GASTEC No.14D Instructions for Hydrogen Chloride Passive Dosi-Tube

FOR SAFE OPERATION :

Carefully read this manual before use.

⚠ CAUTION : If you do not observe the following precautions, you may suffer injuries or damage to the product.

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 results, observe the following.

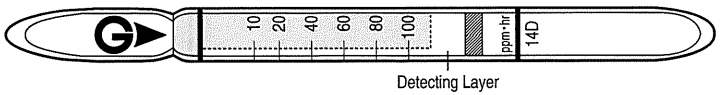
1. Use this tube within the temperature range of 0 - 40℃ (32 - 104℉).
2. Use this tube within the relative humidity range of 30 - 80%.
3. This tube may be interfered with by the coexisting gases. Please refer to the table "INTERFERENCES" below.
4. Shelf life and storage condition of the Passive Dosi-tube are marked on the label of the box of tube.

APPLICATION OF THE TUBE :

Use of this tube for the detection of Hydrogen chloride in air or the industrial areas and environmental atmospheric condition.

SPECIFICATION :

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



Measuring Range	1 – 100 ppm
Sampling Hours	1 – 10 hours
Detecting Limit	0.5 ppm (10 hours)
Colour Change	Yellow → Purple
Reaction Principle	HCl + Base → Chloride

Coefficient of Variation: 10% (for 10 to 100 ppm·hr)

****Shelf Life : Please refer to the validity date printed on the box of tube.**

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

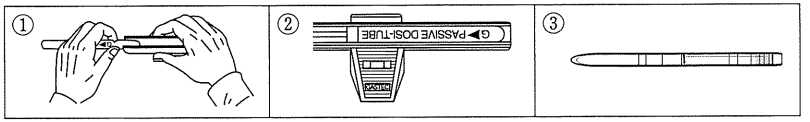
CORRECTION FOR TEMPERATURE, HUMIDITY AND PRESSURE :

Temperature & Humidity : Correct for temperature and humidity by the table below :

Relative Humidity	Correction Factor				
	0℃ (32℉)	10℃ (32℉)	20℃ (68℉)	30℃ (86℉)	40 (104℉)
30%	0.7	0.6	0.5	0.45	0.45
40%	0.9	0.8	0.7	0.65	0.6
50%	1.2	1.1	1.0	0.9	0.8
60%	1.6	1.5	1.3	1.2	1.1
70%	1.9	1.8	1.7	1.6	1.4
80%	2.4	2.3	2.2	2.0	1.7

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. 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. 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. If necessary, multiply the readings by the correction factors of temperature with the table.
4. Average gas concentration can be obtained from an hour to 10 hours sampling.
   Calculate the actual sampling time and the average gas concentration can be obtained by the following formula :

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

INTERFERENCES :

Substance	Concentration	Interference	Changes colour by itself to
Chlorine	≧1/5	+ (Bleaches zero zone)	Bleaches zero zone
Nitric acid	≧1/5	+	Purple
Hydrogen fluoride	≧1/1	+	Purple

This table of interference gases primarily expresses the interference of each coexisting gas in the gas concentration range, that is 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 Gastec representatives.

APPLICATION FOR OTHER SUBSTANCES :

Tube 14D can also be used for other substances as below :

Substance	Correction factor	Sampling time	Measuring range
Nitric acid	0.8	1 – 10 hours	0.8 - 80 ppm
Hydrogen fluoride	2.5	1 – 10 hours	2.5 – 250 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-Ceiling by ACGIH (2015) : 2 ppm

INSTRUCTIONS ON DISPOSAL :

The reagent of the tube does not use toxic substances. When disposing the tube regardless of whether it has been used or not, 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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