GASTEC No.230H Instructions for Methyl Iodide 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.

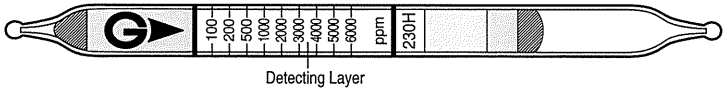
1. Use Gastec Gas Sampling Pump together with Gastec Detector Tubes only for the purposes specified in the instruction manual of the detector tube.
2. Use this tube within the temperature range of 0 - 40℃ (32 - 104℉).
3. Use this tube within the relative humidity range of 10 - 90%.
4. This tube may be 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.
6. By the effect of the ambient temperature, the reagent of the tube may be pale around the zero point. However, it does not affect the accuracy of the measurement.

APPLICATION OF THE TUBE :

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

SPECIFICATION :

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



Measuring Range	100 – 6000 ppm	6000 – 15000 ppm	15000 – 34800 ppm
Number of Pump Stroke	2	1	1/2
Correction Factor	1	2.5	5.8
Sampling Time	1.5 minutes per pump stroke		45 seconds
Detecting limit	5 ppm (n=2)		
Colour Change	White → Blackish brown		
Reaction Principle	$CH_3I + I_2O_5 \rightarrow I_2$		

Coefficient of Variation : 5% (for 100 to 6000 ppm)
****Shelf Life : Please refer to the validity date printed on the box of tube.**
****Store the tubes in the cool and dark place.**

CORRECTION FOR TEMPERATURE, HUMIDITY AND PRESSURE :

Temperature : Correct for temperature by the table below :

Tube Reading (ppm)	True Concentration (ppm)								
	0℃ (32℉)	5℃ (41℉)	10℃ (50℉)	15℃ (59℉)	20℃ (68℉)	25℃ (77℉)	30℃ (86℉)	35℃ (95℉)	40℃ (104℉)
100	170	150	130	120	100	80	65	50	45
200	350	300	260	230	200	170	130	100	90
500	850	750	650	580	500	420	340	260	230
1000	1700	1500	1300	1100	1000	850	700	540	470
2000	3000	2700	2500	2300	2000	1700	1500	1200	1000
3000	4000	3800	3600	3300	3000	2700	2300	2000	1600
4000	5100	4900	4600	4400	4000	3600	3200	2800	2300
5000	6200	5900	5600	5300	5000	4600	4300	3700	3000
6000	7200	6900	6600	6200	6000	5700	5400	4700	3700

Humidity : No correction is required

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 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 (G►) on the tube pointing toward pump.
4. Make certain the pump handle is all the way in. Align 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. For measurements higher than 6000 ppm, prepare a fresh tube and perform one or a half pump stroke.
7. Read concentration at the interface where the stained reagent meets the unstained reagent.
8. If necessary, correct Tube Reading for temperature with the table to have True Concentration.
9. If necessary, multiply the readings by the correction factors of pump strokes and atmospheric pressure respectively.

INTERFERENCES :

Substance	Concentration	Interference	Changes colour by itself to
Carbon monoxide	≧ 20 ppm	+	Pale brown (pale green at the end of staining)
Carbon dioxide		No	No discolouration
Ethylene		+	Pale yellow
Hexane		+	Pale orange

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 our Gastec representatives.

DANGEROUS AND HAZARDOUS PROPERTIES :

Threshold Limit Value-Time Weighted Average by ACGIH : (2015) : 2 ppm.

INSTRUCTIONS ON DISPOSAL :

The reagent of the tube uses a small amount of selenium and 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.

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

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