GASTEC No.133P 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 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).

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

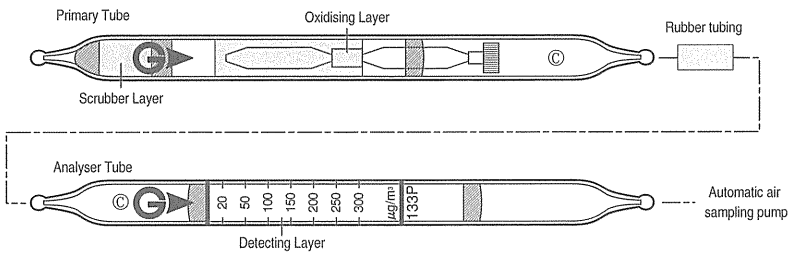
1. Recommend to use Gastec Gas Sampling device Model GSP-300FT-2 (if not available use the air sampling pump of equivalent to sample for 100mL/min) together with Gastec Detector Tubes only for the purposes specified in the instruction manual of the detector tube.
2. Use this tube within the temperature range of 5 - 40℃ (41 - 104℉).
3. Use this tube within the relative humidity range of 20 - 80%.
4. This tube may be interfered 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.
6. During the measurement, keep tubes out of direct sunlight.

APPLICATION OF THE TUBE :

Use this tube for detecting Tetrachloroethylene 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	20 - 300 μg/m³	300 - 720 μg/m³
Sampling Rate	100 mL/min	100 mL/min
Correction Factor	1	2.4
Sampling Time	30 minutes	15 minutes
Detecting Limit	5 μg/m³ (3000 mL)	
Colour Change	Yellow → Purple	
Reaction Principle	Tetrachloroethylene reacts with oxidising agent to produce intermediate products to produce purple stain.	

Coefficient of Variation : 10% (for 20 to 100 μg/m³), 5% (for 100 to 300 μg/m³)
****Shelf Life : Please refer to the validity date printed on the box of tubes.**
****Store the tubes in a cool and dark place.**

CORRECTION FOR TEMPERATURE, HUMIDITY AND PRESSURE :

Temperature : Correct for temperature by the table below :

Tube Reading (μg/m³)	True Concentration (μg/m³)							
	5℃ (41℉)	10℃ (50℉)	15℃ (59℉)	20℃ (68℉)	25℃ (77℉)	30℃ (86℉)	35℃ (95℉)	40℃ (104℉)
300	450	355	325	300	250	200	185	65
250	385	300	275	250	210	165	140	50
200	305	235	215	200	160	125	105	30
150	235	175	165	150	120	95	75	20
100	160	125	110	100	80	60	45	10
50	80	65	55	50	40	25	20	5
20	35	30	25	20	15	10	5	3

Humidity : No correction is required between 20 - 80% R.H.

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

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

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

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 (Ⓖ►) 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 concentration level at the interface where the stained reagent meets the unstained reagent.
8. For measurements higher than 300 μg/m³, prepare a pair of fresh tubes. Set the flow metre at 100 mL/min and timer to "15 minutes" of the pump and start the sampling again.

9. If temperature correction is necessary, obtain the true concentration by using the temperature correction table. Afterwards multiply the correction factor of sampling time if necessary.
10. If pressure correction is necessary, use the pressure correction formula.

INTERFERENCES :

Substance	Interference	Changes colour by itself to
Hydrogen chloride, Chlorine	No	No discolouration
Vinyl chloride	+	Purple
1,2-Dichloroethylene	+	Purple
Trichloroethylene	+	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 give a positive result from other substances not listed in the table. If more information is needed, please contact us or your Gastec representatives.

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.

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IM01133PE2
Printed in Japan
19E1Z