

GASTEC Instructions for No.291 Nickel 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 to the test results.

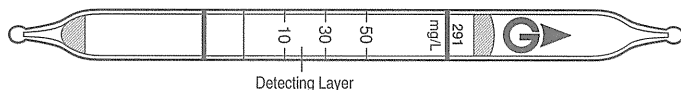
1. Use this tube under the temperature range of 5 - 30°C (41 - 86°F) in water.
2. Use this tube between pH values of 3.5 to 8.0.
3. This tube may be interfered with by the coexisting substances. Refer to the "INTERFERENCES".
4. Shelf life and storage condition of the tube is marked on the label of the box of tube.
5. Place the lower end plug packing of the tubes below the water surface.

APPLICATION OF THE TUBE :

Use this tube for the detection of Nickel in the Waste Water.

SPECIFICATION :

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



Measuring Range	(5) - 50 mg/L
Sampling Time	3 minutes
Detecting Limit	5 mg/L
Colour Change	White → Red
Reaction Formula	Nickel react with indicator to produce complex compound to discolour the reagent to red.

- ** Shelf Life : Please refer to the Validity Date printed on the box of tube.**
**** Store the tubes under dark and cool place.**

EFFECT BY ENVIRONMENTAL CONDITION :

Water Temperature : No effect by the water temperature between 5 - 30°C (41 - 86°F) .

pH Value : Use the tube in the pH value of 3.5-8.0.

MEASUREMENT PROCEDURE :

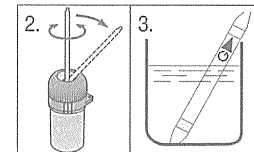
1. Take sample water into an approximately 100 mL capacity of dry, clean beaker.
2. Break tips off a fresh detector tube by bending each tube end in the tube tip breaker (tube tip holder No.722 optional extra).

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 nickel, the white reagent of the tube turns to red colour.
4. When the sample water rises up to the upper end plug, remove the tube.
5. Read concentration at the interface of the stained-to unstained reagent.
6. If the stain exceeds the highest calibration mark (50 mg/L), 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 Dilution (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
Zinc	Zn ²⁺	≧ 20 mg/L	—	No discolouration up to 1000 mg/L
Aluminum	Al ³⁺	≧ 30 mg/L	—	No discolouration up to 1000 mg/L
Cobalt	Co ²⁺	≧ 3 mg/L	+	Greenish brown at 20 mg/L or higher
Cyanide ion	CN ⁻	≧ 10 mg/L	—	No discolouration up to 100 mg/L
Iron (II)	Fe ²⁺	≧ 5 mg/L	+	Brown at 60 mg/L or higher
Iron (III)	Fe ³⁺	≧ 100 mg/L	—	No discolouration up to 1000 mg/L
Copper (II)	Cu ²⁺	≧ 5 mg/L	+	Reddish brown/Yellowish green at 50mg/L or higher

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 tube does not use the toxic substances. When disposing the tube regardless of 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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