

# GASTEC Instructions for No.76 Tetrahydrothiophene 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.

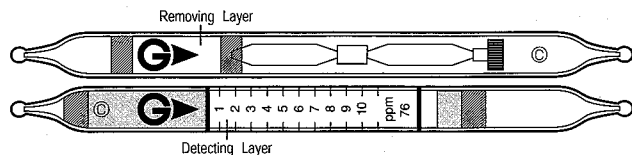
1. When breaking the tube ends, keep away from eyes.
2. Do not touch the broken glass tubes, piece and reagent with bare hand(s).
3. The sampling time represents the time necessary to draw the air sample through the tube. The tube must be positioned in the desired sampling area for the entire sampling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

### △ NOTES : For maintaining performance and reliability to the test 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. If this tube is exposed under the direct sunlight, whole layer of the tube will be resulted to white and cannot be used 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	1 - 10 ppm
Number of Pump Strokes	4
Correction Factor	1
Sampling Time	1.5 minutes per pump stroke
Detecting Limit	0.25 ppm (n = 4)
Color Change	Pink → Pale yellow
Reaction Formula	Tetrahydrothiophene reduces permanganate to from Pale yellow stain. $C_4H_8S + MnO_4(Pink) \rightarrow Yellow\ Reaction\ Product$

**Coefficient of Variation :** 10% (for 1 to 3 ppm), 5% (for 3 to 10 ppm)

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

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

## CORRECTION FOR TEMPERATURE, HUMIDITY AND PRESSURE

**Temperature :** Temperature Correction is not required.

Temperature °C (°F)	0(32)	10(50)	20(68)	30(86)	40(104)
Correction Factor	1.3	1.1	1.0	0.9	0.85

**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 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 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 (➔) 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 minutes and confirm the completion of the sampling. Repeat the sampling procedure 3 more time.
7. Read concentration at the interface of the stained-to-unstained reagent.
8. If correction is needed, multiply the correction factors of temperature and pressure.

## INTERFERENCES :

Substance	Concentration	Interference	Change color by itself to
Ethyl mercaptan	≦ 1 ppm	No effect	Pale pink for whole layer
Ethylene	≦ 1,000 ppm	No effect	Pale pink for whole layer
Propylene	≦ 500 ppm	No effect	Pale pink for whole layer
Methanol	≦ 300 ppm	No effect	Pale pink for whole layer
Hydrogen sulfide	≦ 30 ppm	No effect	Pale pink for whole layer

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.

## DISPOSAL INSTRUCTION :

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