

GASTEC Instructions for No.116 Isobutyl Alcohol 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 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.

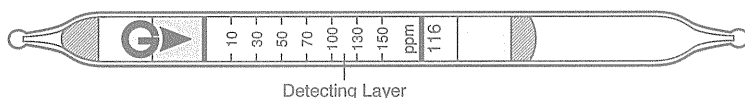
1. Use Gastec Gas Sampling Pump together with Gastec Detector Tubes only for the purposes specified in the instruction manual of the detector tube.
2. Use this tube within the temperature range of 0 – 40°C (32 - 104°F).
3. Use this tube within the relative humidity range of 0 - 90%.
4. This tube may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

APPLICATION OF THE TUBE :

Use this tube for detecting Isobutyl alcohol in the air or in industrial areas and for determining the environmental atmospheric condition.

SPECIFICATION :

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



Measuring Range	3.7 – 10 ppm	10 – 150 ppm
Number of Pump Strokes	4	2
Stroke Correction Factor	0.37	1
Sampling Time	2 minutes per pump stroke	
Detecting Limit	3 ppm (n=4)	
Colour Change	Yellow → Pale blue	
Reaction Principle	$(CH_3)_2CHCH_2OH + Cr^{6+} + H_3PO_4 \rightarrow Cr^{3+}$	

Coefficient of Variation : 15% (for 10 to 50 ppm), 10% (for 50 to 150 ppm)

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

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

CORRECTION FOR TEMPERATURE, HUMIDITY AND PRESSURE :

Temperature : Correct for temperature with the table below.

Tube Reading (ppm)	True Concentration (ppm)								
	0°C (32°F)	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)
150	–	–	–	–	150	128	90	84	74
130	–	–	–	400	130	111	81	75	67
100	–	–	520	200	100	85	67	62	56
70	–	600	250	120	70	60	52	47	43
50	600	250	120	75	50	43	41	37	34
30	150	80	50	35	30	28	26	25	24
10	15	14	13	12	10	9	9	9	8

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

Pressure : To correct for pressure, use the formula below.

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

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

MEASUREMENT PROCEDURE :

1. For checking the leakage of the pump, insert a freshly 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 the pump.
4. Make certain the pump handle is all the way in. Align the guide marks on the pump body with the guide marks on the handle.
5. Pull the handle all the way out until it locks at one pump stroke (100 mL). Wait two minutes and confirm the completion of the sampling. Repeat the above sampling procedure one more time.
6. For smaller measurements less than 10ppm, repeat the above sampling procedure two more times until the stain reaches the first calibration mark.
7. Read concentration level at the interface where the stained reagent meets the unstained reagent.
8. If temperature correction is necessary, obtain the true concentration by using the temperature correction table. Afterwards multiply the correction factor of pump stroke if necessary.
9. If pressure correction is necessary, use the pressure correction formula.

INTERFERENCES :

Substance	Interference	Changes colour by itself to
Alcohols	+	Pale blue

The table of this 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 (2021) : 50 ppm

Explosive range : 1.7 - 10.6%

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 unused, follow the rules and regulations of your local government.

WARRANTY :

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

Manufacturer : Gastec Corporation
8-8-6 Fukayanaka, Ayase-City, Kanagawa 252-1195, Japan
<https://www.gastec.co.jp/>
Telephone +81-467-79-3910 Facsimile +81-467-79-3979

IM00116E4
Printed in Japan
21C1Z