

GASTEC Instructions for No.40 Mercury Vapour Gas 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. Using non-Gastec parts or components in Gastec's detector tube and pump system or using a non-Gastec detector tube with a Gastec pump or using a Gastec detector tube with a non-Gastec pump may damage your detector tube and pump system, or may cause serious injuries, or death to the end-user. It will also void all warranties, and guarantees regarding performance and data accuracy.

⚠ 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 sampling.

△ NOTES : For maintaining performance and reliability to the test results.

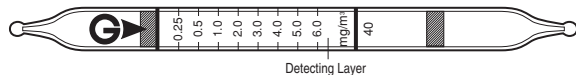
1. Use Gastec Gas Sampling Pump together with Gastec Detector Tubes only for the purposes specified in the instruction manual of the detector tube.
2. Use this tube within the temperature range of 0 - 40°C (32 - 104°F).
3. Use this tube within the relative humidity range of 0 - 90%.
4. This tube may be interfered with by the coexisting gases. Please refer to the "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 the detection of Mercury in air or 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	0.05 - 0.25 mg/m ³	0.25 - 6.0 mg/m ³	6.0 - 13.2 mg/m ³
Number of Pump Strokes	5	1	1/2
Correction Factor	1/5	1	2.2
Sampling Time	1.5 minutes per pump stroke		45 seconds
Detecting Limit	0.01 mg/m ³ (n = 5)		
Colour Change	White → Pale orange		
Reaction Principle	Hg + Cu ₂ Cl ₂ → Cu ₂ (HgCl ₄) + 2Cu		

Coefficient of Variation : 10% (for 0.25 to 2 mg/m³), 5% (for 2 to 6 mg/m³)

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

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

CORRECTION FOR TEMPERATURE, HUMIDITY AND PRESSURE :

Temperature : No correction is required.

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 freshly sealed detector tube into pump.
Follow instructions provided with the pump operating manual.
2. Break tips off a fresh detector tube with the tube tip breaker in the pump.
3. Insert the tube into the pump inlet with arrow 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 the handle all the way out until it locks on one pump stroke (100 mL). Wait 1.5 minutes and confirm the completion of the sampling. Repeat the above sampling procedure four more times.
6. For smaller measurements less than 0.25 mg/m³, repeat the above sampling procedure four more times. For measurements higher than 6.0 mg/m³, prepare a fresh tube and perform a half pump stroke.
7. Read concentration at the interface of the stained-to-unstained reagent.
8. If necessary, multiply the correction factors of pump strokes and atmospheric pressure respectively.

INTERFERENCES :

Substance	Interference	Interference gas only
Chlorine	+	Pale orange
Nitrogen dioxide	+	Pale orange
Hydrogen sulphide	+	Pale orange for whole layer

This table interference gases primarily expresses the interference of each coexisting gas in the concentration range, that is equivalent to the gas concentration. Therefore, the test result may show positive results due to other substances not listed in the table. If more information is needed, please contact us or our distributors in your territory.

DANGEROUS AND HAZARDOUS PROPERTIES :

Threshold Limit Value - Time Weighted Average by ACGIH (2009) : 0.025 mg/m³

DISPOSAL INSTRUCTION :

Reagent of the tube dose not use toxic substances. When disposing the tube regardless of whether 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.

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

IM0040E1
Printed in Japan
09K1Z