

# GASTEC Instructions for No.143 Vinyl Acetate 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, piece 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 to the test result

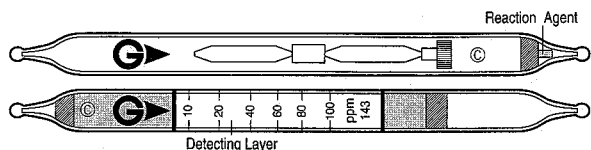
1. Use Gastec Gas Sampling Pump together with Gastec Detector Tubes only for the purposes specified in the instruction manual of the detector tube.
2. Use this tube under the temperature range of 0 - 40°C (32 - 104°F).
3. Use this tube under the relative humidity range of 0 - 90%.
4. This tube may be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

## APPLICATION OF THE TUBE :

Use this tube for the detection of Vinyl Acetate. 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	5 - 10 ppm	10 - 100 ppm	100 - 250 ppm
Number of Pump Strokes	4	2	1
Correction Factor	1/2	1	2.5
Sampling Time	45 sec. per pump stroke		
Detecting Limit	1 ppm (n = 4)		
Color Change	White → Brown		
Reaction Principle	$\text{CH}_3\text{CO}_2\text{CH} : \text{CH}_2 + \text{C}_6\text{H}_5(\text{CH}_3)_3 + \text{H}_2\text{S}_2\text{O}_7 \rightarrow$ Condensation Polymer(Brown)		

- \*\* Shelf Life : Please refer to the Validity Date printed on the box of tube.
- \*\* Store the tubes in the dark and cool place.

## CORRECTION FOR TEMPERATURE, HUMIDITY AND PRESSURE

Calibration of the Gastec Tube No.143 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 for 0 - 40°C (32 - 104°F).
2. **Humidity :** Humidity correction is not required.
3. **Pressure :** To correct for pressure, multiply by the tube reading by

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

## MEASUREMENT PROCEDURE :

1. For leak tight check of the pump insert a fresh sealed detector tube into pump. Follow instructions provided with the pump operation 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 (G) 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 45 seconds. Repeat the above sampling procedure one more time.
6. For less than 10 ppm measurement, repeat the above sampling procedure 2 more times. If the discoloration exceeds 100 ppm by 2 pump strokes, prepare fresh tube then take 1 pump stroke.
7. Read concentration at the interface of the stained-to-unstained reagent.
8. If correction is required, multiply the tube reading by temperature, pressure respectively.

## INTERFERENCES :

Substance	Concentration	Interference	Change color by itself
Aldehydes		Plus error	Brown
Ketones		Plus error	Brown
Ethylene	≥ 1000ppm	Plus error	Yellow
Vinyl chloride	≥ 500ppm	Plus error	Yellow

## DANGEROUS AND HAZARDOUS PROPERTIES :

Threshold Limit Value-Time Weighted Average by ACGIH (1999) : 10 ppm  
Flammable Range : 2.6 - 13.6%

## DISPOSAL INSTRUCTION

Reagent of the tube uses toxic chromic acid. 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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