Chlorine - Chlorine dioxide

Where are they found?

Chlorine (Cl_2) is a greenish-yellow gas with a strong, irritating odour. It is highly reactive and classified as a toxic gas. Cl_2 is not flammable, but it is an oxidising agent, meaning it can intensify fires when in contact with combustible materials.

Chlorine dioxide (ClO_2) is a reddish-yellow gas with a pungent chlorine-like odour. It is a strong oxidising agent. Though effective in microbial control, it is also a toxic air pollutant and regulated due to its potential health and environmental impacts.

Neither Cl_2 nor ClO_2 are naturally present, but they are widely present in industrial processes. Their presence in the environment is mainly due to human activity, in paper and textile industry, waste water treatment plants (WWTP) and in chemical manufacturing.

Why measure them?

Both Cl_2 and ClO_2 are highly toxic and pose serious health and environmental hazards.

Their Inhalation can cause severe irritation of the respiratory tract, coughing, and pulmonary edema, while contact with the skin or eyes leads to painful burns and tissue damage. Chronic exposure may result in long-term respiratory conditions.

Environmentally, they are extremely harmful to aquatic organisms.

Cl_2 - ClO_2 cartridge

The Cl_2 - ClO_2 cartridge has a built-in electrochemical sensor capable of measuring both Cl_2 and ClO_2 pollutants, from low concentrations (ppb level) to high concentrations. The cartridge is calibrated against Cl_2, while the response to ClO_2 is higher than 70%.

This dual cartridge is an excellent option for measuring chlorine compounds when co-existing in the same applications (WWTP, disinfection applications, etc.), offering high stability, fast response and recovery, and robustness to environmental performance, being an excellent cartridge for industrial monitoring.

Type	Electrochemical
Unit of measurement	mg/m³, ppm
Measurement range (1)	0 - 20 ppm
Resolution (2)	0.01 ppm
Operating temp. range (3)	-20 to 50ºC
Operating RH range (4)	0 to 99 %RH
Recommended RH range (5)	15 to 90 %RH

Operating life (6)	> 24 months
Guarantee range (7)	250 ppm
Limit of Detection (LOD) (8)	0.01 ppm
Repeatability (9)	-
Response time (10)	< 60 sec
Typical accuracy (12)	± 0.03 ppm
Typical Intra-model variability (14)	< 0.01 ppm

* See notes on page 32