

# GASTEC No.16 Instructions for Phosgene Detector Tube

## FOR SAFE OPERATION :

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

**⚠ 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 of 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 within the temperature range of 0 - 40°C (32 - 104°F).

3. Use this tube within the relative humidity range of 20 - 80%.

4. This tube may be interfered by the coexisting gases. Please refer to the "INTERFERENCES".

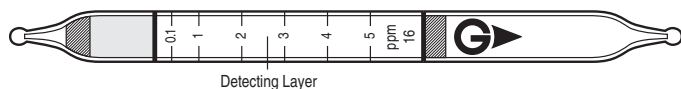
5. Shelf life and storage conditions of the tube are marked on the label of the box of tube.

## APPLICATION OF THE TUBE :

Use this tube for the detection of Phosgene in industrial areas and environmental atmospheric monitoring.

## SPECIFICATION :

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



Measuring Range	0.05 - 0.1 ppm	0.1 - 5 ppm	5 - 20 ppm
Number of Pump Strokes	10	5	1
Correction Factor	1/2	1	4
Sampling Time	1 minute per pump stroke		
Detecting Limit	0.01 ppm ( n = 10 )		
Color Change	White → Yellow		
Reaction Principle	$\text{COCl}_2 + (\text{CH}_3)_2\text{NC}_6\text{H}_4\text{CHO} \rightarrow (\text{CH}_3)_2\text{NC}_6\text{H}_4\text{CHCl}_2 + \text{CO}_2$ $(\text{CH}_3)_2\text{NC}_6\text{H}_4\text{CHCl}_2 + (\text{C}_6\text{H}_5)_2\text{NH} \rightarrow \text{Reaction Product}$		

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

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

## CORRECTION FOR TEMPERATURE, HUMIDITY AND PRESSURE :

**Temperature :** To correct for temperature multiply the following correction factor.

Temperature	°C	0	10	20	30	40
	(°F)	32	50	68	86	104
Correction Factor		1.8	1.3	1.0	0.95	0.9

**Humidity :** Humidity correction is not 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 leak checking the pump insert a fresh sealed detector tube into pump. Follow instructions provided with the pump operating 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 1.5 minute. Repeat the above sampling procedure 4 more times.

6. Read concentration at the interface of the stained-to-unstained reagent.

7. For detecting less than 0.1 ppm repeat the above sampling procedure 4 and 5 for 5 more times.

8. If atmospheric correction is needed, refer to the "Corrections for Temperature, Humidity and Pressure".

## INTERFERENCES :

Substance	Concentration	Interference	Change color by itself
Hydrogen chloride	1/10 time or higher	Plus error	Produces yellow discoloration
Chlorine	1/2 times or higher	Plus error	Produces yellow discoloration
Nitrogen dioxide	1/5 times or higher	Plus error	Produces yellow discoloration

## DANGEROUS AND HAZARDOUS PROPERTIES :

Threshold Limit Value-Time Weighted Average by ACGIH (1998): 0.1 ppm (7-8 hours)

## DISPOSAL INSTRUCTION :

Reagent of the tube does not use toxic substances. On 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.

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