

# GASTEC Instructions for No.136 L Methyl Bromide 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 guarantees.

### ⚠ 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, piece 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 result

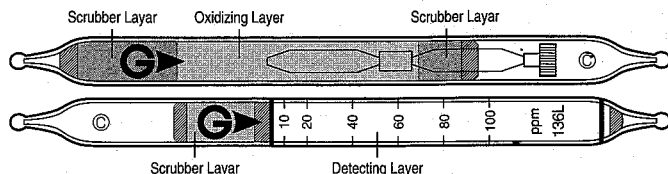
1. Use Gastec Gas Sampling Pump together with Gastec Detector Tubes only for the purposes specified in the instruction manual of the detector tube.
2. Use this tube under the temperature range of 0 - 40°C (32 - 104°F).
3. Use this tube under the relative humidity range of 0 - 90%.
4. This tube may be interfered 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.

## APPLICATION OF THE TUBE :

Use this tube for the detection of Methyl Bromide 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	2.5 - 10 ppm	10 - 100 ppm	100 - 200 ppm
Number of Pump Stroke	4	1	1/2
Correction Factor	1/4	1	2
Sampling Time	3 minutes per pump stroke		
Detecting Limit	0.5 ppm (n = 4)		
Color Change	White → Yellow		
Reaction Principle	Methyl bromide produce intermediate product by oxidizing agent and produce yellow stain by reaction with detecting agent.		

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

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

## CORRECTION FOR TEMPERATURE, HUMIDITY AND PRESSURE:

1. Temperature : Temperature correction is not required.
2. Humidity : Humidity correction is not required.
3. Pressure : To correct for pressure, multiply by 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. Follow instructions provided with the pump operating manual.
2. Break tips off a fresh detector tubes in the tube tip breaker of the pump.
3. Insert the tube securely into 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 3 minutes and confirm the completion of the sampling.
6. For lower than 10 ppm measurement, repeat the above sampling procedure 3 more times until the stain attains to the first calibration mark. For higher than 100 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 "Correction for Pressure"

## INTERFERENCES :

Substance	Concentration	interference	Change color by itself
Chlorine, Bromine, NOx		Plus error	Produce Yellow stain
Saturated halogenated hydrocarbons		Plus error	"

## APPLICATION FOR OTHER GASES:

Tube 136L can also be used for other substances as below:

Substance	Correction Factor	Pump Strokes	Measuring Range
Chlorobromomethane	0.9	1	9 - 90ppm
1,1-Dibromoethane	0.7	1	7 - 70ppm
1,2-Dibromoethane	0.8	1	8 - 80ppm
Dibromoethane	0.5	1	5 - 50ppm
Ethyl Bromide	1.0	1/2, 1, 4	2.5 - 200ppm
n-Butyl Bromide	1.0	1	1 - 100ppm

### (1) Benzyl bromine

Tube 136L Reading (n=1)	10	20	40	60	80	100
Benzyl Bromide Conc. (ppm)	25	75	180	350	580	850

### (2) Bromform

Tube 136L Reading (n=1)	10	20	40	60	80	100
Benzyl Bromide Conc. (ppm)	1	4	12	24	37	50

## CORRECTION FACTOR :

Detector tubes are primarily designed to measure specific gases. But it is also possible to measure other substances of similar chemical properties with the aid of a correction factor or chart. A correction factor is figure which is multiplied by the concentration interpreted from the color starting on the detector tube. The correction may also be presented as a chart on tube if the correction relationship is nonlinear. Therefore, please make use the correction factor/chart measuring ranges as a reference. Moreover, this factor may vary slightly between production batches. For a more precise factor please contact your Gastec distributor.

## DANGEROUS AND HAZARDOUS PROPERTIES :

Threshold Limit Value-Time Weighted Average by ACGIH (2000) : 1 ppm

## DISPOSAL INSTRUCTION :

Reagent of the tube uses Chromic acid as 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 tubes, please feel free to contact your Gastec representatives.

Manufacturer : Gastec Corporation  
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IM00136LE1  
Printed in Japan  
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