



KYORITSU

PACK TEST
ION SELECTIVE

INSTRUCTIONS

Nitrate

<Nitrate-Nitrogen>

Model WAK-NO₃

Naphthylethylenediamine Method

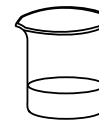
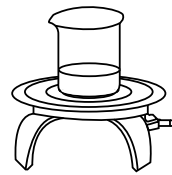
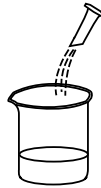
Main reagents: Zinc, Naphthylethylenediamine

Range: 1 - 45 mg NO₃⁻/L (ppm)0.2 - 10 mg NO₃⁻ - N/L (ppm)

How to use



Nitrite concentration must be checked before. We recommend to use the Nitrite PACK TEST, ref: WAK-NO₂ (optional). If the sample contains nitrite, the optional kit NO3-RA should be used.



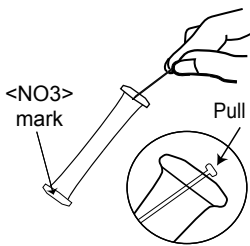
If the sample contains nitrite, start from the step (1) with the optional kit NO3-RA



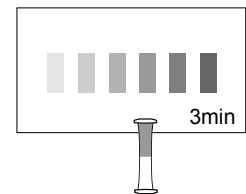
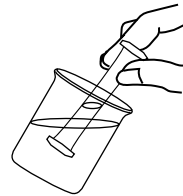
(1) Add one piece of Pretreatment Reagent for Nitrate ref: NO₃-RA (optional) to 30mL of sample.

(2) Heat the sample up to boiling for about 2 minutes.

(3) Cool down the beaker till the room temperature.



Pull out the line



If the sample does not contain nitrite, start from the step (4)



(4) Remove the line to clear the aperture from the top of the tube.

(5) Press the sides of the tube to expel approximately half of volume. Maintain pressed.

(6) Immerse the tube in the sample. Release the sides to fill the tube up to the half. Shake the tube lightly a few times.

(7) After 3 minutes, put the tube on the color chart as shown and compare with the standard colors.

How to read the test

After the reaction time, compare the color of the tube with the standard colors. The nearest color indicates the measured value of the sample. A color between two standard colors indicates a value between the two standard values. Both Nitrate or Nitrate-Nitrogen concentrations can be determined, according to your need.

Care in handling of Pack Test before and after use

- Keep PACK TEST out of the reach of children.
- Keep PACK TEST in a cool, dry and dark place.
- The PACK TEST tube must not be opened before and after use.
- Use a package as soon as possible after opening.
- PACK TEST should be thrown with burnable garbage. Conform to the legislation of waste management.

First Aid Measures

Eye Contact → Immediately rinse eyes with water for at least 15 minutes. Consult a physician.

Ingestion → Drink a large glass of milk or water and vomit.

Skin contact → Flush skin with water.

In case of doubt, consult a physician.

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PACK TEST Nitrate

Features

The Nitrate PACK TEST is based on a reduction by zinc and the naphthylethylenediamine color comparison method. It allows to measure easily nitrate ion (NO_3^-) concentrations in various samples like industrial waste water, environmental water, etc. For higher concentrations of nitrate, we recommend to use the Nitrate (High range) PACK TEST (90 - 4500 mg NO_3^-/L), ref: WAK-NO3

Cautions

1. The Nitrate PACK TEST allows to measure both nitrate (NO_3^-) and nitrate-nitrogen (NO_3^- -N) concentrations.
2. The normal pH range is 2 - 9. If necessary, adjust the pH with diluted sulfuric acid or sodium hydroxide solution. The best pH is between 6 and 7.
3. Ensure that PACK TEST tube is filled up to the half.
4. Partially undissolved reagent will not affect the measurement.
5. Keep sample temperature in the range 15°C - 40°C. Lower temperature necessitates longer reaction time.
6. Read the test under a daylight type lamp.
7. Put the line back into the aperture after use to prevent reagent spilt.

Interferences

Standard colors were determined from standard solutions. However, coexisting ions can modify reaction color. The list below reports ion concentrations under which ones interferences are insignificant:

≤ 1000 mg/L : Al^{3+} , B^{3+} , Ba^{2+} , Ca^{2+} , Cl^- , CN^- , F^- , Mg^{2+} , Mn^{2+} , Na^+ , NH_4^+ , PO_4^{3-} , SO_4^{2-} , Zn^{2+} , Phenol

≤ 250 mg/L : K^+

≤ 100 mg/L : Co^{2+} , Cr^{3+}

≤ 50 mg/L : Fe^{2+} , Ni^{2+}

≤ 20 mg/L : Fe^{3+}

≤ 5 mg/L : I^-

≤ 2 mg/L : Cd^{2+} , Residual Chlorine

≤ 1 mg/L : Cr^{6+}

sub-ppm level : Cu^{2+} , Hg^{2+} , NO_2^- , Sn^{2+} , Protein, Surfactant

A white precipitation occurs with a seawater sample. The color development is not complete, ranging from 50% to 100%, according to the brackish water concentration and composition.

Oxidative or reductive chemical could interfere with the reagent.