

# GASTEC Instructions for No.76H Tetrahydrothiophene Detector Tube

## FOR SAFE OPERATION :

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

**⚠ WARNING: Use only Gastec detector tubes in a Gastec Pump.  
Do not interchange or use non-Gastec parts or components  
in Gastec's detector tube and pump system.**

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**

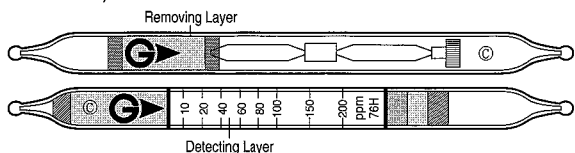
1. Use Gastec Gas Sampling Pump together with Gastec Detector Tubes only for the purposes specified in the instruction manual of the detector tube.
2. Use this tube within the temperature range of 0 - 40°C (32 - 104°F).
3. Use this tube within the relative humidity range of 0 - 90%.
4. This tube may be interfered by the coexisting gases. Please refer to the "INTERFERENCES".
5. If this tube is exposed under the direct sunlight, whole layer of the tube will be resulted to white and cannot use for gas detection.
6. 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 Tetrahydrothiophene in the City gas.

## SPECIFICATION :

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



Measuring Range	10 - 200 ppm
Number of Pump Stroke	1
Correction Factor	1
Sampling Time	1.5 minutes / pump stroke
Detecting Limit	2 ppm ( 1 pump stroke )
Color Change	Pink → Pale Yellow
Reaction Formula	Tetrahydrothiophene reduces permanganate to form pale yellowish reaction product. $C_4H_8S + MnO_4(Pink) \rightarrow Yellow\ Reaction\ Product$

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

**\*\* Store the tubes under dark and cool place.**

## CORRECTION FOR TEMPERATURE, HUMIDITY AND PRESSURE

**Temperature :** Since the tube is affected by the temperature, multiply correction factor to the tube reading.

Temperature °C	0	10	20	30	40
Temperature (°F)	32	50	68	86	104
Correction Factor	2.0	1.5	1.0	0.9	0.8

**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 operation manual.
2. Break tips off a fresh primary tube and secondary tube by bending each tube end in the tube tip breaker of the pump.
3. Connect © marked ends with rubber tubing after breaking each tube.
4. Insert 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 1.5 minute.
7. Read concentration at the interface of the stained-to-unstained reagent.
8. If atmospheric correction is needed, refer to the "Correction for Temperature, Humidity and Pressure".

## INTERFERENCES :

Substance	Concentration	Interference	Change color by itself
Ethyl mercaptan	≤ 4 ppm	No	Discolor whole layer to pale pink
Ethylene	≤ 5,000 ppm	No	Produce slight white stain
Propylene	≤ 2,000 ppm	No	Produce slight white stain
Methanol	≤ 2,000 ppm	No	Produce slight white stain
Hydrogen sulfide	≤ 150 ppm	No	150 ppm or higher H <sub>2</sub> S give entire reagent to dark brown

## DISPOSAL INSTRUCTION :

Reagent of the tube is used a small amount of lead. 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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