

GASTEC Instructions for No.146 Isopropyl Acetate Detector Tube

FOR SAFE OPERATION :

Carefully read this manual and the instruction manual of your Gastec Gas Sampling Pump.

⚠ 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 you do not observe the following precautions, you may suffer injuries or damage to the product.

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 results, observe the following.

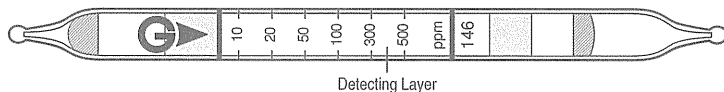
1. Use Gastec Gas Sampling Pump together with Gastec Detector Tubes only for the purposes specified in the instruction manual of the detector tube.
2. Use this tube within the temperature range of 0 - 40°C (32 - 104°F).
3. Use this tube within the relative humidity range of 0 - 90%. (When the dehumidifying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

APPLICATION OF THE TUBE :

Use this tube for the detection of Isopropyl acetate in air or the industrial areas and environmental atmospheric condition.

SPECIFICATION :

(Because of Gastec's commitment to continued improvement, specifications are subject to change without notice)



Measuring Range	10 – 500 ppm
Number of Pump Strokes	2
Correction Factor	1
Sampling Time	1.5 minutes per pump stroke
Detecting Limit	4 ppm (n=2)
Colour Change	Yellow → Blackish brown
Reaction Principle	$\text{CH}_3\text{CO}_2\text{CH}(\text{CH}_3)_2 + \text{Cr}^{6+} + \text{H}_2\text{SO}_4 \rightarrow \text{Cr}^{3+}$

Coefficient of Variation : 10% (for 10 to 500 ppm)

****Shelf Life : Please refer to the validity date printed on the tube box.**

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

CORRECTION FOR TEMPERATURE, HUMIDITY AND PRESSURE :

Temperature : Correct for temperature by the table below :

Temperature °C (°F)	0 (32)	5 (41)	10 (50)	15 (59)	20 (68)	25 (77)	30 (86)	35 (95)	40 (104)
Correction Factor	2.73	1.88	1.48	1.15	1.00	0.82*	0.62*	0.47*	0.36*

*If the value of the Tube Reading multiplied by the Temperature Correction Factor is less than 10 ppm a measurement cannot be performed.

Humidity : No correction is required between 0 - 90% R.H.

Pressure : To correct for pressure, use the formula below

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

* This value is after other correction(s), if any are applied.

MEASUREMENT PROCEDURE :

1. For checking the leakage of the pump, insert a fresh sealed detector tube into the pump. Follow instructions provided with the pump operating manual.
2. Break tips off a fresh detector tube with the tube tip breaker of the pump.
3. Insert the tube into the pump inlet with arrow (➤) on the tube pointing toward pump.
4. Make certain the pump handle is all the way in. Align the guide mark on the pump body with the guide mark on the handle.
5. Pull handle all the way out until it locks at one pump stroke (100 mL). Wait 1.5 minutes and confirm the completion of sampling. Repeat the above sampling procedure one more time.
6. Read concentration level at the interface where the stained reagent meets the unstained reagent.
7. If temperature correction is necessary, obtain the true concentration by using the temperature correction factor.
8. If pressure correction is necessary, use the pressure correction formula.

INTERFERENCES :

Substance	Interference	Changes colour by itself to
Alcohols (methanol)	+	Pale blue (≥ 5 ppm)
Ketones (acetone)	+	Blackish brown (≥ 10 ppm)
Esters (methyl acetate)	+	No stain observed immediately. A blackish brown colour observed later (≥ 30 ppm).

This table of interference gases primarily expresses the interference of each coexisting gas in the gas concentration range, that is 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 Gastec representatives.

DANGEROUS AND HAZARDOUS PROPERTIES :

Threshold Limit Value-Time Weighted Average by ACGIH (2020) : 100 ppm

Threshold Limit Value-Short Term Exposure Limit by ACGIH (2020) : 150 ppm

INSTRUCTIONS ON DISPOSAL :

The reagent of the tube uses a small amount of hexavalent chromium. When disposing the tube regardless of whether it has been used or not, follow the rules and regulations of your 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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