

GASTEC Instructions for No.112L Ethyl Alcohol Low Range Detector Tube

FOR SAFE OPERATION :

Read this manual and the instruction manual of your Gastec Gas Sampling Pump carefully.

**▲ WARNING: Use only Gastec detector tubes in a Gastec Pump.
Do not interchange or use non-Gastec parts or components
in Gastec's detector tube and pump system.**

The use of non-Gastec parts or components in Gastec's detector tube and pump system or use of a non-Gastec detector tube with a Gastec pump or use of a Gastec detector tube with a non-Gastec pump may result in property damage, serious bodily injury, and death; voids all warranties; and voids all performance and data accuracy guaranties

▲ CAUTION : If not observed, injuries to the operator or damage to the product may result.

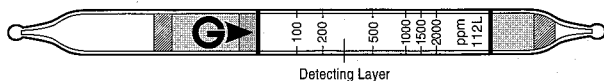
1. When breaking the tube ends, keep away from eyes.
2. Do not touch the broken glass tubes, pieces and reagent with bare hand(s).
3. The sampling time represents the time necessary to draw the air sample through the tube. The tube must be positioned in the desired sampling area for the entire sampling time or until the flow finish indicator indicates the end of the sample.

△ NOTES : For maintaining performance and reliability of the test result

1. Use Gastec Gas Sampling Pump together with Gastec Detector Tubes only for the purposes specified in the instruction manual of the detector tube.
2. Use this tube within the temperature range of 0 - 40°C (32 - 104°F).
3. Use this tube within the relative humidity range of 20 - 90%.
4. This tube may be interfered by the coexisting gases. Please refer to the "INTERFERENCES".
5. Shelf life and storage conditions of the tube are marked on the label of the box of tube.

APPLICATION OF THE TUBE : Use of this tube for the detection of Ethyl Alcohol in air or the industrial areas and environmental atmospheric condition.

SPECIFICATION : (As a result of Gastec's commitment to continued improvement, specifications are subject to change without notice.)



Measuring Range	5 - 100 ppm	100 - 2,000 ppm
Number of Pump Strokes	2	1
Correction Factor	1/2	1
Sampling Time	3 minutes per pump stroke	
Detecting Limit	5 ppm (n = 2)	
Color Change	Pink - Pale blue	
Reaction Principle	Ethyl alcohol reduces potassium dichromate to from chromic sulfate which is blue in color. $C_2H_5OH + K_2Cr_2O_7 + H_2SO_4 \rightarrow Cr_2(SO_4)_3$	

- ** Shelf Life : Please refer to the Validity Date printed on the box of tube.
- ** Store the tubes under dark and cool place.

CORRECTION FOR TEMPERATURE, HUMIDITY AND PRESSURE :

Calibration of the Gastec detector Tube No.112L 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.

(1) Temperature :

Tube Reading (ppm)	Temperature correction					
	0°C (32°F)	5°C (41°F)	10°C (50°F)	20°C (68°F)	30°C (86°F)	40°C (104°F)
2,000	6,800	5,200	4,000	2,000	1,000	600
1,500	6,000	4,600	3,400	1,500	800	500
1,000	4,900	3,600	2,600	1,000	550	400
500	3,400	2,200	1,300	500	350	300
200	1,200	500	300	200	160	140
100	220	100	120	100	80	60

(2) Humidity : Humidity Correction is required for relative humidity range of 20 - 90%.

(3) Pressure : To correct for pressure, multiply the tube reading by

$$\frac{\text{Tube Reading (ppm)} \times 1013 \text{ (hPa)}}{\text{Atmospheric Pressure (hPa)}}$$

MEASUREMENT PROCEDURE :

1. For leak checking of the pump insert a fresh sealed detector tube into pump. Follow instructions provided with the pump operating manual.
2. Break tips off a fresh detector tube in the tube tip breaker of the pump.
3. Insert the tube into the pump inlet with arrow **G** on the tube pointing toward pump.
4. Make certain pump handle is all the way in. Align guide marks on pump body and handle.
5. Pull handle all the way out until it locks on 1 pump stroke (100ml). Wait 3 minutes.
6. For lower than 100 ppm measurement, repeat the above sampling procedure one more time.
7. Read concentration at the interface of the stained-to-unstained reagent.
8. If atmospheric correction is needed, refer to the "Correction for Pressure".

INTERFERENCES :

Substance	Concentration	Interference	Change color by itself
Alcohols		Plus error	Produce similar stain by themselves

DANGEROUS AND HAZARDOUS PROPERTIES :

Threshold Limit Value-Time Weighted Average by ACGIH (2000) : 1,000 ppm
Explosive range in air : 4.3 - 19%

DISPOSAL INSTRUCTION : Reagent of the tubes use chromic acid. On disposing the tube regardless of used or unused, follow the rules and regulations of the local government.

WARRANTY : If you have any questions regarding gas detection and quality of the tubes, please feel free to contact your Gastec representatives.

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