

CARBON MONOXIDE

Carson-Dunlop Technical Reports

WHAT IS CARBON MONOXIDE?

CO is a colourless, odorless, tasteless gas. It is a by-product of incomplete combustion (unburned fuel such as gas, oil, wood, etc.) Low concentrations of CO can go undetected and can contribute to ongoing, unidentified illnesses. At high concentrations, it can be deadly.

WHY IS IT DANGEROUS?

If there is CO in the air you breath, it will enter your blood system the same way oxygen does, through your lungs. The CO displaces the oxygen in your blood, depriving your body of oxygen. When the CO displaces enough oxygen, you suffocate.

WHAT ARE THE SYMPTOMS?

- Symptoms of CO poisoning are very similar to the flu.
- Illness in your pets just preceding illness in a family member may suggest CO poisoning.

Continued exposure or high concentrations

- Confusion
- Cardiac problems
- Brain damage
- Death
- Severe headaches
- Breathing difficulties
- Dizziness

Long term exposure to low concentrations

- Slight headaches
- Fatigue
- Shortness of breath with only moderate exertion
- Nausea
- Dizziness and confusion

WHO IS AT GREATER RISK?

- Senior citizens
- People with respiratory or coronary problems
- Pregnant women
- Unborn babies
- Infants
- Young children

Note: Vulnerable people who are exposed even to low levels of CO for long time periods may have similar health affects as those exposed to high concentrations of CO.

WHAT ARE THE MOST COMMON SOURCES OF CARBON MONOXIDE?

1. Automobile exhaust in attached garages

This is responsible for 60% of all CO alarms. People who warm their cars up in the garage are trapping CO inside the garage. The CO can find its way into the home.

2. Gas cooking appliances

Reported to account for 20% of CO alarms. May be a result of a misused, poorly maintained, poorly installed, or unvented cooking appliance.

3.1 Poor draft/venting for fuel burning appliances –

This is one of the most common and serious causes for CO build up and has been reported to account for up to 19% of CO alarms. The products of combustion are not being safely expelled to the exterior. This could be due to venting problems, such as blocked chimney flues or inadequate venting for appliances or fireplaces. Other problems include poor installation and negative air pressure in the house, causing backdrafting, often due to exhaust fans.

3.2 Poor combustion at furnace or water heater

Inadequate combustion air to the furnace can result in incomplete combustion. If the furnace has a cracked heat exchanger, it is possible to get CO into the circulating air. It is also imperative that we do not deprive our heating equipment and fuel burning appliances of air; especially in air-tight homes where running exhaust fans can result in a shortage of combustion air. Combustion air is essential for safe operation of furnaces, water heaters, and other fuel burning equipment.

3.3 Leakage

A leak in a chimney or flue pipe.

3.4 Ventilation

Barbecues or other gas equipment operating in a attached garage, basement, or enclosed area.

HOW CAN I GUARD AGAINST CARBON MONOXIDE POISONING?

The first line of defense is to have your home heating systems, fuel burning appliances, flues and chimneys checked and/or cleaned annually by a qualified specialist.

Inspection checklist:

- Blocked openings to flues and chimneys
- Cracked, rusted, or disconnected flue pipes
- Dirty filters
- Rusted or cracked heat exchangers
- Soot or creosote build-up inside fireplaces and chimney flues
- Exhaust or gas odours.
- Attached garages require gas proofing and automatic closers for doors into the
- Adequate combustion air
- Adequate venting on indoor combustion appliances (i.e. gas stoves)

The second line of defense is a CO detector.

CO DETECTORS

These are designed to warn homeowners when CO reaches dangerous levels within the home

How do they work?

- CO detectors sample the air at specific time intervals
- A microchip inside the detector stores the reading and keeps track of the level of CO that the detector is exposed to over time