

# GASTEC Instructions for No.122DL Toluene 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.**

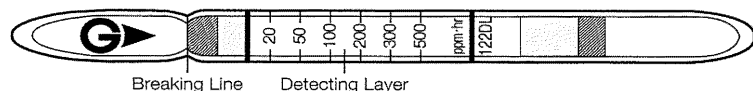
1. Use this tube within the temperature range of 0 - 40°C (32 - 104°F).
2. Use this tube within the relative humidity range of 0 - 90%.
3. This tube may be interfered with by coexisting gases. Please refer to the "INTERFERENCES".
4. The shelf life and storage condition of the Passive Dosi-tube are marked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

## APPLICATION OF THE TUBE :

Use this tube for detecting Toluene 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	2 - 500 ppm
Sampling Hours	1 - 10 hours
Detecting Limit	1 ppm (10 hours)
Colour Change	White → Brown
Reaction Principle	$2C_6H_5CH_3 + HCHO \rightarrow C_6H_4CH_3 - CH_2 - C_6H_4CH_3 + H_2O$ $C_6H_4CH_3 - CH_2 - C_6H_4CH_3 + H_2S_2O_7 \rightarrow \text{Reaction Product}$

**Coefficient of Variation: 10% (for 20 to 500 ppm-hr)**

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

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

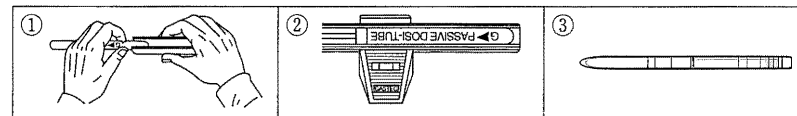
## CORRECTION FOR TEMPERATURE, HUMIDITY AND PRESSURE :

**Temperature :** No correction is required.

**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 1 hour to 10 hours sampling. Calculate the actual sampling time and the average gas concentration can be obtained by the following formula:

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

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
Alcohols, Esters, Ketones	≤ 30 ppm	No	No discolouration
Aromatic hydrocarbons		+	Brown

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.

## APPLICATION FOR OTHER SUBSTANCES :

The Gastec Passive Dosi-Tube No.122DL can also be used for the following substances with each correction factor:

Substance	Correction Factor	Sampling Time	Measuring Range
Ethyl benzene	1.4	1 - 10 hours	2.8 - 700 ppm
Xylene	1.7	1 - 10 hours	3.4 - 850 ppm
Cumene	1.7	1 - 10 hours	3.4 - 850 ppm
Benzene	1.2	1 - 10 hours	2.4 - 600 ppm
Styrene	13	1 - 10 hours	26 - 6500 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. Therefore, please make use of the correction factor/chart measuring ranges as a reference. For more precise factor please contact your Gastec representatives.

**DANGEROUS AND HAZARDOUS PROPERTIES :**

Threshold Limit Value-Time Weighted Average by ACGIH (2014) : 20 ppm

**INSTRUCTIONS ON DISPOSAL :**

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 your 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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IM01122DLE3  
Printed in Japan  
15D1Z