GASTEC No.131LB Instructions for Vinyl Chloride Detector Tube

FOR SAFE OPERATION :

Carefully read this manual and the instruction manual of your Gastec Gas Sampling Pump.

⚠ 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 you do not observe the following precautions, you may suffer injuries or damage to the product.

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 results, observe the following.

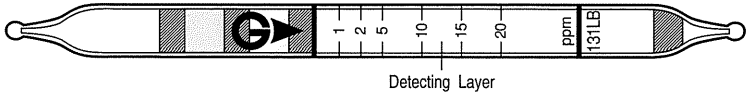
1. Use Gastec Gas Sampling Pump together with Gastec Detector Tubes only for the purposes specified in the instruction manual of the detector tube.
2. Use this tube within the temperature range of 5 – 40℃ (41 - 104℉).
3. Use this tube within the relative humidity range of 0 - 90%.
4. This tube may be interfered with by the coexisting gases. Please refer to the table "INTERFERENCES" below.
5. Shelf life and storage conditions of the tube are marked on the label of the box of tube.

APPLICATION OF THE TUBE :

Use this tube for the detection of Vinyl chloride in air or the industrial areas and environmental atmospheric condition.

SPECIFICATION :

(Because of Gastec's commitment to continued improvement, specifications are subject to change without notice.)



Measuring Range	0.25 – 1 ppm	1 – 20 ppm	20 – 70 ppm
Number of Pump Strokes	4	2	1
Correction Factor	1/4	1	3.5
Sampling Time	1.5 minutes per pump stroke		
Detecting Limit	0.05 ppm (n=4)		
Colour Change	Yellow → Purple		
Reaction Principle	CH_2:CHCl + PbO_2 + H_2SO_4 → HCl HCl + Base → Chloride		

Coefficient of Variation : 10% (for 1 to 5 ppm), 5% (for 5 to 20 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℃ (50℉) or below.**

CORRECTION FOR TEMPERATURE, HUMIDITY AND PRESSURE :

Temperature : Correct for temperature by the table below.

Tube Reading (ppm)	True concentration							
	5℃ (41℉)	10℃ (50℉)	15℃ (59℉)	20℃ (68℉)	25℃ (77℉)	30℃ (86℉)	35℃ (95℉)	40℃ (104℉)
20	100	50	30	20	15	12	10	8
15	70	35	22	15	11	9	7.5	6
10	40	25	15	10	7.5	7	5	4
5	20	10	7	5	4	3	2	2
2	6	4	2.5	2	2	1.5	1.2	1
1	3	2	1	1	1	0.8	0.7	0.6

Humidity : No correction is required.

Pressure : To correct for pressure, use the formula below.

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

MEASUREMENT PROCEDURE :

1. For checking the leakage of the pump, insert a freshly sealed detector tube into the pump. Follow instructions provided with the pump operating manual.
2. Break tips off a fresh detector tube with the tube tip breaker of the pump.
3. Insert the tube into the pump inlet with arrow (G►) on the tube pointing toward the pump.
4. Make certain the pump handle is all the way in. Align the guide marks on the pump body with the guide marks on the handle.
5. Pull the handle all the way out until it locks at one pump stroke (100 mL). Wait 1.5 minutes and confirm the completion of the sampling. Repeat the above sampling procedure one more time.
6. For smaller measurements less than 1 ppm, repeat the above sampling procedure two more times until the stain reaches the first calibration mark. For measurements higher than 20 ppm, prepare a fresh tube and perform one pump stroke.
7. Read concentration level at the interface where the stained reagent meets the unstained reagent.
8. If necessary, multiply the readings by the correction factors of temperature, pump strokes, and atmospheric pressure respectively.

INTERFERENCES :

Substance	Concentration	Interference	Interference gas only
Chlorine, Hydrogen chloride	≧1/10	+	Purple
Alcohols, Esters, Ketones		No	No discolouration
1,2-Dichloroethylene	≧1/10	+	Purple
Trichloroethylene, Tetrachloroethylene	≧1/10	+	Purple
Aromatic hydrocarbons		No	No discolouration

The table of this interference gases primarily expresses the interference of each coexisting gas in the gas concentration range, that is 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 Gastec representatives.

DANGEROUS AND HAZARDOUS PROPERTIES :

Threshold Limit Value-Time Weighted Average by ACGIH (2014): 1 ppm
Explosive range : 3.6 - 23%

INSTRUCTIONS ON DISPOSAL :

Reagent of the tube uses a small amount of lead. When disposing 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 Gastec representatives.

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