GASTEC
No.108

Instructions for Qualitative Detector Tube for Fire Investigation

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 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, broken 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 of the test results, observe the following.

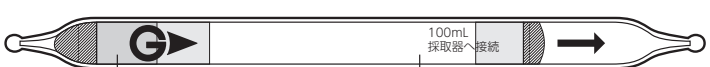
1. Use Gastec Gas Sampling Pump together with Gastec Detector Tubes only for the purposes specified in the instruction manual of the detector tube.
2. Use this tube within the temperature range of 0 - 40℃ (32 – 104℉).
3. Use this tube within the relative humidity range of 0 – 90%
4. This tube may be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

APPLICATION OF THE TUBE :

Use this tube for the qualitative analysis of Kerosene and Gasoline for fire investigation.

SPECIFICATION :

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



Number of Pump Stroke	1		
Sampling Time	45 sec. per pump stroke		
Colour Change	Kerosene	Low concentration	White → Brown (inlet) and Yellowish brown
		High concentration	White → Brown (inlet) and Pale brown
		Delayed colour change	Yellowish brown part of low concentration and pale brown part of high concentration turns to Pale pink.
	Gasoline	Low concentration	White → Brown
		High concentration	White → Yellow (inlet) and Brown
Reaction Principle	$C_nH_{2n+2} + I_2O_5 + H_2SO_4 \rightarrow I_2$		

****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 : No correction is required.

Humidity : No correction is required.

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 (G►) on the tube pointing toward the pump.
4. Bring the tip of detector tube to a sample (burned material) as close as possible.
5. 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.
6. Pull the handle all the way out until it locks at one pump stroke (100 mL). Wait 45 seconds and confirm the completion of the sampling.
   If discolouration is not seen, repeat the above sampling procedure one more time. (If three or more pump strokes are taken, the distinction between Kerosene and Gasoline may become impossible.)
7. After the sampling, the colour stain indicates the existence of the substance(s) shown in the table below.
8. Take off the tube from the pump. Push back and pull the handle of the pump a few times to discharge Kerosene or Gasoline vapour in the cylinder.

<Recommendation>

When measuring outdoors, it may be largely affected by wind, and the qualitative analysis of Kerosene and Gasoline may be impossible. In order to improve the accuracy, seal the sample (burned material) in an air-tight bag and leave it at room-temperature (>15°C) for over 30 minutes before measurement. Please note the concentration will decrease if the sample in the bag left for 24 hours or more.

INTERFERENCES :

Substance	Interference gas only
Diesel fuel	Same colour change of Kerosene
Lubricating oil	No discolouration. However, if the oil contains Kerosene, the tube will show colour change similar to Kerosene.
Cooking oil	No discolouration
Toluene	Brown
Xylene	Brown
Ethyl Benzene	Brown
Plastics product	No discolouration before and after burning

This table of 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.

INSTRUCTIONS ON DISPOSAL :

The reagent of the tube does not use toxic substance. 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 the quality of the tubes, please feel free to contact your Gastec representatives.

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