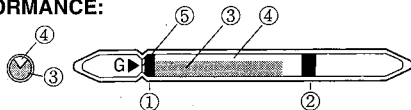


#81D

GASTEC PASSIVE DOSIMETER TUBE FOR ACETIC ACID

The Gastec Passive Dosimeter Tube No. 81D provides the measurement of mean value of ACETIC ACID in air by the principle of diffusion sampling. No air sampling equipment such as aspiration pump, motor driven air sampler is needed for the measurement. The Calibration marks printed on each tube indicates PPM × Hour and averaged concentration can be available by dividing the sampling time measured.

PERFORMANCE:



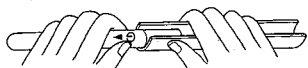
- 1 & 2 Upper and Lower End Plug Packing 3 Diffuser
4 Analyzing Reagent 5 Score

Calibration Scale	5 - 100 ppm · hour			
Color Change	Purple - Yellow			
Measuring Range	0.5 - 10 ppm	0.63 - 12.5 ppm	1.25 - 25 ppm	5 - 100 ppm
Sampling Hours	10	8	4	1

Shelf Life

Please refer to the term of validity of a label of a Detector Tube Box.

OPERATING PROCEDURE:



- Prepare Passive Dosimeter Tube and Dosi-Tube holder No. 710.
- Record the measurement starting time on the peel off numbering label in each box of the tube and put the label on the tube.
- Break the tube at the score of the tube with Gastec Passive Dosi-Tube Holder. Insert a part of the tube in the tube holder where the tube can be broken at the score and break the tube carefully. Remove the broken part of the tube and discard it carefully from the tube holder.
- Insert the analyzing tube end into the tube holder. For personal sampling, put the dosi-tube holder to the shirt collar of the personnel or workplace where the measurement is required.
- 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.
- Measurement concentration can be obtained from an hour sampling. 4 - 8 hours sampling time is recommended.
- When the sampling is finished, record the time of the label of the tube and calculate the actual sampling time.
- The averaged gas concentration can be obtained by the following formula:

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

CORRECTION FOR TEMPERATURE, HUMIDITY AND PRESSURE :

Calibration of the Gastec Passive Dosimeter Tube No. 81D is based on a tube temperature of 20°C (68°F) and approximately 50% relative humidity and normal atmospheric pressure.

- For temperature other than 20°C (68°F) tube reading must be corrected according to the Temperature Correction Factor below:

Temperature Correction Factor No. 81D

Temperature	0°C (32°F)	10°C (50°F)	20°C (68°F)	30°C (86°F)	40°C (104°F)
Correction Factor	1.4	1.2	1.0	0.7	0.5

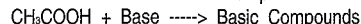
- No humidity correction for 0 - 90% relative humidity range is required.
- No pressure correction is required.

CALIBRATION AND ACCURACY:

The Gastec Passive Dosimeter Tube No. 81D is carefully calibrated as an integral part of the manufacturing process. Calibration and accuracy test are performed using combinations of dynamic diffusion tube method and potassium iodate method.

DETECTION PRINCIPLE:

Acetic Acid neutralizes base to discolor pH indicator to yellow.



INTERFERENCES :

Interferent	Concentration	Result	Comment
Cl ₂ , NO ₂ , SO ₂		Plus error	Produce similar stain by themselves.
HCl, HNO ₃ , HCl			

DANGEROUS AND HAZARDOUS PROPERTIES :

Threshold Limit Value-Time Weighted Average by ACGIH (1996): 10 ppm (7 - 8 hours)

Threshold Limit Value-Short Term Exposure Limit by ACGIH (1996): 15ppm (15 min.)

APPLICATION FOR OTHER SUBSTANCES :

Gastec Passive Dosi-Tube No. 81D can also be used for the detection of other substances below :

Name of Substance	Correction Factor	Measuring Range	Sampling Hours
Formic Acid	1.1	0.55 - 110 ppm	1 - 10
Acetic anhydride	0.6	0.3 - 60 ppm	1 - 10

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. A correction factor is a figure which is multiplied by the concentration interpreted from the color starting on the detector tube. The correction may also be presented as a chart on tube if the correction relationship is nonlinear. Therefore, please make use of the correction factor/chart measuring ranges as a reference. Moreover, this factor may vary slightly between production batches. For a more precise factor please contact your Gastec distributor.

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97G - 81D - E1
Printed in Japan