

GASTEC Instructions for No.17D Hydrogen Fluoride 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).

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

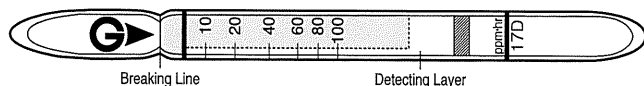
1. Use this tube within the temperature range of 0 - 40°C (32 - 104°F).
2. Use this tube within the relative humidity range of 30 - 80%.
3. This tube may be interfered with by coexisting gases. Please refer to the "INTERFERENCES".
4. The shelf life and storage condition of the Passive Dosi-tube are marked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

APPLICATION OF THE TUBE :

Use this tube for detecting Hydrogen fluoride 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	1 – 100 ppm
Sampling Hours	1 – 10 hours
Detecting Limit	0.5 ppm (10 hours)
Colour Change	Yellow → Purple
Reaction Principle	HF + Indicator → Purple product

Coefficient of Variation: 15% (for 10 to 20 ppm·hr), 10% (for 20 to 100 ppm·hr)

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

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

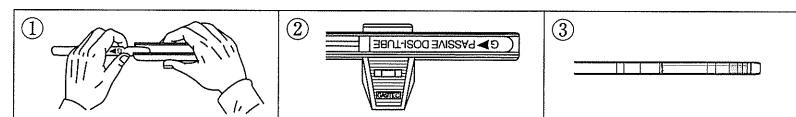
CORRECTION FOR TEMPERATURE, HUMIDITY AND PRESSURE :

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

Relative Humidity	Correction factor				
	0°C (32°F)	10°C (50°F)	20°C (68°F)	30°C (86°F)	40°C (104°F)
30%	1.3	0.8	0.5	0.4	0.3
40%	1.7	1.1	0.7	0.5	0.4
50%	2.3	1.5	1.0	0.7	0.5
60%	-	2.0	1.4	1.0	0.7
70%	-	-	1.9	1.4	1.0
80%	-	-	2.5	1.9	1.3

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
Hydrogen chloride	≥ 1/5	+	Purple
Nitric acid	≥ 1/5	+	Purple
Chlorine	≥ 1/5	+ (Bleaches zero zone)	Bleaches zero zone

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 :

Passive Dosi-Tube No.17D can also be used for other substances as below:

Substance	Correction Factor	Sampling Time	Measuring Range
Hydrogen chloride	0.4	1 – 10 hours	0.4 – 40 ppm
Nitric acid	0.32	1 – 10 hours	0.32 – 32 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): 0.5 ppm

Threshold Limit Value-Ceiling by ACGIH (2014): 2 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 the local government.

WARRANTY :

If you have any questions regarding gas detection and the quality of the tubes, please feel free to contact your Gastec representatives.

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