



KYORITSU

PACKTEST

INSTRUCTIONS

# Total Nitrogen (Inorganic)

Model WAK-TN-i-3

Reduction and Indophenol Blue  
Visual Colorimetric MethodMain Reagent: Devarda Alloy, Chlorinating Agent  
and Sodium Salicylate

Measuring Range: N O - 100mg/L (ppm)

## How to Use

The diagram shows the following steps:

- ① Take 0.3mL of the sample into Cell (PACKTEST Square Cup) with Small Pipette.
- ② Add 1.5mL of K-1 Reagent with Large Pipette.
- ③ Add content of the K-2 Reagent (small tube).
- ④ Place the cap and shake the Cell for 30 sec.
- ⑤ Remove the cap and leave it stand for 15 min.
- ⑥ Remove the colored line at the top of the tube to clear the aperture.
- ⑦ Press the tube's side wall to expel the air, and hold the tube.
- ⑧ Immerse the aperture of the tube into the sample, release the finger to fill the tube halfway. Invert the tube back and forth lightly for 10 times.
- ⑨ Compare the actual color in the tube with Standard Color after 5 min.

## How to Read the Result

At the reaction time, compare the color of the tube with Standard Color. The nearest color indicates the concentration value of the analyte in your sample. A color between two standard colors indicates the value between them.

## Handling of PACKTEST Before and After Use

**K-1 Reagent and content of the tube is Strong Alkali. Hazardous when contacting with eyes.**

**First Aid** **Eye contact** → Immediately flush eyes with water for at least 15 minutes, followed by consult with Ophthalmologist, even without any symptom.

**Skin contact** → Immediately flush contacted area with water.

**Ingestion** → Immediately rinse mouth.

If swallowed the content or any symptom appears, seek medical advice immediately. Please refer to SDS for further information.

**Storage** Keep unused PACKTEST tubes in the provided preserving bag after opening the laminated package and use them as soon as possible. Depending on the storage condition, the reagent may deteriorate in several days especially under the hot and humid weather.

**Disposal** For business use, please follow in a manner consistent with relevant laws and regulations. Otherwise, the tube can be disposed as combustible waste.



**KYORITSU**  
CHEMICAL-CHECK Lab., Corp.

1-18-2 Hakusan, Midori-ku, Yokohama, Kanagawa  
226-0006, JAPAN E-mail:eng@kyoritsu-lab.co.jp

## PACKTEST Total Nitrogen (Inorganic)

### Feature

This product allows to measure total value of Nitrate-Nitrogen ( $\text{NO}_3^-$ -N), Nitrite-Nitrogen ( $\text{NO}_2^-$ -N), and Ammonium-Nitrogen ( $\text{NH}_4^+$ -N). It utilizes indophenol blue absorptiometry in JIS K 0102 42.2, after reducing Nitrate and Nitrite to Ammonium. It is suitable for measuring sample from septic tanks, industrial wastewater, and others with simple method.

### Caution

1. This product allows to measure total value of inorganic nitrogen, and not for measuring organic nitrogen.
2. The optimum pH upon reaction will be around 13. If the pH of the sample is below 4, please neutralize with dilute sodium hydroxide solution prior to measurement.
3. Using 1000mg/L standard solution, it develops color darker than 100mg/L on Standard Color. When the value is expected to be high, please dilute the sample prior to use.
4. Keep the sample temperature between 15-30°C.
5. Please rinse the small pipette with pure water or same sample for measurement prior to use.
6. Using measuring pipette instead of provided plastic pipette will provide better accuracy.
7. After adding K-2 reagent, reduction reaction will occur and sample will foam. Remove the cap from the cup to prevent a leak of strong alkaline solution while leave it stand for 15 min.
8. Ensure that the PACKTEST tube is filled up to half. If the tube cannot be filled at once, please shake the tube for 10 times, keep the aperture on top and press the tube again, and try drawing the sample into the tube. After taking the whole sample, invert the tube 2-3 times.
9. Undissolved K-2 Reagent may be left inside the Cell, but it will not affect the measurement.
10. Partially undissolved reagent will not affect the measurement upon color comparison.
11. When comparing to the Standard Color, please be sure to read under the daylight. It may be difficult to determine the color under the direct sunlight, certain florescent lights, mercury lamp or LED.
12. You can put the line back into the aperture to seal. This will avoid possibility of spilling the content of the tube.

### Interference

Standard Color is prepared based on the standard solution. If there are some coexisting substances that may cause interference, please compare the result with official method or standard addition method for verification. Below is the list of interference data for acceptable level by adding each of the single substances to the standard solution.

- ≤1000mg/L :  $\text{Al}^{3+}$ , B(III),  $\text{Ba}^{2+}$ ,  $\text{Cl}^-$ ,  $\text{F}^-$ ,  $\text{I}^-$ ,  $\text{K}^+$ ,  $\text{Mg}^{2+}$ ,  $\text{Na}^+$ ,  $\text{PO}_4^{3-}$ ,  $\text{SO}_4^{2-}$ , Anionic Surfactant, Residual Chlorine, Phenol
- ≤500mg/L :  $\text{Ca}^{2+}$
- ≤200mg/L :  $\text{Cu}^{2+}$
- ≤100mg/L :  $\text{Cr}^{3+}$ ,  $\text{Ni}^{2+}$ , Formaldehyde
- ≤50mg/L :  $\text{Co}^{2+}$ ,  $\text{Mn}^{2+}$ ,  $\text{Zn}^{2+}$
- ≤10mg/L :  $\text{CN}^-$ , Cr(VI),  $\text{Fe}^{3+}$
- ≤1mg/L :  $\text{Fe}^{2+}$

Seawater does not affect the result.

## **【Caution】**

- This product is made for analyzing water quality purpose only. Do not use for any other purpose.
  - This product contains small amount of chemicals. Please read instruction manual, GHS labels, SDS, and other necessary document thoroughly prior to use.
  - Please keep this information handy for future reference.
- <Safety>
- Please wash your hands thoroughly before and after the test. Do not inhale the chemical reagents.
    - It is highly recommended to wear protective gloves, eye protection, and mask upon using this product.
    - Avoid release chemical reagents or waste solution to the environment.
- <Storage>
- Please keep this product out of reach of children. Keep it in the dry and dark place at room temperature.
- <Other>
- Please check the expiration date shown on the box, and make sure to use within the date.
    - Specifications are subject to change without notice.



**KYORITSU**  
CHEMICAL-CHECK Lab., Corp.

1-18-2 Hakusan, Midori-ku, Yokohama, Kanagawa  
226-0006, JAPAN E-mail:eng@kyoritsu-lab.co.jp

2102