

TALKING Gas

Methane

Methane (CH₄) is a one-carbon compound and the simplest hydrocarbon, comprising one carbon atom and four hydrogen atoms. It was formally identified in 1776 by Italian physicist Alessandro Volta, although not given the name Methane until 1866.

Methane is relatively abundant in nature and has been detected on all planets in the solar system. Most of Earth's natural Methane is under the sea or land: atmospheric Methane is considered a greenhouse gas because it absorbs heat efficiently.

Methane is colourless, odourless and non-toxic, but dangerous because it is also flammable (and sometimes explosive), and asphyxiant when it displaces enough oxygen.

What are the applications of Methane?

Methane is widely used as a domestic and workplace fuel – it is a major constituent of natural gas – and has many industrial applications. For example, Methane is a chemical feedstock to produce methanol, chloroform and carbon tetrachloride.

It is a source of hydrogen for the manufacture of explosives and fertilisers, and incomplete combustion gives carbon black, which is used to reinforce car tyres.

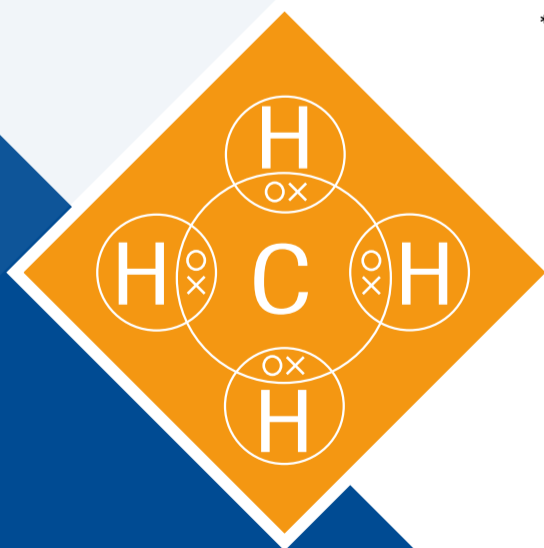
What are the dangers of Methane?

The dangers of Methane in the workplace are primarily fire and/or explosion, and asphyxiation. Methane is highly flammable and can form explosive mixtures with air at concentrations between 4.4% (lower explosive limit) and 17% (upper explosive limit)*.

Methane is asphyxiant because at high concentrations it reduces the availability of atmospheric oxygen and induces hypoxia (lack of oxygen in the body), which may begin with confusion or breathlessness and progress to suffocation and death.

Liquefied Methane that is released under pressure may cause frostbite.

*Reference standard IEC60079-20-1:2010



Talk to Crowcon

Discover the right Methane monitoring detector for you at: crowcon.com/talking-gas

Contact Crowcon directly at: hello@crowcon.com

Hydrogen

N₂

Carbon Dioxide

Cl₂
Chlorine

Nitrogen Dioxide

CH₄
Methane

H₂S
Hydrogen Sulfide

Carbon monoxide

O₃
Ozone

What should you do if you are exposed to Methane?

If you suspect hypoxia, move the victim to fresh air and call for trained personnel immediately. Ensure your own safety (e.g. wear appropriate PPE) before attempting rescue.

How do you detect, measure and report on Methane?

When monitoring Methane, the main objectives are:

- ◆ To detect high or rising levels of Methane before they cause harm, and
- ◆ To detect Methane leaks fires or explosions that have already occurred (for example, in pipes, sealed or hard-to-reach spaces).

The development of infrared absorption spectroscopy for gas detection has made the remote detection of Methane, including aerial detection, both possible and accurate.

Remote detection – from distances up to 500 metres – can now be used to monitor and check for Methane leaks.

Crowcon has a range of products that can detect Methane, comprising pellistor, infra-red and laser technology options:



Fixed point detectors

The Xgard types 3, 4 and 5 as well as our Xgard IP, Xgard IQ and Xgard Bright all offer methane detection capabilities.



Remote leak detection

The LaserMethane mini (LMm) is an innovative long-range portable detector which allows methane gas to be detected at distances of up to 100m.



Portable detectors

All of Crowcon's portable detectors, other than the Clip, can be used to detect Methane.

CROWCON
Detecting Gas Saving Lives