

# CARBON MONOXIDE AWARENESS TRAINING

ESAMS COURSE ID 405



## WHAT IS CARBON MONOXIDE

Carbon monoxide (CO) is colorless, odorless, tasteless gas which is highly toxic. CO poisoning occurs when CO builds up in the bloodstream which replaces the oxygen in the red blood cells which can lead to tissue damage and even death. CO is a gas produced by burning gasoline, wood, propane, charcoal or other fuels, typically in cars or trucks, forklifts, small engines, stoves, lanterns, grills, fireplaces, ranges, or furnaces.

## WHAT ARE THE SIGNS OF CO POISONING AND WHO IS AT RISK?

It's important to know the warning signs of CO poisoning; knowing the signs could save a life. Headaches, weakness, nausea or vomiting, dizziness, shortness of breath, confusion, blurred vision, and unconsciousness are all signs of CO poisoning and should be taken seriously as they could easily escalate to a more severe situation to include death. If you see anyone experiencing these signs while working on or in the area where CO hazards are present, remove yourself and others from the area while warning others. In the event you find someone unconscious, call 911 or 760-725-3333. On average, CO poisoning is the cause of approximately 430 deaths per year.

CO poisoning also poses reproductive risks as well. While there is limited evidence that CO may damage the male reproductive system, it has been found to be pose a special risk to fetuses. This is thought to be from the large amount of CO in the mother's blood which causes the fetus to receive less oxygen.

## CARBON MONOXIDE AND FORKLIFTS

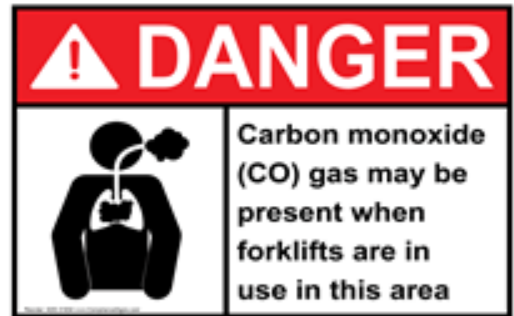
Forklifts, both gasoline and propane powered, produce CO. The amount depends on how well the forklift have been tuned, but should be 1% or less where exhausted.

Operating internal combustion forklifts indoors is a hazard. Opening doors and windows or operating fans does NOT guarantee safety. CO poisoning can occur when forklifts are used in cold rooms, controlled atmosphere rooms, truck trailers or shipping containers, or in warehouses or other enclosed areas that do not have enough fresh air ventilation. If forklifts are used indoors, they should be tuned up regularly and tested for CO emissions periodically.

# CARBON MONOXIDE AWARENESS TRAINING

## PREVENTION METHODS

It is the organization's responsibility to prevent hazards and minimize hazards wherever possible. The following are a few methods that can be implemented in an effort to reduce the risk of CO poisoning. Minimize usage of forklifts indoors whenever possible. Implement forced air ventilation to reduce exposure risk when fresh air ventilation is not adequate. Post cautionary signage in all indoor areas where forklifts are used to alert those operating equipment as well as bystanders of hazardous area.



## DEATH OF A FORKLIFT OPERATOR

An employee was working on a gas powered forklift at a warehouse in what was considered a confined space (shipment trailer). The trailer had no external ventilation, however the fans were recirculating the air inside the warehouse. When the employee's supervisor came to check his progress, he found the employee dead. The forklift had been expelling a large amount of CO and it was argued that this was due to poor maintenance and replacement of old components. Toxicology testing was done on the employee and the CO level in his system was 60%. Symptoms will begin being displayed usually between 10-30% and death is possible at 50%. **It is vital that employees operating or working around forklift operations are aware of the signs of CO poisoning.**

## KNOWLEDGE CHECK

1. Can CO be detected with a person's senses?
2. Is CO generated by the equipment used in your organization?
3. How would someone know if they are being exposed to CO?
4. Does opening windows and doors prevent exposure and guarantee safety?

Answers: 1. No; 2. Yes; 3. The body starts displaying symptoms; 4. No