

# Carbon Monoxide *Safety*

Hundreds of people die accidentally each year from CO poisoning caused by malfunctioning or improperly used fuel-burning appliances (EPA data). According to the *Journal of the American Medical Association (JAMA)*, CO is the number one cause of poisoning deaths in the U.S.

Carbon monoxide gas is produced whenever any fuel, such as gas, oil, kerosene, wood or charcoal is burned.

## Symptoms of Carbon Monoxide (CO) Poisoning

CO enters the lungs and blood where it competes with oxygen normally carried by red blood cells. CO attaches to the cells 200 times easier than oxygen. Without oxygen, cells begin to die.

Exposure to carbon monoxide can produce flu-like symptoms such as:

- Headache
- Nausea
- Dizziness
- Confusion
- Fainting

At higher levels, CO exposure can cause:

- Unconsciousness
- Death

## What to Do If You Suspect CO Exposure

- Get out of the house or car and get fresh air.
- Call the fire department from a neighbor's house.
- If you have symptoms, seek medical help immediately.

### Carbon Monoxide is:

- *Poisonous*
- *Odorless*
- *Colorless*
- *Tasteless*

## Protect Your Family

- Install carbon monoxide alarms on every level of your home, except unfinished basements or attics.
- Since 2006, state law has required carbon monoxide alarms in most homes.
- Locate CO alarms near bedrooms so family members will awaken at night.
- Alarms should be kept away from open windows or doors, excessively hot, cold or damp areas and "dead-air spaces" such as corners of rooms and peaks of ceilings.
- Do not place a CO alarm in a garage, furnace room, near the stove or fireplace.
- Change the batteries according to directions.
- Change the back-up batteries after a prolonged power outage.
- Know the difference between the alarm signal and the low battery alert.

(over) →



**FireFactors**

Office of the State Fire Marshal • [www.mass.gov/dfs](http://www.mass.gov/dfs) • (978) 567-3300

## What Kind of CO Alarms to Purchase

- Make sure that any alarm you purchase is approved and certified by a nationally recognized testing agency, such as Underwriters Laboratory (UL).
- Several types of alarms are allowed in Massachusetts:
  - Battery powered with battery monitoring (a low battery signal);
  - Plug-in (AC powered) units with battery backup;
  - Hard-wired with battery backup (usually involves hiring an electrician);
  - Combination smoke detectors and CO alarms that have a signal as well as a voice alert;
  - Low-voltage with secondary power
- Follow installation instructions carefully.

## Appliances and CO Safety

If appliances that burn fuel are properly maintained and used, the amount of CO produced is usually not hazardous. Read and follow the manufacturer's instructions that come with fuel-burning devices.

However, if appliances are not working properly or are used incorrectly, dangerous levels of CO can result.

- Have a qualified service technician inspect your appliances yearly, before the heating season.
- Check vent pipes, flues and chimneys for leaks or blockages.
- Un-vented kerosene heaters are illegal in MA.
- Never use a charcoal grill indoors!
- Do not use a gas oven to heat your home.
- Don't leave a vehicle running inside a garage, even if the door is open. Fumes will build up quickly inside the home.
- Snow can block car tailpipes outdoors.
- Never use gasoline-powered engines (generators, chain saws, blowers, weed trimmers, mowers or snow blowers) indoors or near doors or windows.

## Replace Aging CO Alarms

- Replace aging CO alarms every 5 -7 years according to directions.
- Newer model CO alarms have a 10-year sealed lithium battery that does not need changing. At 10 years, the entire device is replaced.

### Sources of CO:

- *Furnaces and water heaters*
- *Chimneys and woodstoves*
- *Gas and oil fueled space heaters*
- *Blocked furnace and dryer vents*
- *Car tailpipes blocked by snow*
- *Generators*
- *Running vehicles*
- *Barbeque grills and camping stoves*
- *Gas ovens used for heat*
- *Gas tools such as snow removal and yard equipment*