

#12M

**GASTEC
HYDROGEN CYANIDE
MIDDLE RANGE DETECTOR TUBE**

The Gastec Detector Tube No.12M provides a rapid, fully quantitative analysis of the concentration of HYDROGEN CYANIDE in air with a minimum accuracy of ±25% utilizing the Gastec Multi-Stroke Gas Sampling Pump.

PERFORMANCE :

Calibration Scale	50 - 80 ppm (based on 1 pump stroke)		
Measuring Range	17 - 50 ppm	50 - 800 ppm	800 - 2400 ppm
Number of Pump Strokes	2	1	1/2
Correction Factor	Tube reading ÷ 3	Tube reading × 1	Tube reading × 3
Detecting Limit*	1 ppm	—	—
Sampling Time	1 minute per pump stroke		
Color Change	Yellow — Red		

* Minimum detectable concentration.

SHELF LIFE :

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

MEASUREMENT PROCEDURE :

1. Break tips off a fresh detector tube by bending each 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 red guide marks on the shaft and pump body.
4. Pull the handle all the way out until it locks on 1 pump stroke (100 ml). Wait 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 (50ppm), repeat the above sampling procedure one more time without removing the tube. Obtain the concentration by dividing the tube reading by 3. For 2 pump stroke (200ml) sampling, the handle must be turned 1/4 turn in either direction so the handle can be returned to the starting position.
7. If the stain exceeds the highest calibration mark (800ppm) with 1 pump stroke, use 1/2 pump stroke (50ml). Obtain true concentration by multiplying the tube reading by 3.

CORRECTION FOR TEMPERATURE, HUMIDITY AND PRESSURE :

Calibration of the Gastec detector tube No. 12M 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 correction is required for tube temperatures of 0°-40°C (32°-104°F) and relative humidity of 10-90%. To correct for pressure, multiply by

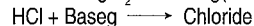
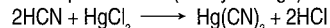
$$\frac{760}{\text{Atmospheric Pressure (mmHg)}}$$

CALIBRATION AND ACCURACY :

The Gastec detector tube No.12M is carefully calibrated as an integral part of the manufacturing process. Calibration and accuracy test are performed using combination of dynamic permeation tube method and Brom-Benzylpyriline or Pridine-Pyrazoline method of analysis.

DETECTION PRINCIPLE :

Hydrogen Cyanide reacts with mercuric chloride to hydrogen chloride, which discolors pH indicator (Methyl orange) to red.



INTERFERENCES :

Substance	Concentration	Interference	Changes color by itself to
Hydrogen sulfide	> 500ppm	+	} Red
Sulfur dioxide	≧ 500ppm	+	

DANGEROUS AND HAZARDOUS PROPERTIES :

Threshold Limit Value-Ceiling (TLV-C) (1997) : 4.7 ppm

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

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Printed in Japan