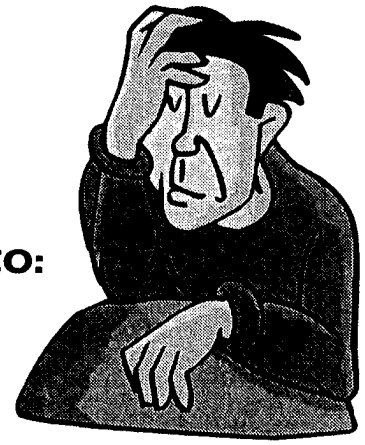


Conozca los peligros:

- ✔ Disminuye la capacidad de transporte de oxígeno de la sangre
- ✔ No da signos de advertencia porque no tiene olor ni color
- ✔ Puede agravar la anemia y los problemas de corazón y pulmones
- ✔ La mujer embarazada puede transmitirlo al feto
- ✔ Puede causar pérdida del conocimiento, lesión permanente o muerte

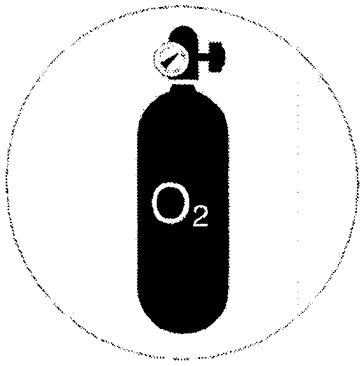
Conozca los síntomas de la exposición al monóxido de carbono (CO):

- ✔ Dolor de cabeza
- ✔ Fatiga
- ✔ Náuseas
- ✔ Mareos
- ✔ Respiración o pulso acelerado



Conozca las causas comunes de la exposición al CO:

- ✔ Escape de los vehículos
- ✔ Sistemas de calefacción defectuosos
- ✔ Operación de otros equipos que queman combustibles



Conozca la respuesta adecuada:

- ✔ Salga inmediatamente a tomar aire fresco
- ✔ Llame al 911 y pida asistencia médica
- ✔ Si la víctima respira, adminístrele oxígeno al 100 por ciento.
- ✔ Si la víctima dejó de respirar, practique reanimación cardiopulmonar (CPR).
- ✔ Rescate a la víctima del CO sólo si usted está entrenado y tiene equipo de protección respiratoria adecuado.

MEETING SIGN-IN SHEET

LOCATION MANAGER:	Meeting Date:
TOPIC OF MEETING:	
SUMMARY OF MEETING:	

Name	Title

Name	Title