

# GASTEC No.174LL

## Instructions for 1,3-Butadiene Extra Low Range Detector Tube

### FOR SAFE OPERATION :

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

**⚠ 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).

**△ NOTES : For maintaining performance and reliability to the test result**

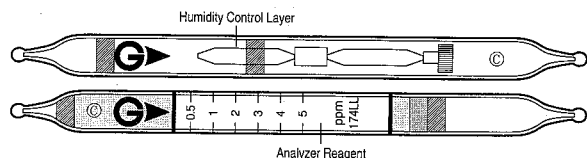
1. Use Gastec Gas Sampling pump together with Gastec Detector Tubes only for the purposes specified in the instruction manual of the detector tube.
2. Use this tube under the temperature range of 0 - 40°C (32 - 104°F).
3. Use this tube under the relative humidity range of 0 - 90%
4. This tube may be 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.
6. If the tubes are exposed under the sunlight for 1 hour or longer, the tube for measurement of the gas.

### APPLICATION OF THE TUBE :

Use this tube for the detection of 1,3-Butadiene 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	0.5 - 5 ppm
Number of Pump Strokes	n = 1
Correction Factor	1
Sampling Time	3 minutes per pump stroke
Detecting Limit	0.1ppm (n = 2)
Color Change	Pink → Pale Yellow
Reaction Principle	$\text{CH}_2=\text{CHCH}=\text{CH}_2 + \text{KMnO}_4 \rightarrow \text{Reaction Product}$

**\*\* 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 :

Calibration of the Gastec detector Tube No. 174LL is based on a tube temperature of 20°C (68°F) and not the temperature of the gas being sampled, approximately 50% relative humidity and normal atmospheric pressure.

No correction is required for tube temperature of 0-40°C (32-104°F) and relative humidity range of 0-90%. 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 tube and analyzer tube in the tube tip breaker of the pump.
3. Connect both tubes with rubber tubing supplied in the box of tubes.
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.
7. Read concentration at the interface of the stained-to-unstained reagent.
8. If pressure correction is needed, multiply the correction factor to the tube reading.

### INTERFERENCES :

Substance	Concentration	Interference	Change color by itself
Ammonia		No effect	No discoloration
CO, NO <sub>2</sub>		No effect	No discoloration
H <sub>2</sub> S, HCN		No effect	No discoloration
Acetylene	50ppm or higher	Plus error	Turn to white
Olefins		Plus error	Turn to Pale Yellow

### DANGEROUS AND HAZARDOUS PROPERTIES :

Threshold Limit Value-Time Weighted Average by ACGIH (1997) : 2 ppm.

### DISPOSAL INSTRUCTION :

Reagent of the tube dose not use toxic substance. On disposing 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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