GASTEC No.132M Instructions for Trichloroethylene 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 guarantees.

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

1. When breaking the tube ends, keep away from eyes.
2. Do not touch the broken glass tubes, pieces or 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.

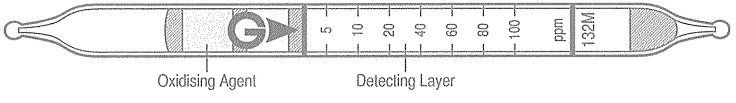
1. Use Gastec Gas Sampling Pump together with Gastec Detector Tubes only for the purposes specified in the instruction manual of the detector tube.
2. Use this tube within the temperature range of 0 - 40℃ (32 - 104℉).
3. Use this tube within the relative humidity range of 0 - 90%.
4. This tube may be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

APPLICATION OF THE TUBE :

Use this tube for detecting Trichloroethylene in the air or in industrial areas and for determining the environmental atmospheric condition.

SPECIFICATION :

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



Measuring Range	2 - 5 ppm	5 - 100 ppm	100 - 270 ppm
Number of Pump Strokes	2	1	1/2
Correction Factor	0.4	1	2.7
Sampling Time	1 minute per pump stroke		30 seconds
Detecting Limit	0.4 ppm (n = 2)		
Colour Change	Yellow → Reddish purple		
Reaction Principle	Trichloroethylene is decomposed by nascent oxygen by oxidising agent to liberate hydrogen chloride which discolours indicator to reddish purple.		

Coefficient of Variation : 10% (for 5 to 20 ppm), 5% (for 20 to 100 ppm)
****Shelf Life : Please refer to the validity date printed on the box of tubes.**
****Store the tubes at 10°C (50°F) or below in a refrigerator.**

CORRECTION FOR TEMPERATURE, HUMIDITY AND PRESSURE :

Calibration of the Gastec detector Tube No.132M is based on a tube temperature of 20℃ (68℉) and not the temperature of the gas being sampled, approximately 50% relative humidity and normal atmospheric pressure.

Temperature : Correct for temperature by the table below :

Temperature ℃(℉)	0(32)	5(41)	10(50)	15(59)	20(68)	25(77)	30(86)	35(95)	40(104)
Correction Factor	1.5	1.2	1.15	1.1	1.0	0.94	0.87	0.84	0.77

Humidity : No correction is required between 0 - 90% R.H.

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

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

* This value is after other correction(s), if any are applied.

MEASUREMENT PROCEDURE :

1. For checking the leakage of the pump, insert a fresh 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 pump.
4. Make certain the pump handle is all the way in. Align the guide mark on the pump body with the guide mark on the handle.
5. Pull the handle all the way out until it locks at one pump stroke (100 mL). Wait one minute and confirm the completion of the sampling.
6. For smaller measurements less than 5 ppm, repeat the above sampling procedure one more time until the stain reaches the first calibration mark. For measurements higher than 100 ppm, prepare a fresh tube and perform a half pump stroke.
7. Read concentration level at the interface where the stained reagent meets the unstained reagent.
8. If temperature correction is necessary, obtain the true concentration by using the temperature correction factor. Afterwards multiply the correction factor of pump stroke if necessary.
9. If pressure correction is necessary, use the pressure correction formula.

INTERFERENCES :

Substance	Concentration	Interference	Changes colour by itself to
Nitric oxide, Nitrogen dioxide		No	No discolouration
Hydrogen chloride, Chlorine, Bromine		+	Reddish purple
Acetone	≦ 200 ppm	No	No discolouration
Unsaturated Halogenated HCs		+	Reddish purple
Aromatic hydrocarbons	≧ 100 ppm	—	No discolouration

This table of 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 give a positive result from other substances not listed in the table. If more information is needed, please contact us or your Gastec representatives.

DANGEROUS AND HAZARDOUS PROPERTIES :

Threshold Limit Value-Time Weighted Average by ACGIH (2021) : 10 ppm
Threshold Limit Value-Short Term Exposure Limit by ACGIH (2021) : 25 ppm

INSTRUCTIONS ON DISPOSAL:

The reagent of the tube uses a small amount of lead. When disposing the tube regardless of whether it has been used or not, follow the rules and regulations of your local government.

WARRANTY :

If you have any questions regarding gas detection and quality of the tubes, please feel free to contact your Gastec representatives.

Manufacturer : Gastec Corporation
8-8-6 Fukayanaka, Ayase-City, Kanagawa 252-1195, Japan
https://www.gastec.co.jp/
Telephone +81-467-79-3910 Facsimile +81-467-79-3979

IM00132ME3
Printed in Japan
21C1Z