

GASTEC DICHLOROETHYLENE TUBE

The Gastec Detector Tube No. 139 provides a rapid, fully quantitative analysis of the concentration of DICHLOROETHYLENE in air with an accuracy tolerance of $\pm 25\%$ at utilizing the Gastec Multi-Stroke Gas Sampling Pump.

PERFORMANCE :

Calibration Scale	10—100 ppm (based on 1 pump stroke)		
Measuring Range	5—10 ppm	10—100 ppm	100—250 ppm
Number of Pump Stroke	2	1	1/2
Correction Factor	Tube Reading \div 2	Tube Reading \times 1	Tube Reading \times 2.5
Detecting Limit*	1 ppm	—	—
Sampling Time	1 minute per pump stroke		
Color Change	Yellow \rightarrow Purple		
Shelf Life	2 years		

*Minimum detectable concentration

MEASUREMENT PROCEDURE :

- Break tips off a fresh detector tube by bending each tube end in the tube tip breaker of the pump.
- Insert the tube securely into the rubber inlet of the pump with the arrow on the tube pointing toward the pump.
- Make certain the pump handle is all the way in. Align the guide marks on the shaft and pump body.
- Pull the handle all the way out until it locks on 1 pump stroke (100 ml). Wait until staining stops.
- Read concentration at the interface of the stained-to-unstained reagent.
- If the stain exceeds the highest calibration mark by 1 pump stroke sampling, use 1/2 stroke sampling (50 ml) in which case the true concentration is obtained by multiplying the tube reading by 2.5.
- If the stain does not attain the first calibration mark by 1 pump stroke sampling, repeat one more pump stroke and divide the tube reading by 2.

CORRECTION FOR TEMPERATURE, HUMIDITY AND PRESSURE :

Calibration of the Gastec detector tube No. 139 is based on a tube temperature of 20°C (68°F) and not the temperature of the gas being sampled, relative humidity of 50% and normal atmospheric pressure.

- For temperature other than 20°C (68°F), tube reading must be corrected according to the Temperature Correction Table below:

Temperature Correction Table No.139

Tube Reading (ppm)	True Concentration (ppm)					
	0°C (32°F)	5°C (41°F)	10°C (50°F)	15°C (59°F)	20°C (68°F)	40°C (104°F)
100		300	190	130	100	95
80		210	130	95	80	75
60	260	140	90	70	60	55
40	140	75	55	45	40	36
20	53	35	27	23	20	19
10	22	15	12	11	10	10

- No correction is required for relative humidity range of 0—100%.
- Tube reading is proportional to absolute pressure. To correct for pressure, multiply by

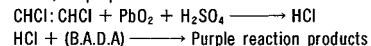
$$\frac{760}{\text{Atmospheric Pressure (mmHg)}}$$

CALIBRATION AND ACCURACY :

The Gastec detector tube No. 139 is carefully calibrated as an integral part of the manufacturing process. Calibration and accuracy test are performed using combinations of dynamic diffusion tube method and dynamic gas flow and gas chromatographic technique.

DETECTION PRINCIPLE :

Dichloroethylene is decomposed by nascent oxygen generated by oxidizing agent to liberate hydrogen chloride, which discolors Hammett indicator (4—phenylazo-diphenylamine) to purple.



INTERFERENCES :

Interferent

Trichloroethylene, Tetrachloroethylene, Chloroprene, Dichloroethylene, Methyl bromide and other halogenated hydrocarbons, Hydrogen chloride, Hydrogen fluoride, and other acid gases

Result

Produce similar stain by themselves and if coexisted they give plus error

DANGEROUS AND HAZARDOUS PROPERTIES :

Threshold Limit Value—Time Weighted Average by ACGIH (1990) : 200 ppm (7—8hours)

SEE OPERATING INSTRUCTIONS INCLUDED WITH THE GASTEC MULTI-STROKE GAS SAMPLING PUMP.

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