

GASTEC Instructions for No.211M Sulphide Ion Detector Tube

FOR SAFE OPERATION :

Read this instruction manual carefully prior to use.

⚠ 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.

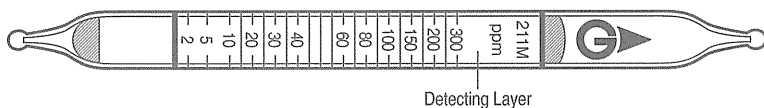
1. Use this tube under the temperature range of 0 - 40°C(32 - 104°F) in water.
2. Use this tube between pH values of 4.0 to 12.
3. This tube may be interfered by the coexisting substances. Refer to the "INTERFERENCES".
4. Shelf life and storage condition of the tube is marked on the label of the box of tube.
5. Place the higher end plug packing of the tubes above the water surface.

APPLICATION OF THE TUBE :

Use of this tube for the detection of Sulphide Ion in the Waste or other Waters.

SPECIFICATION :

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



Measuring Range	2 - 300 ppm
Sampling Time	2 minutes
Detecting Limit	0.5 ppm
Colour Change	White → Brown
Reaction Formula	$S^{2-} + Pb(CH_3COO)_2 \rightarrow PbS$

Coefficient of Variation : 10% (for 2 to 50 ppm), 5% (for 50 to 300 ppm)

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

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

EFFECT BY ATMOSPHERIC CONDITION :

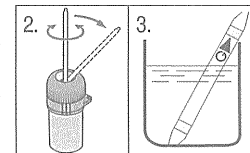
Temperature : No effect by the water temperature between 0 - 40°C(32 - 104°F).

pH Value : Use the tube in the pH value of 4.0 - 12.0.

MEASUREMENT PROCEDURE :

1. Take sample water into an approximately 100 mL capacity of dry, clean beaker.
2. Break tips off a fresh detector tube by bending each tube end in the tube tip holder (optional).

3. Immerse the filled end of the tube into the sample water as illustrated below. Capillary action occurs and the sample water instantly rises through the reagent. If the sample contains sulphide ion, the white reagent in the tube turns to brown colour.
4. When the sample water rises up to the upper end plug, remove the tube from beaker.
5. Read concentration at the interface of the stained-to unstained reagent.
6. If the stain exceeds the highest calibration mark (300 ppm), dilute the sample with pure water and retest using a fresh tube. Obtain true concentration by multiplying the tube reading by the dilution ratio.



$$\text{True Concentration} = \frac{V1 + V2}{V1} \times \text{Tube Reading}$$

V1 : Volume of Sample water

V2 : Volume of diluent (pure water)

△NOTES :

Do not immerse the tube into sample water past the upper end plug.

INTERFERENCES :

Substance	Formula	Concentration	Interference	Changes colour by itself to
Sulphite ion	SO_3^{2-}	≥ 200 ppm	—	No
Chloride ion	Cl^-	≥ 15000 ppm	+	No
Chromate ion	CrO_4^{2-}	≥ 50 ppm	—	Yellow
Carbonate ion	CO_3^{2-}	≥ 500 ppm	+	No
Thiosulfate ion	$S_2O_3^{2-}$	≥ 100 ppm	+	No

The table of these interference substances primarily expresses the interference of each coexisting substance in the concentration range, equivalent to the substance concentration. Therefore, the test result may be given positive result by the other substance not listed in the table. For more information is needed, please contact us or our distributors in your territory.

DISPOSAL INSTRUCTION :

Reagent of the tubes use a small amount of lead. When dispose of the tube regardless of used or unused, follow the rules and regulations of the local government.

WARRANTY :

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

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IM01211ME2
Printed in Japan
20J1Z