

14M

GASTEC

HYDROGEN CHLORIDE MIDDLE RANGE DETECTOR TUBE

The Gastec Detector Tube No. 14M provides a rapid, fully quantitative analysis of the concentration of HYDROGEN CHLORIDE in air with an accuracy tolerance of $\pm 25\%$ utilizing the Gastec Multi-Stroke Gas Sampling Pump.

PERFORMANCE :

Calibration Scale	20—500 ppm (based on 1 pump stroke)		
Measuring Range	10—20 ppm	20—500 ppm	500—1000 ppm
Number of Pump Stroke	2	1	1/2
Correction Factor	1/2	1	2
Detecting Limit*	2.5 ppm	—	—
Sampling Time	1 minute per pump stroke		
Color Change	Yellow—Red		

* Minimum detectable concentration.

SHELF LIFE :

Please refer to the term of validity of a label of a Detector Tube Box.

MEASUREMENT PROCEDURE :

1. Break tips off a fresh detector tube by bending each tube end in the tube tip breaker of the pump.
2. Insert the tube securely into the rubber inlet of the pump with the arrow on the tube pointing toward the pump.
3. Make certain the pump handle is all the way in. Align the guide marks on handle and pump body.
4. Pull the handle all the way out until it locks on 1 pump stroke (100 ml). Wait 1 minute until staining stops.
5. Read concentration at the interface of the stained-to-unstained reagent.
6. If the discoloration is before the first calibration mark (20 ppm), take 1 more pump stroke without removing the tube. Obtain the true concentration by dividing the tube reading by 2.
For repeating pump strokes the handle must be turned 1/4 turn in either direction to unlock the pump so the handle can be returned to the starting position.
7. If the discoloration exceeds the highest calibration mark by 1 pump stroke, use 1/2 pump stroke (50 ml). Obtain true concentration by multiplying the tube reading by 2.

CORRECTION FOR TEMPERATURE, HUMIDITY, AND PRESSURE :

Calibration of the Gastec detector tube No. 14M 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.

No temperature correction is required for tube temperature of 0° to 40°C (32° to 104°F). Humidity correction is not also required for relative humidity range of 0 to 90%.

To correct for pressure, multiply by

760

Atmospheric Pressure (mmHg)

CALIBRATION AND ACCURACY

The Gastec detector tube No. 14M is carefully calibrated as an integral part of the manufacturing process. Calibration and accuracy test are performed using gas concentrations generated by a static concentration system.

DETECTION PRINCIPLE :

Hydrogen chloride changes the color of Hammett indicator (4-phenylazodiphenylamine) to red.



INTERFERENCES :

Substance	Concentration	Interference	Changes color by itself to
Hydrogen fluoride	> 600 ppm	+	Red
Nitric acid	$\geq 1/10$	+	Red
Nitrogen dioxide	$\geq 1/1$	-	Red (≥ 500 ppm)

Water vapor and up to 600 ppm of hydrogen fluoride are trapped in the pretreatment (white) layer.

DANGEROUS AND HAZARDOUS PROPERTIES :

Threshold Limit Value-Time Weighted Average by ACGIH (1996): 5 ppm (7 to 8 hours)

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

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