

# GASTEC Instructions for No.138L Methylene Chloride 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 to the test results.

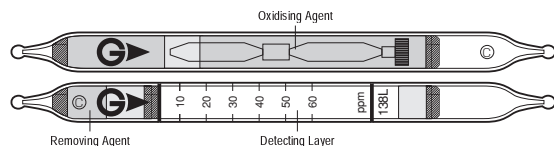
1. Use Gastec Gas Sampling Pump together with Gastec Detector Tubes only for the purposes specified in the instruction manual of the detector tube.
2. Use this tube under the temperature range of 0 - 40°C (32 - 104°F).
3. Use this tube under the relative humidity range of 0 - 90%.
4. This tube may be interfered with by the coexisting gases. Please refer to the "INTERFERENCES".
5. Shelf life and storage condition of the tube is marked on the label of the box of tube.
6. If the tubes are exposed under the sunlight for 1 hour or longer, the reagent of the tube will be deteriorated to turn to white and cannot use the tube for measurement of the gas.
7. If this tube is used under sunlight, the reagent of the tube will be deteriorated to turn pale yellow and cannot obtain precise reading. Use this tube in the shade.

## APPLICATION OF THE TUBE :

Use this tube for the detection of Methylene Chloride for 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	4 - 10 ppm	10 - 60 ppm	60 - 150 ppm
Number of Pump Stroke	4	2	1
Correction Factor	0.4	1	2.5
Sampling Time	3 minutes per pump stroke		
Detecting Limit	3 ppm (n = 4)		
Colour Change	White → pale pink		
Reaction Principle	$\text{CH}_2\text{Cl}_2 + \text{CrO}_3 + \text{H}_2\text{S}_2\text{O}_8 \rightarrow \text{Cl}_2$ $\text{Cl}_2 + 3,3,5,5\text{-Tetramethylbenzidine} \rightarrow \text{Holoquinone}$		

**Coefficient of Variation : 15% (for 10 to 20 ppm), 10% (for 20 to 60 ppm)**

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

**\*\* Store the tube in dark and cool place.**

## CORRECTION FOR TEMPERATURE, HUMIDITY AND PRESSURE:

Temperature: Correct for temperature by the table below :

Temperature	0°C (32°F)	5°C (41°F)	10°C (50°F)	15°C (59°F)	20°C (68°F)	25°C (77°F)	30°C (86°F)	35°C (95°F)	40°C (104°F)
Correction Factor	2.5	2.0	1.6	1.3	1.0	0.8	0.6	0.45	0.3

Humidity: No correction is 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 tight check of the pump insert a fresh sealed detector tube into pump.
2. Break tips off a fresh detector tube and analyzer tube in the tube tip breaker of the pump.
3. Connect © marked ends with rubber tubing after breaking each end.
4. Insert the analyzer tube securely into pump inlet with arrow (G) on the tube pointing toward pump.
5. Make certain pump handle is all the way in. Align guide marks on pump body and handle.
6. Pull handle all the way out until it locks on 1 pump stroke (100ml). Wait 3 minutes and confirm the completion of the sampling. Repeat the above sampling procedure one more times.
7. For lower than 10 ppm measurement, repeat the above sampling procedure 2 more times until the stain attains to the first calibration mark, For higher than 60ppm measurement, prepare fresh tube and take 1 pump strokes.
8. Read concentration at the interface of the stained-to-unstained reagent.
9. If correction is needed, multiply the correction factors of temperature, pump strokes and pressure.

## INTERFERENCES :

Substance	Concentration	Interference	Change colour by itself to
Chlorine, Bromine, Iodine		+	Pale pink
Unsaturated halogenated hydrocarbons	≥ 6 ppm	+	Pale pink
Saturated halogenated hydrocarbons	≥ 3 ppm	+	Pale pink

The table of this interference gases primarily expresses the interference of each coexisting gas in the gas concentration range, equivalent to the gas concentration. Therefore, the test result may be given positive result by the other substances not listed in the table. For more information is needed, please contact us or our distributors in your territory.

## DANGEROUS AND HAZARDOUS PROPERTIES :

Threshold Limit Value-Time Weighted Average by ACGIH (2007) : 50 ppm

Threshold Limit Value-Short Term Exposure Limit by ACGIH (2007) : 100 ppm

Explosive Range 15.5-66.9%

## DISPOSAL INSTRUCTION :

The pretreatment tube contains a small amount of hexavalent chromium and the detector tube contains a small amount of hexavalent chromium. When dispose of the tube regardless of 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 tubes, please feel free to contact your Gastec representatives.

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