



# CHLORINE GAS DETECTION SYSTEMS

## WHERE MIGHT HAZARDOUS LEVELS OF CHLORINE OCCUR?

- Swimming pools
- Bleach manufacturing plants
- Plastics manufacturing plants
- Pulp and paper industry
- Food production and handling plants
- Pharmaceutical manufacturing plants

- Chlorine storage & equipment rooms
- Water add sewage treatment plants
- Community water supplies
- Metal production plants
- Chlorine manufacturing plant

## WHAT CHLORINE GAS DETECTORS ARE AVAILABLE FROM CETCI?

Product	Part Code	Sensor Type	Sensor Range	Default Factory Alarm Setpoints
cGas Detector Digital Transmitter <small>Digital, LCD display, 4-wire, 24V, optional relay and RH &amp; Temp</small>	CGAS-D-CL2	Electrochemical	0 - 5 ppm	Low: 0.5 ppm Mid: 0.7 ppm High: 1.0 ppm
LPT Low Power Transmitter <small>Analog, LED indicator, no alarm, no relay, 2, 3 or 4-wire, 24V</small>	LPT-CL2			
LPT-A Analog Transmitter <small>Analog, LCD display, alarm, relay, 3 or 4-wire, 24V</small>	LPT-A-CL2			
LPT-M Modbus® Transmitter <small>Digital, LCD display, alarm, relay, 4-wire, 24V</small>	LPT-M-CL2			
LPT-B BACnet® Transmitter <small>Digital, LCD display, alarm, relay, 4-wire, 24V</small>	LPT-B-CL2			

For a complete Chlorine Gas Detection System, add a QCC Quad Channel Controller with a top strobe, manual shutoff switch and a QCC-RDM remote display.

## WHERE SHOULD THE GAS DETECTOR BE LOCATED?

The chlorine gas detector should be located near the cylinders being used and any other potential source of a chlorine leak. It should be mounted near the floor, but not be near ventilation inlets/outlets or in the path of rapidly moving air. It should also not be placed in dead air spots where there is little or no air movement. The best location for the gas detector is where it will detect the gas the quickest if there is a leak.

## AT WHAT HEIGHT SHOULD THE GAS DETECTOR BE MOUNTED?

Chlorine is much heavier than air and it stays close to the ground, spreading rapidly and settling in low-lying areas. Therefore the gas detector/sensor should be mounted approximately 15 cm / 6 in from the floor. The goal is to be alerted of a chlorine leak as soon as possible so safety measures can be taken to stop and repair it and keep people safe.



## **HOW MANY GAS DETECTORS ARE REQUIRED?**

CETCI's chlorine gas detectors have a sensor range of approximately 279 m<sup>2</sup> / 3000 ft<sup>2</sup>. The number of gas detectors will depend on the size of the storage room and the location of the chlorine cylinders and equipment inside the room. Our knowledgeable Sales Managers can help you determine what is suitable for your application.

## **WHAT IS A BUMP TEST AND WHY SHOULD THEY BE DONE?**

A bump test is a brief exposure of the sensor to gas. A bump test verifies if the sensor is responding and the alarm is functioning.

## **HOW OFTEN SHOULD A CHLORINE GAS DETECTOR BE BUMP TESTED?**

At a minimum, the chlorine gas detector should be bump tested once a month as part of the monthly maintenance plan for the device. There is no limit on the number of bump tests; they may be done more often depending on application and the comfortability/confidence level one has in the device and how it responds. If a bump test fails, a full calibration should be done. Bump test dates and results should be written down in a log book.

## **WHAT IS CALIBRATION AND WHY SHOULD IT BE DONE?**

Calibration is the exposing of the sensor to a certified concentration of gas for a particular length of time. Calibration verifies that the gas detector is providing an accurate reading.

## **HOW OFTEN SHOULD A CHLORINE GAS DETECTOR BE CALIBRATED?**

At a minimum, the gas detector should be calibrated every 6 month. More frequent calibrations may be required depending on application, regulatory laws, sensor response and exposure levels to the gas. If a bump test fails, a full calibration should be done. Calibration dates and results should be written down in a log book.

## **WHAT IS THE LIFESPAN OF A CHLORINE SENSOR?**

The lifespan of an electrochemical chlorine sensor is around 3 years (application dependent).

## **ADDITIONAL INFORMATION ABOUT CHLORINE SENSORS**

Chlorine is a sticky gas, meaning it adheres to surfaces like calibration tubing. Use a Teflon lined tube no longer than 1 m / 3 ft during calibration so the gas doesn't saturate and adhere to the tubing, weakening the concentration of gas that reaches the sensor.

A CETCI chlorine gas detector will never have a splash guard installed on it. The splash guard would interfere with the sensor being able to accurately read the gas levels.

Chlorine reacts with water or moisture in the air to form highly corrosive hydrochloric and hypochlorous acids. Precautions should be taken to keep the chlorine gas and chlorine equipment as dry possible.

When calibrating a chlorine sensor, it is best to use a chlorine gas generator (such as the GENie-EC) instead of a cylinder of chlorine. Our tests have shown chlorine cylinder gas to be unstable and it is difficult to get an accurate reading from that source. The quality of the chlorine gas is much higher from a generator, making calibration easier and accurate.

## **MORE INFORMATION ABOUT CHLORINE SAFETY STANDARDS AND REGULATIONS**

Check your local/provincial/state's:

- Safety Standards Act for gas safety regulations
- WorkSafe regulations

Canadian Standards Association (CSA Group) <https://www.csagroup.org/>

Canadian Center for Occupational Health and Safety (CCOHS) <https://www.ccohs.ca/>

American Society of Heating Refrigeration and Air Conditioning (ASHRAE®) <https://www.ashrae.org/>

Occupational Safety and Health Administration (OSHA) <https://www.osha.gov/>

The Chlorine Institute <https://www.chlorineinstitute.org/>