



KYORITSU

**PACK TEST**  
ION SELECTIVE

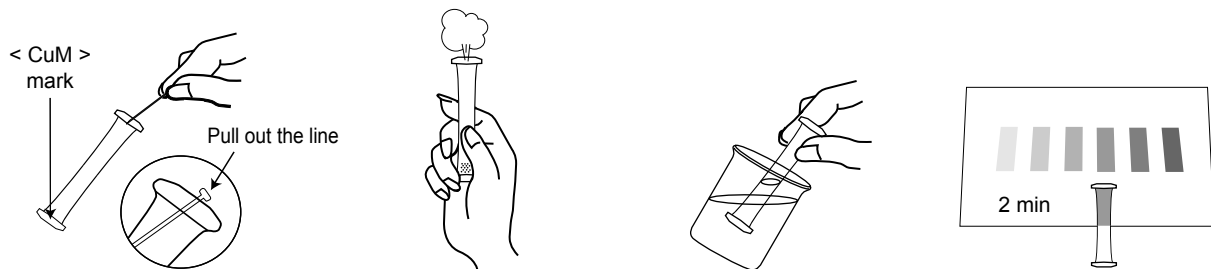
INSTRUCTIONS

# Copper (DDTC)

Model WAK-Cu(DDTC)

DDTC color comparison Method  
Main reagent: Sodium diethyl-dithio-carbamate  
Range: 0.5 - 10 mg Cu<sup>2+</sup>/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 lightly a few times.
- (4) After 2 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.

## 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.

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 Copper(DDTC)

### Features

The Copper (DDTC) PACK TEST uses the diethyl-dithio-carbamate method. The Cu PACK TEST is suitable for measurement of copper ion ( $\text{Cu}^{2+}$ ) concentration from various samples like industrial waste water, environmental water, etc.

### Cautions

1. The Copper PACK TEST allows to measure dissolved  $\text{Cu}^{2+}$  ion fraction. If you wish to measure total copper fraction including suspended particles, you must process samples in order to dissolve solid phases.
2. The normal pH range is 5 - 9. If necessary, adjust the pH with diluted sulfuric acid or sodium hydroxide solution.
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  $15^{\circ}\text{C}$  -  $40^{\circ}\text{C}$ . 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:

- $\leq 1000$  mg/L :  $\text{Al}^{3+}$ ,  $\text{As}^{3+}$ ,  $\text{B}^{3+}$ ,  $\text{Ba}^{2+}$ ,  $\text{Ca}^{2+}$ ,  $\text{Cd}^{2+}$ ,  $\text{Cl}^{-}$ ,  $\text{F}^{-}$ ,  $\text{I}^{-}$ ,  $\text{K}^{+}$ ,  $\text{Mg}^{2+}$ ,  $\text{Mn}^{2+}$ ,  $\text{Na}^{+}$ ,  $\text{NH}_4^{+}$ ,  $\text{NO}_2^{-}$ ,  
 $\text{NO}_3^{-}$ ,  $\text{Pb}^{2+}$ ,  $\text{PO}_4^{3-}$ ,  $\text{SO}_4^{2-}$ ,  $\text{Zn}^{2+}$ , Phenol
- $\leq 250$  mg/L : Residual chlorine
- $\leq 50$  mg/L :  $\text{Co}^{2+}$ ,  $\text{Cr}^{3+}$ ,  $\text{Fe}^{2+}$ ,  $\text{Fe}^{3+}$ ,  $\text{Sn}^{2+}$
- $\leq 25$  mg/L :  $\text{Ag}^{+}$
- $\leq 10$  mg/L :  $\text{Ni}^{2+}$
- $\leq 5$  mg/L :  $\text{CN}^{-}$ ,  $\text{Cr}^{6+}$

The Copper (DDTC) PACK TEST is suitable for sea water samples.