

# GASTEC Instructions for No.4HT Hydrogen Sulphide Detector Tube

## FOR SAFE OPERATION :

Carefully read this manual and the instruction manual of your Gastec Gas Sampling Pump.

### ⚠ 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. Using non-Gastec parts or components in Gastec's detector tube and pump system or using a non-Gastec detector tube with a Gastec pump or using a Gastec detector tube with a non-Gastec pump may damage your detector tube and pump system, or may cause serious injuries, or death to the end-user. It will also void all warranties; and guarantees regarding performance and data accuracy.

### ⚠ CAUTION : If you do not observe the following precautions, you may suffer injuries or damage the product.

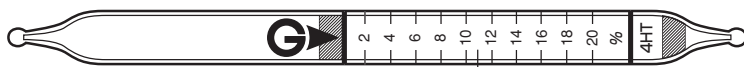
1. When breaking the tube ends, keep away from eyes.
2. Do not touch the broken glass tubes, pieces and reagent with bare hand(s).
3. The sampling time represents the time necessary to draw the air sample through the tube. The tube must be positioned in the desired sampling area for the entire sampling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

### △ NOTES : For maintaining performance and reliability of the test 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 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 with by the coexisting gases. Please refer to the "INTERFERENCES" below.
5. Shelf life and storage conditions of the tube are marked on the label of the tube box.

**APPLICATION OF THE TUBE :** Use this tube for the detection of Hydrogen Sulphide in air or the industrial areas and determining the environmental atmospheric condition.

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



Measuring Range	1 - 2 %	2 - 20 %	20 - 40 %
Number of Pump Strokes	2	1	1/2
Correction Factor	1/2	1	2
Sampling Time	1.5 minutes per pump stroke		45 seconds
Detecting Limit	0.2 % (n = 2)		
Colour Change	Pale blue → Blackish brown		
Reaction Principle	$\text{H}_2\text{S} + \text{CuSO}_4 \rightarrow \text{CuS} + \text{H}_2\text{SO}_4$		

**Coefficient of Variance: 10% (for 2 to 6 %), 5% (for 6 to 20 %)**

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

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

## CORRECTION FOR TEMPERATURE, HUMIDITY AND PRESSURE :


**Temperature :** No correction is required.

**Humidity :** No correction is required.

**Pressure :** To correct for pressure, use the formula below.

$$\frac{\text{Tube Reading (\%)} \times 1013 \text{ (hPa)}}{\text{Atmospheric Pressure (hPa)}}$$

## MEASUREMENT PROCEDURE :

1. For checking the leakage of the pump, insert a freshly sealed detector tube into pump. Follow instructions provided with the pump operating manual.
2. Break tips off a fresh detector tube with the tube tip breaker in the pump.
3. Insert the tube into the pump inlet with arrow  on the tube pointing toward the pump.
4. Make certain pump handle is all the way in. Align the guide marks on the pump body with the guide marks on the handle.
5. Pull the handle all the way out until it locks on one pump stroke (100 mL). Wait 1.5 minutes and confirm the completion of the sampling.
6. For smaller measurements less than 2%, repeat the above sampling procedure one more time. For measurements higher than 20%, prepare a fresh tube and perform a half pump stroke.
7. Read the concentration level at the interface where the stained reagent meets the unstained reagent
8. If necessary, multiply the readings by the correction factors of pump stroke and atmospheric pressure.

## INTERFERENCES :

Substance	Concentration	Interference	Interference gas only
Sulphur Dioxide	≥ 5%	-	No discolouration
Mercaptans	≥ 10%	+	No discolouration

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. Therefore, please make use of the correction factor/chart measuring ranges as a reference. For more precise factor please contact your Gastec distributor.

## DANGEROUS AND HAZARDOUS PROPERTIES :

Threshold Limit Value-Time Weighted Average by ACGIH (2009) : 10 ppm

Threshold Limit Value-Short Term Exposure Limit by ACGIH (2009) : 15 ppm

Explosive Range : 4 - 44 %

## DISPOSAL INSTRUCTION :

Reagent of the tube does not use toxic substances. 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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