



KYORITSU

**PACKTEST**  
ION SELECTIVE

INSTRUCTIONS

# Iron

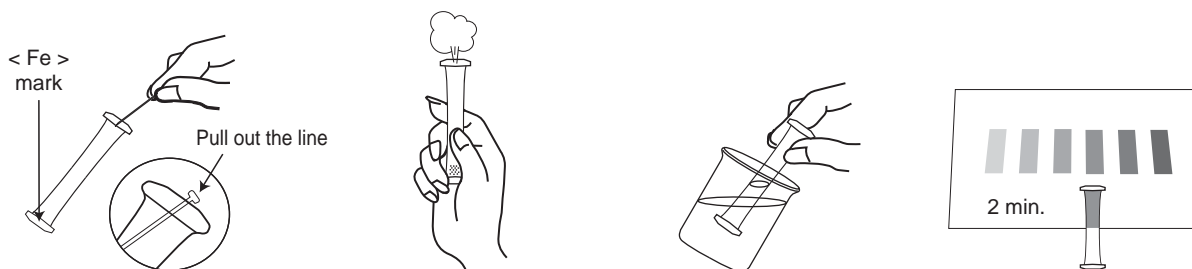
Model WAK-Fe

Reduction and o-Phenanthroline color comparison Method

Main reagent : o-Phenanthroline

Range: Fe 0.2 - 10 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 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 PACKTEST before and after use

Keep PACKTEST out of the reach of children.

Keep PACKTEST in a cool, dry and dark place.

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

Use a package as soon as possible after opening.

The PACKTEST 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>

## PACKTEST Iron

### Features

The Iron PACKTEST is based on a reduction of  $\text{Fe}^{3+}$  ions to  $\text{Fe}^{2+}$  ions and the formation of a colored complex between  $\text{Fe}^{2+}$  ions and o-phenanthroline. The Iron PACKTEST is suitable for measurements of dissolved iron ion concentration from various samples like industrial waste water, environmental water, etc. For drinking water, which usually contains low iron concentration, we recommend to use the Iron (Low range) PACKTEST, ref:WAK-Fe(D), range: Fe 0.05 - 2 mg/L. If you wish to measure only  $\text{Fe}^{2+}$  (Divalent iron), we recommend to use the Iron (Divalent) PACKTEST, ref: WAK-  $\text{Fe}^{2+}$ , range:  $\text{Fe}^{2+}$  0.2 - 10 mg/L.

### Cautions

1. The Iron PACKTEST allows to measure dissolved  $\text{Fe}^{2+}$  and  $\text{Fe}^{3+}$  ions. If you wish to measure total iron concentration including suspended particles, for example: "rusty water", refer to the following section "Total iron measuring method".
2. The Iron PACKTEST can also measure iron ions chelated EDTA.
3. The normal pH range is 2 - 9. If necessary, adjust the pH with diluted sulfuric acid or sodium hydroxide solution.
4. Ensure that PACKTEST tube is filled up to the half.
5. Partially undissolved reagent will not affect the measurement.
6. Keep sample temperature in the range 15°C - 40°C. Lower temperature necessitates longer reaction time.
7. Read the test under a daylight type lamp.
8. Put the line back into the aperture after use to prevent reagent spilt.

### Total iron measuring method (including rusty water)

Adjust the pH of the sample below 2 with diluted sulfuric acid. Heat the sample up to boiling and cool down it to ambient temperature. Finally, adjust the pH in the range 2-7 and process the sample as describe in the section "How to use".

### Interferences

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

- $\leq 1000$  mg/L :  $\text{B}^{3+}$ ,  $\text{Ca}^{2+}$ ,  $\text{Cl}^-$ ,  $\text{F}^-$ ,  $\text{I}^-$ ,  $\text{K}^+$ ,  $\text{Mg}^{2+}$ ,  $\text{Mo}^{6+}$ ,  $\text{Na}^+$ ,  $\text{NH}_4^+$ ,  $\text{NO}_2^-$ ,  $\text{NO}_3^-$ ,  $\text{PO}_4^{3-}$ ,  $\text{SO}_4^{2-}$ , Phenol, Formaldehyde, Anionic surfactant
- $\leq 500$  mg/L :  $\text{Al}^{3+}$ ,  $\text{Ba}^{2+}$
- $\leq 200$  mg/L :  $\text{Cr}^{3+}$ ,  $\text{Mn}^{2+}$
- $\leq 100$  mg/L : Residual chlorine
- $\leq 50$  mg/L :  $\text{Cr}^{6+}$
- $\leq 10$  mg/L :  $\text{Ag}^+$ ,  $\text{CN}^-$
- $\leq 5$  mg/L :  $\text{Co}^{2+}$ ,  $\text{Cu}^{2+}$ ,  $\text{Ni}^{2+}$ ,  $\text{Zn}^{2+}$ ,

The Iron PACKTEST is suitable for sea water samples.  
Oxidative chemical can interfere.