

#3HM

**GASTEC  
AMMONIA HIGH/MIDDLE RANGE  
DETECTOR TUBE**

The Gastec Detector Tube No.3HM provides a rapid, fully quantitative analysis of the concentration of AMMONIA in air with an accuracy tolerance of  $\pm 25\%$  at 1, 2, and 5 times TLV and  $\pm 35\%$  at 1/2 TLV utilizing the Gastec Multi-Stroke Gas Sampling Pump.

**PERFORMANCE:**

Calibration Scale	0.05—1.6%(based on 1 pump stroke)	
Measuring Range	0.05—1.6%	1.6—3.52%
Number of Pump Stroke	1	1/2
Correction Factor	Tube Reading $\times$ 1	Tube Reading $\times$ 2.2
Detecting Limit*	0.01%	—
Sampling Time	1 minute per pump stroke	
Color Change	Pink—Yellow	
Shelf Life	3 years	

\*Minimum detectable concentration

**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 1pump stroke(100 ml).  
Wait until staining stops.
5. Read concentration at the interface of the stained-to-unstained reagent.
6. If the stain exceeds the highest calibration mark, use 1/2 pump stroke.  
Obtain true concentration by multiplying the tube reading by 2.2.

**CORRECTION FOR TEMPERATURE, HUMIDITY AND PRESSURE:**

Calibration of the Gastec detector tube No.3HM 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 temperature of 0—40°C(32—104°F) and for relative humidity range of 20—80%. To correct for pressure, multiply by

760

Atmospheric Pressure(mmHg)

**CALIBRATION AND ACCURACY:**

The Gastec detector tube No.3HM is carefully calibrated as an integral part of the manufacturing process. Calibration and accuracy test are performed by using combinations of sampling bag method and neutral titration method.

**DETECTION PRINCIPLE:**

Ammonia neutralizes sulfuric acid to discolor pH indicator to yellow.



**INTERFERENCES:**

<u>Interferent</u>	<u>Concentration</u>	<u>Result</u>	<u>Comment</u>
Amines other than aromatic amines		Plus error	Produce similar stain by itself.
Hydrazine, Pyridine		Plus error	Produce similar stain by themselves

**DANGEROUS AND HAZARDOUS PROPERTIES:**

Threshold Limit Value-Time Weighted Average by ACGIH(1992): 25 ppm(7—8 hours)  
Threshold Limit Value-Short Term Exposure Limit by ACGIH(1992): 35 ppm(15 min.)

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

Manufacturer: Gastec Corporation  
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93E-3HM-1  
Printed in Japan