

# GASTEC Instructions for No.3DL Ammonia 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).
3. Keep tubes out of Direct Sunlight. The sunlight fades the discoloration of the tube.

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

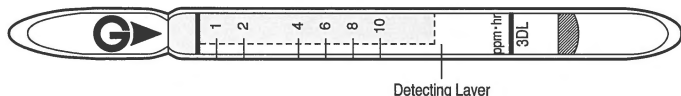
1. Use this tube within the temperature range of 0 - 40°C (32 - 104°F).
2. Use this tube within the relative humidity range of 0 - 90%.
3. This tube may be interfered with by the coexisting gases. Please refer to the "INTERFERENCES".
4. Shelf life and storage conditions of the Passive dosi-tube are marked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

## APPLICATION OF THE TUBE :

Use of this tube for the detection of Ammonia 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    | 0.1 - 10 ppm  |
| Sampling Hours     | 1 - 10 hours  |
| Detecting Limit    | 0.02 ppm (10 hours)   |
| Colour Change      | Pink → Yellow   |
| Reaction Principle | $2\text{NH}_3 + \text{H}_2\text{SO}_4 = (\text{NH}_4)_2\text{SO}_4$ |

**Coefficient of Variance : 10% (for 1 to 10 ppm·hr)**

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

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

## CORRECTION FOR TEMPERATURE, HUMIDITY AND PRESSURE :

**Temperature :** Correct for temperature by the table below :

|                     |       |       |        |        |        |        |        |        |         |
|---------------------|-------|-------|--------|--------|--------|--------|--------|--------|---------|
| Temperature (°C/°F) | 0(32) | 5(41) | 10(50) | 15(59) | 20(68) | 25(77) | 30(86) | 35(95) | 40(104) |
| Correction Factor   | 1.25  | 1.18  | 1.1    | 1.05   | 1.0    | 0.96   | 0.92   | 0.88   | 0.84    |

**Humidity :** No correction is required for 20 - 90% R.H. If humidity is less than 20% R.H., tube reading will be 30 to 35% higher than 50% R.H.

**Pressure :** No correction is 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. If necessary, multiply the readings by the correction factors of temperature with the table.
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 :

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

\* This value is after other correction(s), if any, are applied.

## INTERFERENCES :

| Substance | Interference | Changes colour by itself to |
|-----------|--------------|-----------------------------|
| Amines    | +            | Yellow                      |
| Hydrazine | +            | Yellow                      |

The table of this interference gases primarily expresses the interference of each coexisting gas in the gas concentration range, 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 our distributors in your territory.

## DANGEROUS AND HAZARDOUS PROPERTIES :

Threshold Limit Value-Time Weighted Average by ACGIH (2023) : 25 ppm

Threshold Limit Value-Short Term Exposure Limit by ACGIH (2023) : 35 ppm

Explosive Range: 15 - 28 %

## APPLICATION FOR OTHER SUBSTANCES :

The Gastec Passive Dosi-Tube No.3DL can also be used for the following substances with each correction factor :

| Substance       | Correction Factor | Sampling Time | Measuring Range |
|-----------------|-------------------|---------------|-----------------|
| Methyl amine    | 1.9               | 1 - 10 hours  | 0.19 - 19 ppm   |
| Dimethylamine   | 2.9               | 1 - 10 hours  | 0.29 - 29 ppm   |
| Trimethyl amine | 2.3               | 1 - 10 hours  | 0.23 - 23 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 distributor.

## DISPOSAL INFORMATION :

Reagent of the tube does not use toxic substances. When dispose 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 quality of the tubes, please feel free to contact your Gstec representatives.

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