

# GASTEC Instructions for No.141L Ethyl Acetate Detector Tube

## FOR SAFE OPERATION :

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

### ⚠ WARNING :

1. Use only Gastec detector tubes in a Gastec Pump.
2. Do not interchange or use non-Gastec parts or components in Gastec's detector tube and pump system.
3. 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.

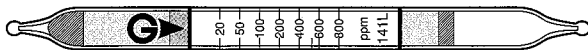
1. When breaking the tube ends, keep away from eyes.
2. Do not touch the broken glass tubes, pieces and reagent with bare hand(s).

### △ NOTES : For maintaining performance and reliability to 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 under the temperature range of 5 - 40°C (41 - 104°F).
3. Use this tube under the relative humidity range of 0 - 90%.
4. This tube may be interfered with by the coexisting gases. Please refer to the "INTERFERENCES".
5. Shelf life and storage condition of the tube is marked on the label of the box of tube.

**APPLICATION OF THE TUBE :** Use this tube for the detection of Ethyl Acetate for 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	20 - 800 ppm
Number of Pump Strokes	2
Correction Factor	1
Sampling Time	3 minutes per pump stroke
Detecting Limit	5 ppm ( n = 2 )
Color Change	Yellow → Blackish brown → Pale blue after few minutes
Reaction Principle	$\text{CH}_3\text{CO}_2\text{C}_2\text{H}_5 + \text{Cr}^{6+} + \text{H}_2\text{SO}_4 \rightarrow \text{Cr}^{3+}$

**Coefficient of Variation: 15% (for 20 to 20ppm), 10% (for 200 to 800ppm)**

**\*\* Shelf Life : Please refer to the Validity Date printed on the box of tube.**

**\*\* Store the tubes in the dark and cool place.**

## CORRECTION FOR TEMPERATURE, HUMIDITY AND PRESSURE

**Temperature :** Correct for temperature by the table below:

Tube Reading (ppm)	True concentration (ppm)							
	5°C (41°F)	10°C (50°F)	15°C (59°F)	20°C (68°F)	25°C (77°F)	30°C (86°F)	35°C (95°F)	40°C (104°F)
800	3000	1700	1100	800	700	600	530	450
600	2300	1300	800	600	500	400	350	300
400	1500	800	500	400	350	300	250	200
200	600	400	260	200	180	160	140	120
100	230	180	130	100	90	80	70	60
50	120	80	60	50	45	40	35	30
20	45	35	25	20	18	16	16	16

**Humidity :** No correction is required.  
**Pressure :** To correct for pressure, multiply by the tube reading by  

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

## MEASUREMENT PROCEDURE :

1. For leak tight check of the pump insert a fresh sealed detector tube into pump. Follow instructions provided with the pump operation manual.
2. Break tips off a fresh detector tube in the tube tip breaker of the pump.
3. Insert the tube securely into 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 minute and confirm the completion of the sampling. Repeat the above sampling procedure one more time.
6. Read concentration at the interface of the stained-to-unstained reagent.
7. If correction is needed, multiply the correction factors of temperature and pressure.

## INTERFERENCES :

Substance	Interference	Changes color by itself to
Alcohols	+	Greenish brown
Ketones	+	Greenish brown
Esters	+	Greenish brown
Aromatic HCs	+	Greenish brown

## Water vapor is trapped in the pretreatment (white) layer.

The table of this interference gases primarily expresses the interference of each coexisting gas in the gas concentration range, equivalent to the gas concentration. Therefore, the test result may be given positive result by the other substances not listed in the table. For more information is needed, please contact us or our distributors in your territory.

## APPLICATION FOR OTHER SUBSTANCES :

Tube 141L can also be used for other substances as below:

Substance	Correction Factor	No. of Pump Strokes	Measuring Range
Ethyl acrylate	0.4	2	8.0~320
Methyl acrylate	0.4	2	8.0~320
Isopropyl ether	0.9	2	18~720
Diisopropyl toluene	0.5	1/2	10~400
Diisopropyl benzene	0.5	1/2	10~400
Cymene	0.28	2	5.6~224
2 - Hexyl alcohol	3.0	3	60~2400
Mesityl oxide	1.35	2	27~1080

## 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. Therefore, please make use of the correction factor/chart measuring ranges as a reference. For more precise factor please contact your Gastec distributor.

## DANGEROUS AND HAZARDOUS PROPERTIES :

Threshold Limit Value - Time Weighted Average by ACGIH (2004) : 400 ppm  
 Explosive Range : 2 - 11.5%

## DISPOSAL INSTRUCTION

This tube contains 0.34 mg of hexavalent chromium. When disposing of 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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