



KYORITSU

PACK TEST
ION SELECTIVE

INSTRUCTIONS

Metals

(Cu, Zn, Mn, Ni, Cd)

Model WAK-Me

By PAN color comparison Method

Main reagents: 1-(2-pyridylazo)-2-naphtol

Range: 0 - ≥ 5 mg/L (ppm)

How to use



- (1) Remove the line to clear the aperture from the top of the tube.
- (2) Press the sides of the tube to expel approximately half of volume. Maintain pressed.
- (3) Immerse the tube in the sample. Release the sides to fill the tube up to the half. Shake the tube 5-6 times.
- (4) After just 1 minute, 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.

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.

PACK TEST should be thrown with burnable garbage. Conform to the legislation of waste management.

Use a package as soon as possible after opening.

The PACK TEST tube must not be opened before and after use.

First Aid Measures

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

Skin contact → Immediately flush skin with water.

Ingestion → Immediately rinse mouth. Consult a physician.

In case of doubt, consult a physician.

**KYORITSU CHEMICAL-CHECK Lab., Corp.**37-11, DEN-ENCHOFU 5 CHOME, OHTA-KU, TOKYO 145-0071 JAPAN
FAX: 81-3-3721-0666 <http://kyoritsu-lab.co.jp>

PACK TEST **Metals(Cu, Zn, Mn, Ni, Cd)**

Features

The Metals(Cu, Zn, Mn, Ni, Cd) PACK TEST is based on the reaction between many metals and PAN, which forms red complexes. This PACK TEST measures the sum of Copper (Cu^{2+}), Zinc (Zn^{2+}), Manganese (Mn^{2+}), Nickel (Ni^{2+}), Cadmium (Cd^{2+}) concentration. Because this PACK TEST can detect all of these five metals at once, this PACK TEST is very effective for screening of environmental water, river water, tap water, industrial water and wastewater.

Cautions

1. The Metals(Cu, Zn, Mn, Ni, Cd) PACK TEST can measure the sum of Copper (Cu^{2+}), Zinc(Zn^{2+}), Manganese (Mn^{2+}), Nickel (Ni^{2+}), Cadmium (Cd^{2+}) concentration. This can not measure only one metal concentration in a sample containing plural metals.
2. Precipitated or chelated metal ions should be dissolved or released before measurement.
3. The normal pH range is 4 - 11. If necessary, adjust the pH with diluted sulfuric acid or sodium hydroxide solution.
4. Ensure that PACK TEST tube is filled up to the half. Larger or smaller sample volume will imply higher or lower value, respectively.
5. The reading of the test must be done exactly 1 minute after. Before the time, the color does not indicate right value.
6. Undissolved reagent does not affect the measurement.
7. Keep sample temperature in the range 15°C - 30°C .
8. Read the test under a daylight type lamp.
9. Put the line back into the aperture after use to prevent reagent spilt.

Interferences

Standard colors were determined from standard solutions. However, coexisting substances will cause inaccurate results. The list below reports substances concentrations under which ones interferences are insignificant:

- ≤ 1000 mg/L : Al^{3+} , B^{3+} , Ba^{2+} , Ca^{2+} , Cl^{-} , Cr^{6+} , F^{-} , I^{-} , K^{+} , Mg^{2+} , Mo^{6+} , Na^{+} , NH_4^{+} , NO_2^{-} , NO_3^{-} , PO_4^{3-} ,
 SO_4^{2-} , Phenol, Residual Chlorine, Anionic surfactant
- ≤ 500 mg/L : V^{5+}
- ≤ 50 mg/L : Fe^{3+} , Pb^{2+}
- ≤ 10 mg/L : Cr^{3+} , Fe^{2+}
- ≤ 1 mg/L : Ag^{+}
- Sub-ppm level : CN^{-} , Co^{2+}

The Metals(Cu, Zn, Mn, Ni, Cd) PACK TEST is suitable for sea water samples.