

# 121SP

**GASTEC  
BENZENE DETECTOR TUBE  
IN THE MIXTURE OF OTHER HYDROCARBONS**

The Gastec Detector Tube No. 121SP provides a rapid, fully quantitative analysis of the concentration of BENZENE in the mixture of other hydrocarbons with an accuracy tolerance of  $\pm 25\%$  utilizing the Gastec Multi-Stroke Gas Sampling Pump.

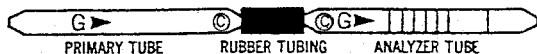
**PERFORMANCE :**

Calibration Scale	0.5—10 ppm (based on 3 pump strokes)
Measuring Range	0.5—10 ppm
Number of Pump Strokes	3
Correction Factor	1
Detecting Limit*	0.2 ppm
Sampling Time	90 seconds per pump stroke
Color Change	White—Brown

\*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 primary tube and analyzer tube by bending each tube end in the tube tip breaker of the pump.
2. Connect the ends of the primary and analyzer tubes, marked with ©, using a rubber tubing supplied. 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 90 seconds and unlock the handle by making 1/4 turn in either direction to return it to the starting position. Repeat this sampling procedure 2 more times without removing the tube. 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.
5. Read concentration at the interface of the stained-to-unstained reagent after completion of 3 pump stroke (300 ml) sampling.

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

Calibration of the Gastec detector tube No. 121SP 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 temperature of 0—40°C (32—104°F) and relative humidity range of 0—90%. Tube reading is proportional to absolute pressure. To correct for pressure, multiply by

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

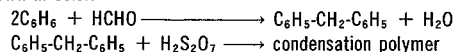
Atmospheric Pressure (mmHg)

**CALIBRATION AND ACCURACY :**

The Gastec detector tube No. 121SP 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 :**

Benzene reacts with formaldehyde to form a condensation polymer which is brown in color.

**INTERFERENCES :**

Substance	Concentration	Interference	Changes color by itself to
Formaldehyde		+	Brown
Hexane	≤ 500 ppm	No	} No
Toluene	≤ 100 ppm	No	
Xylene	≤ 100 ppm	No	

Aromatic hydrocarbons other than benzene are trapped in the white layer in the pretreatment tube. If the pretreatment reagent is entirely consumed (whole white layer turns to brown), a higher reading will be given.

**DANGEROUS AND HAZARDOUS PROPERTIES :**

Threshold Limit Value-Time Weighted Average by ACGIH (1996): 10 ppm (7—8 hours)

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

Manufacturer: Gastec Corporation  
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971-121SP  
Printed in Japan