

#101L

GASTEC

GASOLINE LOW RANGE DETECTOR TUBE

The Gastec Detector Tube No. 101L provides a rapid, fully quantitative analysis of the concentration of GASOLINE in air with a minimum accuracy of $\pm 25\%$ utilizing the Gastec Multi-Stroke Gas Sampling Pump.

PERFORMANCE:

Calibration Scale	30—1,000 ppm (based on 2 pump strokes)	
Measuring Range	30—1,000 ppm	1,000—2,000 ppm
Number of Pump Stroke	2	1
Correction Factor	1	2
Detecting Limit*	5 ppm	—
Sampling Time	2 minutes per pump stroke	
Color Change	Brownish Yellow—Dark Green	

*Minimum detectable concentration

SHELF LIFE:

Please refer to the term of validity on a Tube Box Label.

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 until staining stops. Repeat this sampling procedure one more time without removing the tube. For 2 pump stroke (200 ml) sampling, 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.
5. Read concentration at the interface of the stained-to-unstained reagent when staining stops after completion of 2 pump stroke (200 ml) sampling.
6. If the stain exceeds the highest calibration mark after 2 pump stroke sampling, use 1 pump stroke. Obtain true concentration by doubling the tube reading.

CORRECTION FOR TEMPERATURE, HUMIDITY AND PRESSURE:

Calibration of the Gastec detector tube No. 101L 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°—40°C (32°—104°F). Moisture in the sample is controlled in the prelayer, therefore, does not affect accurate tube readings. Tube reading is proportional to absolute pressure. To correct the tube reading for pressure, multiply by

760

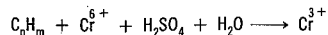
Atmospheric Pressure (mmHg)

CALIBRATION AND ACCURACY:

The Gastec detector tube No. 101L 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 gas chromatographic technique.

DETECTION PRINCIPLE:

Hydrocarbons reduce chromic acid to form chromic sulfate, which is dark green in color.



INTERFERENCES:

Substance	Concentration	Interference	Changes color by itself to
Acetylene, Alcohols		+	Dark green
Aromatic hydrocarbons		+	
Esters, Ethers		+	
Hydrogen sulfide		+	
Organic solvents ($\geq C_3$)		+	Green
Sulfur dioxide		+	

Water vapor is trapped in the pretreatment (pale brown) layer.

DANGEROUS AND HAZARDOUS PROPERTIES:

Threshold Limit Value-Time Weighted Average by ACGIH (1993): 300 ppm (7—8 hours)

Threshold Limit Value-Short Term Exposure Limit by ACGIH (1993): 500 ppm (15 minutes)

Explosive range in air: 1.4—7.6%

APPLICATION FOR OTHER SUBSTANCES:

Substance	Correction	No. of pump strokes	Measuring range
Allyl chloride	Factor: 34	1/2	0.1 to 3.4 %
Heptane	Factor: 1.0	1 or 2	30 to 2000 ppm
Isobutene	Factor: 22	1	0.07 to 2.2 %

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. A correction factor is a figure which is multiplied by the concentration interpreted from the color starting on the detector tube. The correction may also be presented as a chart on tube if the correction relationship is nonlinear. Therefore, please make use of the correction factor/chart measuring ranges as a reference. Moreover, this factor may vary slightly between production batches. For a more precise factor please contact your Gastec distributor.

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

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