GASTEC No.132P Instructions for Trichloroethylene Detector Tube

FOR SAFE OPERATION :

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

⚠ 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. Recommend to cover the tube end with the safety rubber cap (optional).

⚠ NOTES : For maintaining performance and reliability of the test results, observe the following.

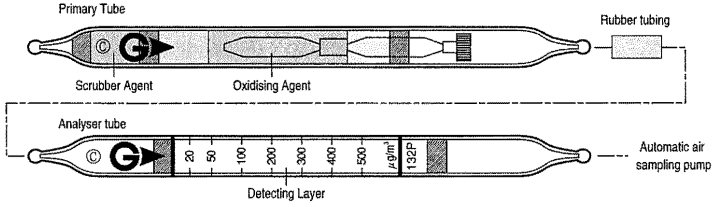
1. Recommend to use Gastec Gas Sampling device Model GSP-300FT-2(if not available use the air sampling pump of equivalent to sample for 100 mL/min) together with Gastec Detector Tubes only for the purposes specified in the instruction manual of the detector tube.
2. Use this tube within the temperature range of 5 - 40℃ (41 - 104℉).
3. Use this tube within the relative humidity range of 20 - 80%.
4. This tube may be interfered with by the coexisting gases. Please refer to the table "INTERFERENCES" below.
5. During the measurement, keep tubes out of direct sunlight.
6. 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 the detection of Trichloroethylene 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	20 - 500 $\mu g/m^3$	500 - 1200 $\mu g/m^3$
Sampling Rate	100 mL/min	100 mL/min
Correction Factor	1	2.4
Sampling Time	30 minutes	15 minutes
Detecting Limit	5 $\mu g/m^3$ (3000 mL)	
Colour Change	Yellow → Purple	
Reaction Principle	$Cl_2C{:}CHCl + PbO_2 + H_2SO_4 \rightarrow HCl$ $HCl + Base \rightarrow Chloride$	

Coefficient of Variation : 10% (for 20 to 100 $\mu g/m^3$), 5% (for 100 to 500 $\mu g/m^3$)
****Shelf Life : Please refer to the validity date printed on the box of tube.**
****Store the tubes in the cool and dark place.**

CORRECTION FOR TEMPERATURE, HUMIDITY AND PRESSURE :

Temperature : Correct for temperature by the table below :

Tube Reading ($\mu g/m^3$)	True Concentration ($\mu g/m^3$)							
	5℃ (41℉)	10 ℃ (50℉)	15℃ (59℉)	20℃ (68℉)	25℃ (77℉)	30 ℃ (86℉)	35℃ (95℉)	40℃ (104℉)
500	900	740	650	500	430	360	220	80
400	665	560	485	400	350	275	165	55
300	495	420	360	300	260	190	105	35
200	355	300	250	200	175	110	65	20
100	210	165	135	100	80	45	30	10
50	140	95	75	50	45	25	15	7
20	70	45	30	20	18	15	10	5

Humidity : No correction is required.

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

$$\frac{\text{Tube Reading } (\mu g/m^3) \times 1013 \text{ (hPa)}}{\text{Atmospheric Pressure (hPa)}}$$

MEASUREMENT PROCEDURE :

If automatic air sampling pump Model GSP-300FT-2 is used

1. Prior to operation please confirm if black colour inlet rubber tube holder is equipped with the pump.
2. Break tips off a fresh primary tube and an analyser tube with the tube tip holder supplied.
3. Connect Ⓒ marked ends with rubber tubing after breaking each end.
4. Insert the analyser tube into the pump inlet with arrow (G►) on the tube pointing toward pump.
5. Set the flow metre at 100 mL/min and timer to "30 minutes" of the pump. Press the start switch of the pump to start the sampling.
6. After the sampling, remove the detector tube from the pump.
7. Read the concentration from the length of discolouration of the tube. If the discolouration exceeded the 500 $\mu g/m^3$ level, prepare a pair of fresh tubes. Reset the pump at flow rate of 100 mL/min and "15 minutes" of the timer and start the sampling again.
8. Read the concentration level at the interface where the stained reagent meets the unstained reagent.
9. If necessary, correct Tube Reading for temperature with the table to have True Concentration.
10. If necessary, multiply the readings by the correction factors of sampling time and atmospheric pressure respectively.

INTERFERENCES :

Substance	Interference	Changes colour by Itself to
Hydrogen chloride, Chlorine	No	No discolouration
Vinyl chloride	+	Purple
1,2-Dichloroethylene	+	Purple
Tetrachloroethylene	+	Purple
1,1,1-Trichloroethane	No	No discolouration
Toluene, Xylene	No	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 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 (2015) : 10 ppm
Threshold Limit Value-Short Term Exposure Limit by ACGIH (2015) : 25 ppm

INSTRUCTIONS ON DISPOSAL :

The reagent of the primary tube uses a small amount of lead. The reagent of the analyser tube does not use toxic substances. 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
http://www.gastec.co.jp/
Telephone +81-467-79-3910 Facsimile +81-467-79-3979

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