

GASTEC Instructions for No.133D Perchloroethylene 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

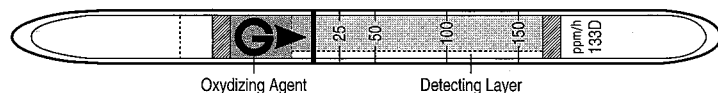
1. Use this tube within the temperature range of 0 - 40°C (32 - 104°F).
2. Use this tube within the relative humidity range of 20 - 80%.
3. This tube may be interfered by the coexisting gases. Please refer to the "INTERFERENCES".
4. Shelf life and storage conditions of the Passive dosi-tube are marked on the label of the box of tube.

APPLICATION OF THE TUBE :

Use of this tube for the detection of Perchloroethylene in 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.)



Measuring Range	3 - 150 ppm · hour
Sampling Time	1 - 8 hours
Detecting Limit	3 ppm (8 hours)
Color Change	Yellow → Purple
Reaction Principle	Perchloroethylene is oxidized by sulfuric acid to generate hydrogen chloride to change the indicator to purple. $\text{Cl}_2\text{CCl}_2 + \text{PbO}_2 + \text{H}_2\text{SO}_4 \rightarrow \text{HCl}$ $\text{HCl} + \text{Base} \rightarrow \text{Chloride products}$

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

CORRECTION FOR TEMPERATURE, HUMIDITY AND PRESSURE :

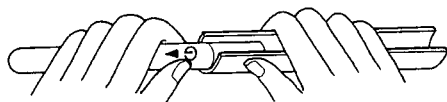
Temperature : To correct for temperature, multiply the tube reading by the following correction factor.

Temperature °C	0	10	20	30	40
(°F)	32	50	68	86	104
Correction Factor	1.8	1.2	1.0	0.9	0.8

Humidity : Humidity correction is not required for humidity range of 20 - 80% 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 by the following formula :

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

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
Hydrogen chloride, Chlorine	Plus error	Produce purple discoloration.
1,2-Dichloroethylene, Trichloroethylene	Plus error	Produce purple discoloration.
Toluene, Xylene	None	No effect

DANGEROUS AND HAZARDOUS PROPERTIES :

Threshold Limit Value-Time Weighted Average by ACGIH (1998) : 25 ppm (7 - 8 hours)

Threshold Limit Value-Short Term Exposure Limit by ACGIH (1998) : 100 ppm (15 minutes)

DISPOSAL INSTRUCTION :

Reagent of the tube does not use 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.