GASTEC No.133TP Instructions for Tetrachloroethylene 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).

△NOTES : For maintaining performance and reliability to the test results, observe the following.

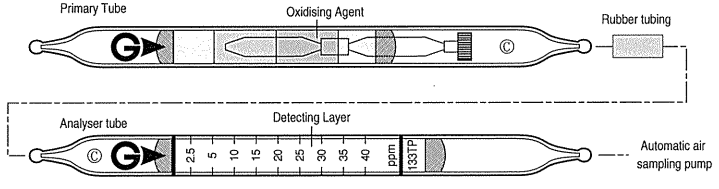
1. Recommend to use Gastec Gas Sampling device Model GSP-300FT-2 (if not available use the air sampling pump of equivalent to sample for 100 mL/min) together with Gastec Detector Tubes only for the purposes specified in the instruction manual of the detector tube.
2. Use this tube within the temperature range of 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 the detection of Tetrachloroethylene 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	2.5 - 40 ppm	40 - 84 ppm
Sampling Rate	100 mL/min	50 mL/min
Correction Factor	1	2.1
Sampling Time	10 minutes	10 minutes
Detecting Limit	0.25 ppm (1000 mL)	
Colour Change	Yellow → Reddish purple	
Reaction Principle	$Cl_2C{:}CCl_2 + PbO_2 + H_2SO_4 \rightarrow HCl$ $HCl + Base \rightarrow Chloride$	

Coefficient of Variation: 10% (for 2.5 to 15 ppm), 5% (for 15 to 40 ppm)

****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:

Temperature℃(℉)	0 ℃ (32℉)	5℃ (41℉)	10 ℃ (50℉)	15℃ (59℉)	20℃ (68℉)	25℃ (77℉)	30 ℃ (86℉)	35℃ (95℉)	40℃ (104℉)
Correction Factor	1.5	1.3	1.2	1.05	1.0	0.95	0.9	0.75	0.72

Humidity : No correction is required.

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 :

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 "10 minutes" of the pump. Press the start switch of the sampler to start the sampling.
6. After the sampling, remove the detector tube from the pump.
7. Read the concentration level at the interface where the stained reagent meets the unstained reagent.
8. For measurements higher than 40 ppm, prepare a pair of fresh tubes. Set the flow metre at 50 mL/min and timer to "10 minutes" of the pump and start the sampling again.
9. If necessary, multiply the readings by the correction factors of temperature, sampling rate and atmospheric pressure respectively.

INTERFERENCES :

Substance	Concentration	Interference	Change colour by itself to
Hydrogen chloride	≧1/5	+	Reddish purple
Chlorine	≧1/10	−	Pale yellow
Vinyl chloride	≧1/5	+	Reddish purple
1,2-Dichloroethylene	≧1/5	+	Reddish purple
Trichloroethylene	≧1/5	+	Reddish purple
1,1,1-Trichloroethane	≦800 ppm	No	No discolouration
Toluene, Xylene	≧20 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 be given positive result by the other substances not listed in the table. For more information is needed, please contact us Gastec representatives.

DANGEROUS AND HAZARDOUS PROPERTIES :

Threshold Limit Value-Time Weighted Average by ACGIH (2016): 25 ppm

Threshold Limit Value-Short Term Exposure Limit by ACGIH (2016): 100 ppm

INSTRUCTIONS ON DISPOSAL :

The reagent of the primary tube includes 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.

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