



KYORITSU

**PACK TEST**  
ION SELECTIVE

INSTRUCTIONS

**COD**

Model WAK-COD

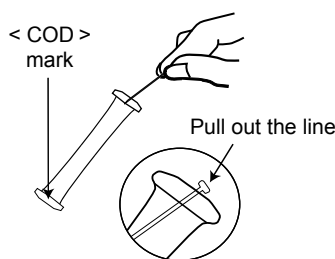


Harmful Corrosive

Oxidation by potassium permanganate  
in alkaline medium (at room temperature)

Main reagent: Potassium Permanganate

Range: 0 - 100 mg O / L(ppm)

**How to use**

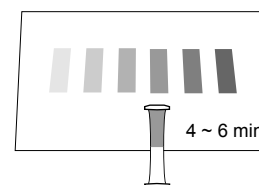
(1) Remove the line to clear the aperture from the top of the tube.



(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 a few times.



(4) After the reaction time (see back of the page), put the tube on the color chart as shown and compare with the standard colors.

**How to read the test**

The reaction time must be respected to get a right measurement. It depends on the temperature of the sample. After the specified time, compare the color of the tube with the standard colors. The nearest color indicates the chemical oxygen demand 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 reagent is a strong alkali. It is harmful and corrosive.

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

The PACK TEST reagent must not be spilt outside the tube after use.

**First Aid Measures**

Contains a strong alkali. It is harmful and corrosive. Risk of serious damage to eyes.

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.

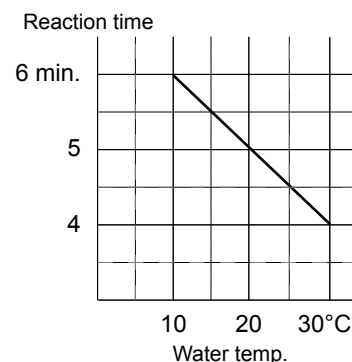
Skin contact → Flush skin with water.

In case of doubt, consult a physician.

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### Cautions

1. The sample temperature has a strong influence on reaction kinetic. Determine the reaction time from the graph on the right which shows water temperature versus reaction time.
2. Adjust a pH<5 up to neutrality with a diluted sodium hydroxide solution.
3. Ensure that PACK TEST tube is filled up to the half. Larger or smaller sample volume will imply higher or lower value, respectively.
4. Read the test under a daylight type lamp.
5. Clean up the sample container before and keep your hands clean. Unclean conditions may change values.
6. Put the line back into the aperture after use to prevent reagent spilt.
7. Reading in the range 50 - 100 mg/L is not precise. In this case, dilute the sample and carry out a new measurement.



### The COD PACK TEST methods

The potassium permanganate method (COD-Mn) is generally used for COD measurement in Japan, according to the standard procedure JIS K 0102 17 defined by the Japanese Industrial Standards Committee (see <http://www.jisc.go.jp/eng/index.html>). Kyoritsu COD PACK TEST is based on a different standard procedure, JIS K 0102 19, using an alkaline medium (COD-OH). Kyoritsu COD PACK TEST has been calibrated on potassium permanganate consumption in an alkaline medium at ambient temperature for a time depending on the temperature. This procedure presents the advantages to be fast and simple.

However, standard protocol uses glucose (dextroglucose) for standard solutions. The samples usually contain different components and the oxidation kinetic and ratio may differ of from standards.

### Sea water sample

The COD measurement can be done in sea water sample up to 20 mg/L. Beyond, the color is faded and the sample must be diluted.