

Risks and Safety Hazards of Carbon Monoxide

What is Carbon Monoxide?

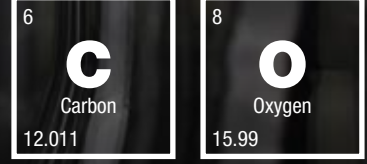
Chemical Compound: CO

CAS Number: 630-08-0

Carbon Monoxide is an odourless, tasteless, poisonous gas, CO, that results from the incomplete combustion of carbon. Inhalation causes central nervous system damage and asphyxiation.

Other names: Carbonous oxide, Carbon(II) oxide, Carbonyl, Flue gas, Monoxide

Chemical Forms



Chemical Properties

Molecular weight:	28.01 g/mol
Boiling point:	-191 °C
Melting point:	-205 °C
Vapour pressure	>35.5 bar
Relative density, gas (air=1)	0.97
Solubility in water (20°C)	2.3 ml/100ml
Gas Colour	colourless

Safety Hazards of Carbon Monoxide



Carbon Monoxide is generated through combustion in nature, huge quantities are generated during volcanic eruptions and forest fires. In industry, carbon monoxide is used in a multitude of applications including metal fabrication, chemical manufacture, metal ore reduction, pharma & biotech, and electronics.



Carbon Monoxide is classified as an extremely flammable, toxic gas.
H220: Extremely flammable gas [Danger Flammable gases]
H331: Toxic if inhaled [Danger Acute toxicity, inhalation]
H360D: May damage the unborn child [Danger Reproductive toxicity]
H372: Causes damage to organs through prolonged or repeated exposure [Danger Specific target organ toxicity, repeated exposure]



Risk of exposure can occur through:

- Accidental Release
- Leak
- Transportation



Carbon Monoxide can be measured using a gas detector fitted with *electrochemical sensors* or by using indicator stain tubes.

Health Risk: Carbon Monoxide Exposure Effects



EYES

- Burns
- Irritation
- Permanent damage



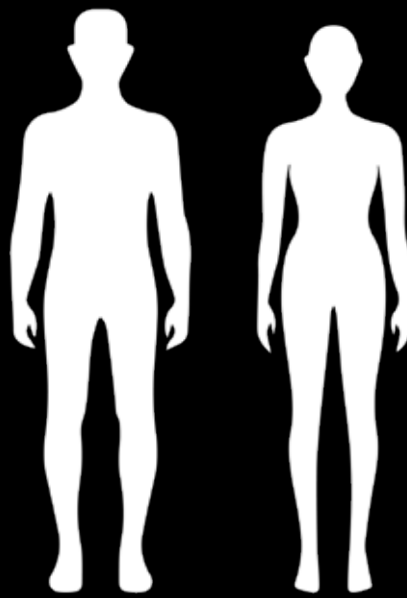
STOMACH

- Nausea



CARDIAC

- Angina



HEAD

- Hallucinations
- Dizziness
- Drowsiness



RESPIRATORY SYSTEM

- Increased respiration
- Burning



CIRCULATORY SYSTEM

- Cyanosis

Working Exposure Limits of Carbon Monoxide

The eight-hour Time-Weighted Average (TWA) recommendations of Safe Work Australia:

TWA concentration can result in irritation to workers.

35ppm

Occupational Exposure Standards

	Excursion Limit
8 hr TWA	35 ppm
15 min STEL	200 ppm
NIOSH IDLH	1200 ppm