

# GASTEC Instructions for No.174D Butadiene Passive Dosi-Tube

## FOR SAFE OPERATION :

Read this manual carefully 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 away from eyes
2. Do not touch the broken glass tubes, pieces and reagent with bare hand(s).

**△ NOTES : For maintaining performance and reliability of the test result**

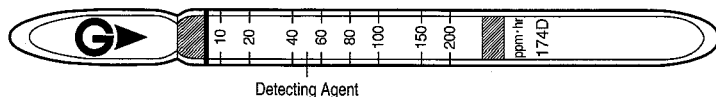
1. Use this tube within the temperature range of 0 - 40°C (32 - 104°F).
2. Use this tube within the relative humidity range of 0 - 90%.
3. This tube may be interfered by the coexisting gases. Please refer to the "INTERFERENCES".
4. Shelf life and storage conditions of the Passive dosi-tube are marked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

## APPLICATION OF THE TUBE :

Use of this tube for the detection of Butadiene in air or the industrial area and environmental atmospheric condition.

## SPECIFICATION :

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



Measuring Range	10 - 200 ppm · hr
Sampling Time	1 - 8 hours
Detecting Limit	1.3 ppm (8 hours)
Color Change	Reddish purple → Pale brown
Reaction Principle	Butadiene reacts with permanganate to produce light brown reaction product.

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

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

## CORRECTION FOR TEMPERATURE, HUMIDITY AND PRESSURE :

Temperature : To correct for temperature, multiply the tube reading by the following correction factor.

Temperature °C (°F)	0 (32)	10 (50)	20 (68)	30 (86)	40 (104)
Correction Factor	1.5	1.2	1.0	0.9	0.8

Humidity : Humidity correction is not required for humidity range of 0 - 90% RH.

Pressure : Pressure correction is not required.

## MEASUREMENT PROCEDURE :

1. Break the tube at the score of the tube with Gastec Passive Dosi-Tube Holder No.710.
2. Set the Dosi-tube in the Tube Holder firmly inside the holder so the broken part is not appeared from the edge of the holder. Record the measurement starting time on the peel off numbered label in each box of the tube and put the label on the tube.
3. For personal sampling, put the dosi-tube holder to the shirt collar of the personnel or workplace where the measurement is required. When the sampling is finished, record the time on the label of the tube.
4. Average gas concentration can be obtained from an hour sampling. 4 - 10 hours sampling term is recommended. Calculate actual sampling time and obtain the average gas concentration can be obtained by the following formula.

$$\text{Average Concentration} = \frac{\text{Dosi-Tube Reading (ppm} \cdot \text{hr)}}{\text{Actual Sampling Time (hour)}}$$

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

## INTERFERENCES :

Substance	Interference	Change color by itself
Unsaturated hydrocarbons	Plus error	Produce pale brown discoloration

## DANGEROUS AND HAZARDOUS PROPERTIES :

Threshold Limit Value-Time Weighted Average by ACGIH (1999) : 2 ppm (7 - 8 hours)

## APPLICATION FOR OTHER SUBSTANCES :

Substance	Correction	Measuring range
Ethylene	Factor : 1.2	1.5 - 242 ppm
Vinyl chloride	Factor : 1.2	1.5 - 242 ppm
Isoprene	Factor : 2.0	2.6 - 240 ppm
Trans - 1,2 - Dichloroethylene	Factor : 3.0	3.9 - 600 ppm

## CORRECTION FACTOR :

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. A correction factor is figure which is multiplied by the concentration interpreted from the color starting on the detector tube. The correction may also be presented as a chart on tube if the correction relationship is nonlinear. Therefore, please make use of the correction factor / chart measuring ranges as a reference. Moreover, this factor may vary slightly between production batches. For a more precise factor please contact your Gastec distributor.

## DISPOSAL INSTRUCTION :

Reagent of the tube uses toxic substances. 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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