

# GASTEC Instructions for No.23L Chlorine Dioxide Low Range Detector Tube

## FOR SAFE OPERATION :

Read this manual and the instruction manual of your Gastec Gas Sampling Pump carefully.

### ⚠ WARNING:

1. Use only Gastec detector tubes in a Gastec Pump.
2. Do not interchange or use non-Gastec parts or components in Gastec's detector tube and pump system.
3. The use of non-Gastec parts or components in Gastec's detector tube and pump system or use of a non-Gastec detector tube with a Gastec pump or use of a Gastec detector tube with a non-Gastec pump may result in property damage, serious bodily injury, and death; voids all warranties; and voids all performance and data accuracy guaranties.

### ⚠ CAUTION : If not observed, injuries to the operator or damage to the product may result.

1. When breaking the tube ends, keep away from eyes.
2. Do not touch the broken glass tubes, pieces and reagent with bare hand(s).
3. The sampling time represents the time necessary to draw the air sample through the tube. The tube must be positioned in the desired sampling area for the entire sampling time or until the flow finish indicator indicates the end of the sample.

### △ NOTES : For maintaining performance and reliability of the test result

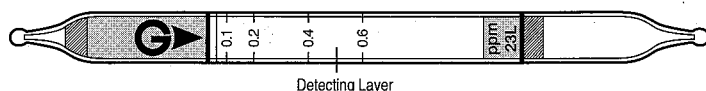
1. Use Gastec Gas Sampling Pump together with Gastec Detector Tubes only for the purposes specified in the instruction manual of the detector tube.
2. Use this tube within the temperature range of 0 - 40°C (32 - 104°F).
3. Use this tube within the relative humidity range of 0 - 90%.
4. This tube may be interfered by the coexisting gases. Please refer to the "INTERFERENCES".
5. Shelf life and storage conditions of the tube are marked on the label of the box of tube.

## APPLICATION OF THE TUBE :

Use of this tube for the detection of Chlorine dioxide in air or the industrial areas and environmental atmospheric condition.

## SPECIFICATION :

(As a result of Gastec's commitment to continued improvement, specifications are subject to change without notice.)



Measuring Range	0.025 - 0.05 ppm	0.05 - 0.6 ppm	0.6 - 1.2 ppm
Number of Pump Strokes	2	1	1/2
Correction Factor	1/2	1	2
Sampling Time	2 minutes per pump stroke		1 minute
Detecting Limit	0.005 ppm (n=2)		
Color Change	White → Pale Green		
Reaction Principle	Chlorine dioxide oxidizes the indicator to produce pale green discoloration.		

**Coefficient of Variation 10% (for 0.05 to 0.2 ppm), 5% (for 0.2 to 0.6 ppm)**

\*\* Shelf Life : Please refer to the Validity Date printed on the box of tube.

\*\* Store the tubes in the refrigerator to keep at 10 °C (50 °F) or below.

## CORRECTION FOR TEMPERATURE, HUMIDITY AND PRESSURE :

**Temperature :** Temperature correction is not required.

**Humidity :** Humidity correction is not required.

**Pressure :** To correct for pressure, multiply the tube reading by  

$$\frac{\text{Tube Reading (ppm)} \times 1013 \text{ (hPa)}}{\text{Atmospheric Pressure (hPa)}}$$

## MEASUREMENT PROCEDURE :

1. For leak checking of the pump insert a fresh sealed detector tube into pump. Follow instructions provided with the pump operating manual.
2. Break tips off a fresh detector tube in the tube tip breaker of the pump.
3. Insert the tube into the pump inlet with arrow (G) on the tube pointing toward pump.
4. Make certain pump handle is all the way in. Align guide marks on pump body and handle.
5. Pull the handle all the way out until it locks on 1 pump stroke (100ml). Wait 2 minutes and confirm the completion of the sampling.
6. For lower than 0.05 ppm measurement, repeat the above sampling procedure one more time until the stain attains to the first calibration mark. For higher than 0.6 ppm measurement, prepare fresh tube, then pull 1/2 pump stroke.
7. Read concentration at the interface of the stained-to-unstained reagent.
8. If atmospheric correction is needed, refer to the "Corrections for Pressure".

## INTERFERENCES :

Substance	Concentration	Interference	Change color by itself
Ammonia		No effect	No discoloration
Carbon monoxide, Carbon dioxide		No effect	No discoloration
Hydrogen chloride		No effect	No discoloration
Sulfur dioxide		No effect	No discoloration
Nitrogen dioxide		Plus error	Produce pale green
Chlorine		Plus error	Produce pale green
Bromine, Iodine		Plus error	Produce pale green
Hydrogen sulfide		No effect	No discoloration
Organic vapors		No effect	No discoloration

## DANGEROUS AND HAZARDOUS PROPERTIES :

Threshold Limit Value-Time Weighted Average by ACGIH (2002) : 0.1 ppm

Threshold Limit Value-Short Term Exposure Limit by ACGIH (2002) : 0.3 ppm

## DISPOSAL INSTRUCTION :

Reagent of the tube does not use toxic substances. On disposing the tube regardless of whether used or unused, follow the rules and regulations of the local government.

## WARRANTY :

If you have any questions regarding gas detection and quality of the tube, please feel free to contact your Gastec representatives.

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