

GASTEC Instructions for No.81L Acetic Acid Low Range Detector Tube

FOR SAFE OPERATION :

Read this manual and the instruction manual of your Gastec Gas Sampling Pump carefully.

⚠ WARNING :

1. Use only Gastec detector tubes in a Gastec Pump.
2. Do not interchange or use non-Gastec parts or components in Gastec's detector tube and pump system.
3. The use of non-Gastec parts or components in Gastec's detector tube and pump system or use of a non-Gastec detector tube with a Gastec pump or use of a Gastec detector tube with a non-Gastec pump may result in property damage, serious bodily injury, and death; voids all warranties; and voids all performance and data accuracy guaranties

⚠ CAUTION : If not observed, injuries to the operator or damage to the product may result.

1. When breaking the tube ends, 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

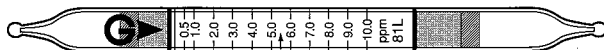
1. Use Gastec Gas Sampling Pump together with Gastec Detector Tubes only for the purposes specified in the instruction manual of the detector tube.
2. Use this tube under the temperature range of 0 - 40°C (32 - 104°F).
3. Use this tube under the relative humidity range of 0 - 90%.
4. This tube may be interfered by the coexisting gases. Please refer to the "INTERFERENCES".
5. Shelf life and storage conditions of the tube is marked on the label of the box of tube.

APPLICATION OF THE TUBE :

Use this tube for the detection of Acetic Acid 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.)



Detecting Layer (pink)

Measuring Range	0.125 - 0.25 ppm	0.25 - 10 ppm	10 - 25 ppm
Number of Pump Strokes	2	1	1/2
Correction Factor	1/2	1	2.5
Sampling Time	1.5 minutes per pump stroke		
Detecting Limit	0.05 ppm (n = 2)		
Color Change	Pink → Pale Yellow		
Reaction Principle	CH ₃ CO ₂ H + Base → Reaction product		

Coefficient of Variance : 10 % (for 0.25 to 3 ppm), 5 % (for 3 to 10 ppm)

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

**** Store the tubes in the refrigerator to keep at 10°C (50°F) or below.**

CORRECTION FOR TEMPERATURE, HUMIDITY AND PRESSURE :

Calibration of the Gastec detector Tube No.81L is based on a tube temperature of 20°C (68°F) and not the temperature of the gas being sampled, approximately 50% relative humidity and normal atmospheric pressure.

Temperature :	Temperature °C (°F)	0 (32)	10 (50)	20 (68)	30 (86)	40 (104)
Correction Factor		1.3	1.1	1.0	0.9	0.8

Humidity : No correction is required for relative humidity range of 0 - 90%.

Pressure : To correct for pressure, multiply the tube reading by

$$\frac{\text{Tube Reading (ppm)} \times 1013 \text{ (hPa)}}{\text{Atmospheric Pressure (hPa)}}$$

MEASUREMENT PROCEDURE :

1. For leak tight check of the pump insert a fresh sealed detector tube into pump. Follow instructions provided with the pump operating manual.
2. Break tips off a fresh detector tube in the tube tip breaker of the pump.
3. Insert the tube securely into pump inlet with arrow (➔) on the tube pointing toward pump.
4. Make certain pump handle is all the way in. Align guide marks on pump body and handle.
5. Pull handle all the way out until it locks on 1 pump stroke (100ml). Wait 1.5 minutes. Repeat the above sampling procedure one more time. Read concentration at the interface of the stained-to-unstained reagent.
6. If the discoloration is before the first calibration mark (0.25ppm), repeat the above sampling procedure one more time without removing the tube. Obtain true concentration by dividing the tube reading by 2.
7. If the discoloration exceeds 10 ppm by 1 pump stroke, prepare another new tube. Use 1/2 pump stroke and obtain true concentration by multiplying the tube reading by 2.5.
8. If correction is needed, multiply the corrections factor of Temperature, Number of pump strokes, and Pressure respectively.

INTERFERENCES :

Substance	Concentration	Interference	Change color by itself
Ammonia	Higher than 2 times	Minus error	No stain
Chlorine, Sulfur dioxide, Nitrogen dioxide		Plus error	Discolors pale yellow
Formic Acid Acetic anhydride		Plus error	Discolors yellow stain

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 substance not listed in the table. For more precise information is needed, please contact us or our distributors in your territory.

APPLICATION FOR OTHER SUBSTANCES :

Substance	Correction	No. of pump strokes	Measuring range
Acetic anhydride	Factor : 0.6	1	0.15 to 6 ppm
Acrylic acid	Factor : 1.8	1	0.45 to 18 ppm
Butyric acid	Factor : 1.3	1	0.325 to 13 ppm
Formic acid	Factor : 2.0	1	0.5 to 20 ppm
Isovaleric acid	Factor : 1.5	1	0.38 to 15 ppm
Methacrylic acid	Factor : 1.4	1	0.35 to 14 ppm
Propionic acid	Factor : 1.0	1	0.25 to 10 ppm
Valeric acid	Factor : 1.5	1	0.38 to 15 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. Moreover, this factor may vary slightly between production batches. For more precise factor please contact your Gastec distributor.

DAZING AND HAZARDOUS PROPERTIES :

Threshold Limit Value-Time Weighted Average by ACGIH (2002) : 10 ppm
Threshold Limit Value short term Exposure Limit by ACGIH (2002) : 15 ppm

DISPOSAL INSTRUCTION :

Reagent of the tube does not use any hazardous substances. On disposing the tube regardless of 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.