



# **RISK RESILIENT**

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Carbon Monoxide  
in the Workplace

## **Known as the “silent killer,” carbon monoxide (CO) is a colourless, odourless, tasteless and toxic gas. That’s what makes it so dangerous.**

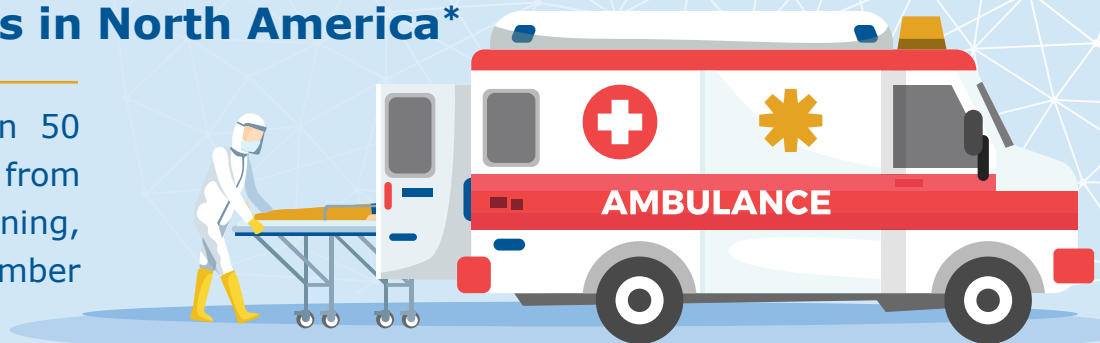
A common hazard in homes and workplaces, carbon monoxide is formed by the incomplete combustion of natural gas and any other material containing carbon, such as gasoline, kerosene, oil, propane, coal, or wood. Cigarette smoke and motor vehicle exhaust are also sources of CO.<sup>3</sup>

Carbon monoxide enters the body’s bloodstream through the lungs and blocks the body’s ability to absorb oxygen. At low levels, CO poisoning can cause fatigue, headache, nausea, shortness of breath, and muscle weakness. At increased levels, or exposure to low levels over time, people can experience dizziness, chest pain, poor vision and difficulty thinking. Higher concentrations may cause unconsciousness, coma, or death.<sup>4</sup>

For employers and employees alike, it’s vital to understand how they can be exposed to this dangerous gas at work and take steps to prevent CO poisoning. Everyone has a role to play to ensure this silent killer isn’t lurking in the air they breathe at work.

## **Every year, carbon monoxide poisoning is responsible for hundreds of deaths and thousands of hospital visits in North America\***

In Canada, more than 50 people die every year from carbon monoxide poisoning, while U.S. fatalities number at least 430.<sup>1,2</sup>



\*According to the Canadian Centre for Occupational Health and Safety.

## **Know the Risks**

The most common sources of carbon monoxide in the workplace are internal combustion engines that power various tools, equipment and vehicles. Workplace settings at greater risk of CO exposure include mechanical shop floors, boiler rooms, warehouses, petroleum refineries, blast furnaces, steel production, pulp and paper production, and coke ovens. Agricultural operations are also at risk, as workers can be exposed to CO while using motorized equipment such as gasoline pressure washers inside barns.<sup>5</sup>

Other higher-risk occupations include: welder, garage mechanic, forklift operator, customs inspectors, and diesel engine operator.<sup>6</sup>

In any workplace, the risk of poisoning is especially high when equipment is used in an enclosed place and ventilation is poor. Even if a workplace doesn't operate machinery or motor vehicles with internal combustion engines, a small leak from a furnace or gas-powered water heater could be a prospective source of carbon monoxide leaking into the work environment.<sup>7</sup>

While CO poisoning is a year-round risk, it tends to increase during colder winter months, when windows and doors are closed, temporary heaters are used more frequently, and tarps are installed to retain heat. Changes like these increase the risk of exposure to CO in the workplace when fuel-powered equipment is being used.<sup>8</sup>

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## Be Prepared

Carbon monoxide poisoning is entirely preventable. Employers must put safety practices in place and educate workers on the dangers of CO poisoning and how to protect themselves. As part of a comprehensive safety plan, the following recommendations from the Canadian Centre for Occupational Health will help prevent the serious consequences of CO poisoning.<sup>9</sup>

- 1 Maintain water heaters, space heaters, cooking ranges, and other potential carbon monoxide-producing equipment in good working order.
- 2 As an alternative to gasoline-powered equipment, use equipment powered by electricity, batteries, or compressed air.
- 3 Use personal CO monitors and/or area carbon monoxide detectors that are reliable and set to alarm well below the exposure limit. Area alarms should give both visual and audible warnings immediately. When buying CO detectors, it's important to look for products that are certified for use in Canada. The certification marks must be to Canadian standards.<sup>10</sup>
- 4 Don't allow the use of gasoline-powered engines or tools, such as power washers, heaters, and forklifts, in poorly ventilated areas.



- 5 Test air quality regularly and prior to entry in areas where carbon monoxide may be present, including confined spaces.
- 6 Ensure employees wear appropriate and approved respirators in areas with high carbon monoxide concentrations.
- 7 Educate workers who may be exposed to carbon monoxide. They must know the sources and symptoms, how to protect themselves, how to recognize symptoms in co-workers, and how to respond in case of an emergency.

Employees can also do their part to help prevent CO poisoning in the workplace. They should be alert to ventilation problems, especially in enclosed areas where gases of burning fuels may be released.

Employees should report any potential CO hazards to their employer, and report complaints of headache, dizziness, drowsiness, or nausea if they suspect carbon monoxide poisoning. They should also leave the contaminated area immediately. If an employee gets sick, they should tell their doctor about possible exposure to carbon monoxide at work.

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