

GASTEC Instructions for No.80 Acid Gases (calibrated by Acetic Acid) 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).
3. The sampling time represents the time necessary to draw the air sample through the tube. The tube must be positioned in the desired sampling area for the entire sampling time or until the flow finish indicator indicates the end of the sample.

△ NOTES : For maintaining performance and reliability of the test result

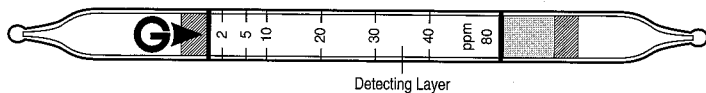
1. Use Gastec Gas Sampling Pump together with Gastec Detector Tubes only for the purposes specified in the instruction manual of the detector tube.
2. Use this tube within the temperature range of 0 - 40°C (32 - 104°F).
3. Use this tube within the relative humidity range of 30 - 80%.
4. Shelf life and storage conditions of the tube are marked on the label of the box of tube.

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APPLICATION OF THE TUBE : Use of this tube for the detection of Acid gases 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	1 - 2 ppm	2 - 40 ppm	40 - 80 ppm
Number of Pump Strokes	4	2	1
Correction Factor	1/2	1	2
Sampling Time	45 seconds per pump stroke		
Detecting Limit	0.5 ppm (n = 4)		
Color Change	Purple → List of Color change		
Reaction Principle	Acid gases react with detecting layer to produce each discoloration.		

**** 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 :

Calibration of the Gastec detector Tube No.80 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.

- (1) **Temperature Correction :** Temperature correction is not required.
- (2) **Humidity Correction :** No Correction is required for relative humidity range of 30 - 80%.
- (3) **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 the handle all the way out until it locks on 1 pump stroke (100ml). Wait 45 seconds. 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 (2 ppm), repeat the above sampling procedure two (2) more time without removing the tube.
7. If the discoloration exceeds 40 ppm by 2 pump strokes, prepare another new tube. Use 1 pump stroke.
8. If correction is needed, multiply the corrections factor of Temperature, Number of pump strokes, and Pressure respectively.

APPLICATION FOR OTHER SUBSTANCES :

Substance	Correction	Pump strokes	Color Change	Measuring range
Hydrogen chloride	4	2	Pale reddish purple	8 - 160 ppm
Chlorine	0.35	2	White	0.7 - 14 ppm
Nitric acid	2.5	2	Pale reddish purple	5 - 100 ppm
Sulfur dioxide	0.75	2	Yellow	1.5 - 30 ppm
Nitrogen dioxide	0.1	2	Pinkish gray	0.2 - 4 ppm
Iodine	0.06	2	Light bluish gray	0.12- 2.4 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. A correction factor is 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 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.

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.

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