

Carbon oxides

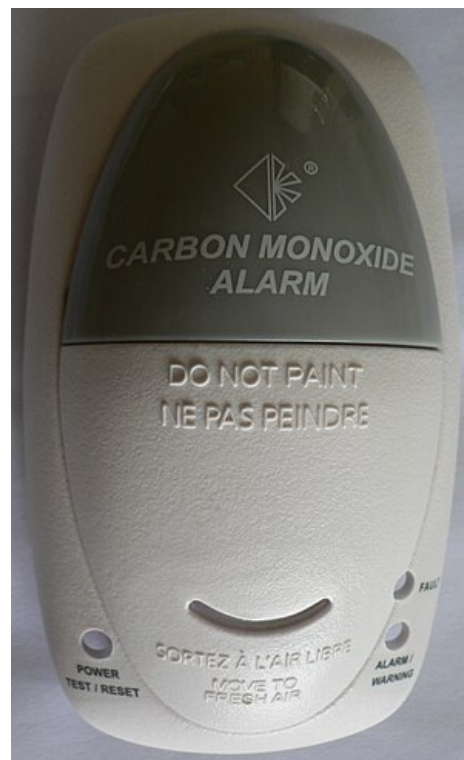
When burning, a large amount of carbon monoxide (CO) and carbon dioxide (CO₂) is produced. The concentration of CO₂ increases if more people are present, there is smoking, or if there is another source of combustion emissions (stove) in the room.

Carbon Monoxide

Carbon monoxide is a colorless, odorless gas produced by incomplete combustion. It has a high affinity for hemoglobin, CO poisoning (> 10% carboxyhemoglobin) has a number of degrees and the consequences depend on the duration of exposure and the concentration. If a person survives severe poisoning, which is usually associated with prolonged unconsciousness, the CNS and cardiovascular system are often affected. CO poisoning is easily demonstrated by determining the concentration of COHb in the blood. Symptomatology may be less in smokers whose blood COHb concentration is between 5-10%. Even a COHb concentration of 2.5% can worsen the condition of people with angina pectoris. The binding of CO to the blood dye is reversible, and in case of poisoning it is recommended to take the affected person to fresh air, or application of oxygen therapy. The affinity of CO for Hb is about 210× higher than that of O₂. According to some authors, chronic exposure to CO accelerates the development of atherosclerosis^[1], but this effect of CO has not been clearly demonstrated^[2].

Measurement of the concentration of carbon oxides

- '*CO concentration measurement* is carried out with detection tubes that change color according to gas concentration, passive dosimeters working on the principle of color reaction (they are suitable for qualitative evaluation), and electrochemical analyzers.
- **Measurement of CO concentration₂** is carried out by continuous spectrophotometric determination in the infrared region of the spectrum.



CO detector

Links

Related Articles

- Carbaminohemoglobin
- Carbonylhemoglobin
- Hypocapnia | Hypercapnia
- Carbon monoxide poisoning

References

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2. SMITH, C J – STEICHEN, T J. The atherogenic potential of carbon monoxide. *Atherosclerosis* [online]. 1993, vol. 99, no. 2, p. 137-49, Available from <<https://www.ncbi.nlm.nih.gov/pubmed/8503943>>. ISSN 0021-9150.

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