

GASTEC No.21

Instructions for Carbonyl Sulphide 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.

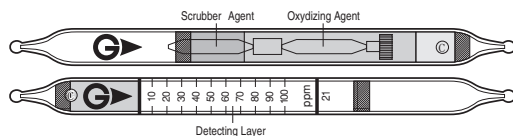
1. When breaking the tube ends, keep away from eyes.
2. Do not touch the broken glass tubes, pieces and reagent with bare hand(s).
3. The sampling time represents the time necessary to draw the air sample through the tube. The tube must be positioned in the desired sampling area for the entire sampling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

△ NOTES : For maintaining performance and reliability 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 within the temperature range of 10 - 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".
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 Carbonyl sulphide in air or 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 | 5 - 10 ppm | 10 - 100 ppm | 100 - 200 ppm |
| Number of Pump Strokes | 2 | 1 | 1/2 |
| Correction Factor | 1/2 | 1 | 2 |
| Sampling Time | 3 minutes per pump stroke | | 1.5 minutes |
| Detecting Limit | 1 ppm (n = 2) | | |
| Colour Change | Blue → Yellow | | |
| Reaction Formula | COS is oxidised by iodine pentoxide and sulphuric acid to generate SO ₂ in primary tube. The SO ₂ reacts with reagent to produce intermediate product which discolors indicator to Yellow. | | |

Coefficient of Variation: 10% (for 10 to 30 ppm), 5% (for 30 to 100 ppm)

- ** 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 :

Temperature : No correction is required.

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 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 end.
4. Insert 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 3 minutes and confirm the completion of the sampling.
7. For lower than 10 ppm measurement, repeat the above sampling procedure one more time until the stain attains to the first calibration mark. For higher than 100 ppm measurement, prepare fresh tubes and take 1/2 pump strokes.
8. Read concentration at the interface of the stained-to-unstained reagent.
9. If correction is needed, multiply the correction factors of pump strokes and pressure.

INTERFERENCES :

| Substance | Concentration | Interference | Change colour by itself to |
|-------------------|---------------|--------------|----------------------------|
| Carbon disulphide | | + | Yellow |
| Sulphur dioxide | | + | Yellow |
| Butane | ≥ 5,000 ppm | - | No |
| Propane | ≥ 5,000 ppm | - | No |

Up to 500 ppm of hydrogen sulphide is trapped in the white layer in the pretreatment tube.

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.

DANGEROUS AND HAZARDOUS PROPERTIES :

Explosive Range : 12 - 19 %

DISPOSAL INSTRUCTION :

Reagent of the tube does not use toxic substances. When dispose of the tube regardless of whether used or unused, follow the rules and regulations of the local government.

WARRANTY :

If you have any questions regarding detection and quality of the tubes, please feel free to contact your Gastec representatives.

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