

GASTEC Instructions for No.132HH Trichloroethylene Extra High Range Detector Tube

FOR SAFE OPERATION :

Read this manual and the instruction manual of your Gastec Gas Sampling Pump carefully.

⚠ 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 not observed, injuries to the operator or damage to the product may result.

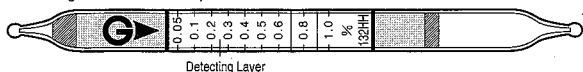
1. When breaking the tube ends, keep away from eyes.
2. Do not touch the broken glass tubes, pieces and reagent with bare hand(s).
3. The sampling time represents the time necessary to draw the air sample through the tube. The tube must be positioned in the desired sampling area for the entire sampling time or until the flow finish indicator indicates the end of the sample.

⚠ NOTES : For maintaining performance and reliability of the test result

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°C (32 - 104°F).
3. Use this tube within the relative humidity range of 0 - 90%.
4. This tube may be interfered by the coexisting gases. Please refer to the "INTERFERENCES".
5. Shelf life and storage conditions of the tube are marked on the label of the box of tube.

APPLICATION OF THE TUBE : Use of this tube for the detection of Trichloroethylene in air or the industrial areas and environmental atmospheric condition.

SPECIFICATION : (As a result of Gastec's commitment to continued improvement, specifications are subject to change without notice.)



Measuring Range	0.05 - 1 %	1.0 - 2.5 %
Number of Pump Strokes	1	1/2
Correction Factor	1	2.5
Sampling Time	1 minute per pump stroke	30 seconds
Detecting Limit	0.005%	
Color Change	White → Yellowish brown (brown at demarcation)	
Reaction Formula	Trichloroethylene reduces iodine pentoxide to liberate iodine, which is yellowish brown in color.	

**** Shelf Life : Please refer to the Validity Date printed on the box of tube.**

**** Store the tubes under dark and cool place.**

CORRECTION FOR TEMPERATURE, HUMIDITY AND PRESSURE :

Calibration of the Gastec detector Tube NO.132HH is based on a tube temperature of 20°C (68°F) and not the temperature of the gas being sampled, approximately 50% relative humidity and normal atmospheric pressure.

1. Temperature : To correct for temperature multiply the Correction factor below:

Temperature °C (°F)	0 (32)	10 (50)	20 (68)	30 (86)	40 (104)
Correction Factor	1.4	1.2	1.0	0.9	0.8

2. Humidity : Humidity correction is not required for relative humidity range of 0-90%.

3. Pressure : Pressure Correction

To correct for pressure, multiply the tube reading by

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

Atmospheric Pressure (hPa)

MEASUREMENT PROCEDURE :

1. For leak tight check of the pump insert a fresh sealed detector tube into pump. Follow instructions provided with the pump operating manual.
2. Break tips off a fresh detector tube in the tube tip breaker of the pump.
3. Insert the tube into the pump inlet with arrow on the tube pointing toward pump.
4. Connect both tubes with rubber tubing supplied in the box of tubes.
5. Make certain pump handle is all the way in. Align guide marks on pump body and handle.
6. Pull handle all the way out until it locks on 1 pump stroke (100ml). Wait 1 minute. Read concentration at the interface of the stained-to-unstained reagent.
7. For higher than 1.0% measurement, prepare fresh tube, pull 1/2 pump stroke.
8. If correction is needed, multiply the corrections factor of Temperature, Number of pump strokes, and pressure respectively.

INTERFERENCES :

Substance	Concentration	Interference	Change color by itself
Carbon Monoxide	0.1% or higher	Plus error	Produce dark brown stain.
Acetylene	0.1% or higher	Plus error	Produce dark brown stain.
Acetone	6 times or lower	No effect	Produce brown stain.
Ethylene	0.5% or higher	Plus error	Produce dark brown stain.
Toluene, Xylene	3 times or lower	No effect	Produce brown stain.
HCs of C3 or higher		Plus error	Produce dark brown stain.
Tetrachloroethylene		Plus error	Produce yellowish brown stain.
1,1,1-Trichloroethane		Plus error	Produce ring stain (yellowish brown)

The table of this interference gases primarily expresses the interference of each coexisting gas in the gas concentration range, equivalent to the gas concentration. Therefore, the test result may be given positive result by the other substance not listed in the table. For more precise information is needed, please contact us or our distributors in your territory.

APPLICATION FOR OTHER GASES

Substance	Correction Factor	No. of Pump Strokes	Measuring Range
Tetrachloroethylene	1.5	1	0.075 - 1.5%

CORRECTION FACTOR :

Detector tubes are primarily designed to measure specific gases. But it is also possible to measure other substances of similar chemical properties with the aid of a correction factor or chart. Therefore, please make use of the correction factor / chart measuring ranges as a reference. For more precise factor please contact your Gastec distributor.

DANGEROUS AND HAZARDOUS PROPERTIES :

Threshold Limit Value-Time Weighted Average by ACGIH (2002) : 50 ppm

Threshold Limit Value-Short Term Exposure Limit by ACGIH (2002) : 100 ppm

DISPOSAL INSTRUCTION :

Reagent of the tubes use toxic substance. On disposing the tube regardless of 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 tube please feel free to contact your Gastec representatives.

Manufacturer : Gastec Corporation
6431 Fukaya, Ayase-City, 252-1103, Japan

IM00132HHE1
Printed in Japan
02J1Z