

# GASTEC Instructions for No.4H Hydrogen Sulfide High 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 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 of the test result

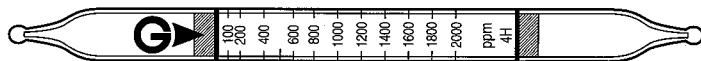
1. Use Gastec Gas Sampling Pump together with Gastec Detector Tubes only for the purposes specified in the instruction manual of the detector tube.
2. Use this tube within the temperature range of 0 - 40°C (32 - 104°F).
3. Use this tube within the relative humidity range of 0 - 90%
4. This tube may be interfered by the coexisting gases. Please refer to the "INTERFERENCES".
5. Shelf life and storage conditions of the tube are marked on the label of the box of tube.

## APPLICATION OF THE TUBE :

Use of this tube for the detection of Hydrogen sulfide 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.)



Detecting Layer

Measuring Range	10 - 100 ppm	100 - 2000 ppm	2000 - 4000 ppm
Number of Pump Strokes	2 - 10	1	1/2
Correction Factor	1/2 - 1/10	1	2
Sampling Time	30 seconds per pump stroke		
Detecting Limit	2 ppm (n = 10)		
Color Change	White → Brown		
Reaction Principle	Hydrogen sulfide reacts with lead acetate to form lead sulfide, which color is brown.		

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

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

## CORRECTION FOR TEMPERATURE, HUMIDITY AND PRESSURE :

**Temperature :** Temperature correction is not required.

**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 operating manual.
2. Break tips off a fresh detector tube in the tube tip breaker of the pump.
3. Insert the tube into the pump inlet with arrow 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 minute and confirm the completion of the sampling.
6. For lower than 100 ppm measurement, repeat the above sampling procedure one to nine more times until the stain attained to the first calibration mark. For higher than 2000 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 "Corrections for Temperature, Pump stroke and Pressure".

## INTERFERENCES :

Substance	Concentration	Interference	Change color by itself
Ammonia		No effect	No discoloration
Carbon monoxide, Carbon dioxide		No effect	No discoloration
Sulfur dioxide	1 time or higher	Plus error	No discoloration
Mercaptans	10% or higher	No effect	No discoloration
Organic Vapors		No effect	No discoloration

## DANGEROUS AND HAZARDOUS PROPERTIES:

Threshold Limit Value - Time Weighted Average by ACGIH (1999): 10 ppm.

## DISPOSAL INSTRUCTION :

Reagent of the tube uses toxic lead. 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.

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