

# GASTEC No.2D

## Instructions for Carbon Dioxide Passive Dosi-Tube

### FOR SAFE OPERATION :

Carefully read this manual before use.

**⚠ CAUTION : If not observed, injuries to the operator or damage to the product may result.**

1. When breaking the Passive Dosi-Tube, keep the tube away from eyes.
2. Do not touch any broken glass tubes, pieces and reagents with bare hand(s).
3. Keep tubes out of Direct Sunlight, which fades the discolouration of the tube.

**⚠ NOTES : For maintaining performance and reliability of the test results.**

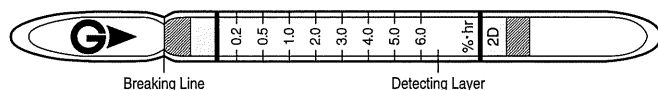
1. Use this tube within the temperature range of 0 - 40°C (32 - 104°F).
2. Use this tube within the relative humidity range of 0 - 90%.
3. This tube may be interfered with by coexisting gases. Please refer to the "INTERFERENCES".
4. The shelf life and storage condition of the Passive Dosi-tube are marked on the label of the tube box.

### APPLICATION OF THE TUBE :

Use this tube for detecting Carbon dioxide in the 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.)



This tube measures TWA (time-weighted average) gas concentration by utilizing natural diffusion of the target gas without a gas sampling pump.

Measuring Range	0.02 – 12 %
Sampling Hours	0.5 – 10 hours
Colour Change	Pale Red → Yellow
Reaction Principle	$\text{CO}_2 + 2\text{KOH} \rightarrow \text{K}_2\text{CO}_3 + \text{H}_2\text{O}$

**Coefficient of Variation: 10% (for 0.2 to 6.0 %-hr)**

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

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

### CORRECTION FOR TEMPERATURE, HUMIDITY AND PRESSURE :

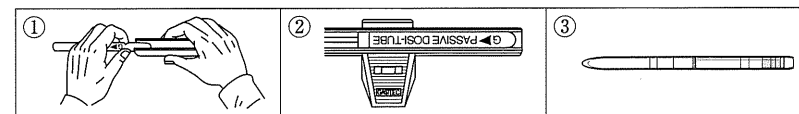
**Temperature :** Correct for temperature by the table below:

Temperature °C(°F)	0 (32)	5 (41)	10 (50)	15 (59)	20 (68)	25 (77)	30 (86)	35 (95)	40 (104)
Correction Factor	1.3	1.25	1.2	1.1	1.0	1.0	1.0	0.95	0.9

**Humidity :** No correction is required.

**Pressure :** No correction is required.

### MEASUREMENT PROCEDURE :



1. Break a Dosi-tube at the breaking line of the tube by the optional Passive Dosi-Tube Holder No.710.
2. Set the Dosi-tube into the tube holder firmly so the broken tip doesn't appear from the edge of the tube holder. Record the measurement starting time on a peel-off numbered label supplied with each box of the tubes and put the label on the Dosi-tube in the tube holder.
3. Clip the tube holder to the clothing (e.g. shirt collar) for personal sampling or place the Dosi-tube in the workplace where the measurement is required. When the sampling is finished, record the measurement finishing time on the label on the Dosi-tube.
4. Average gas concentration can be obtained from half an hour to 10 hours sampling. Calculate the actual sampling time and the average gas concentration can be obtained by the following formula:

$$\text{Average Concentration} = \frac{\text{Dosi-Tube Reading (\% \cdot \text{hour})}}{\text{Sampling Time (hours)}}$$

5. To protect the tube holder at the shirt collar from dropping during operation, it is advisable to support the tube holder with a string through the small hole of the tube holder.

### INTERFERENCES :

Substance	Concentration	Interference	Interference gas only
Ammonia	≦500 ppm	No	No discolouration up to 500ppm
Hydrogen chloride	≦300 ppm	No	No discolouration up to 300ppm
Chlorine	≦10 ppm	No	No discolouration up to 5ppm
Hydrogen cyanide	≦50 ppm	No	No discolouration up to 30ppm
Sulphur dioxide	≦15 ppm	No	No discolouration up to 15ppm
Nitrogen dioxide	≦10 ppm	No	No discolouration up to 10 ppm
Hydrogen sulphide	≦50 ppm	No	No discolouration up to 30 ppm

The table of the interference gases primarily expresses the interference of each coexisting gas in the gas concentration range that is equivalent to the target gas concentration.

Therefore, the test result may be affected by other substances not listed in the table.  
For more information, please contact us or your Gastec representatives.

**DANGEROUS AND HAZARDOUS PROPERTIES :**

Threshold Limit Value-Time Weighted Average by ACGIH (2014) : 5000 ppm

Threshold Limit Value-Short Term Exposure Limit by ACGIH (2014) : 30,000 ppm

**DISPOSAL INFORMATION :**

This Dosi-tube does not contain any toxic substances. When disposing 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 gas detection and quality of the tubes, please feel free to contact your Gastec representatives.

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