

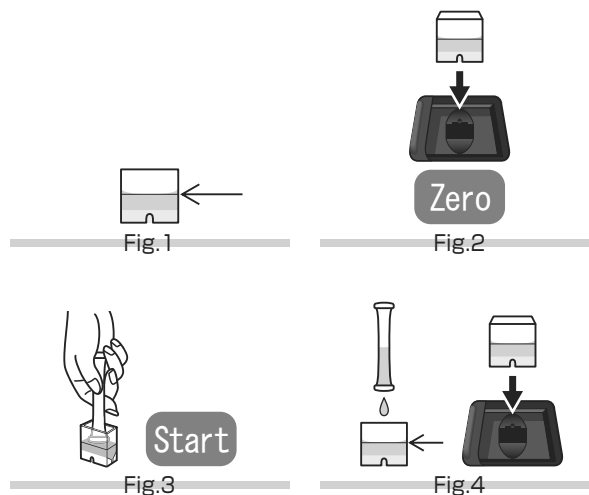
Fe Iron

Color development: None → Light orange → Orange
Method : Reduction and *o*-Phenanthroline
Range : 0.10 — 5.00 mg/L(ppm)
Reagent : WAK-Fe Tube
Reaction time : 3 min. after drawing sample into the tube.

Cell : PACKTEST Square Cup
Wavelength : 510 nm, 540 nm

Procedure

1. Press **[Fe]**.
2. Press **[OK]** to switch to the photometry window.
3. Fill the Cell with the sample for 1.5 mL (up to line). (Fig.1)
4. Put the Cell in the cell box and press **[Zero]**. (Fig.2)
5. Suck the whole amount of the sample in the Cell into the tube and press **[Start]** at the same time. (Fig.3)
6. Lightly shake the tube in Step 5 from 5 to 6 times, return the solution in the tube to the Cell in a gentle manner, set it again in the cell box. (Fig.4)
7. After 3 minutes have elapsed, the concentration will be automatically displayed.



CAUTION

1. In this method, the concentration of ionized iron (Fe^{2+} , Fe^{3+} : dissolved iron) in the sample is measured. The dissolved state of iron greatly varies depending on the pH of the sample, and iron could exist in the form of suspended solid or precipitate. Perform measurement after pretreatment according to the measurement purpose.
2. The optimum pH during color development is 6. If this pH cannot be achieved, neutralize the sample as necessary. A sample with a small buffering capacity can be measured even if its pH is around 2.
3. To measure the concentration of the total iron in tap water or the like, you add 0.13 mL of 10% dilute sulfuric acid or two droplets of Dilute Sulfuric Acid (model: WAS-D-SO₄) to 20 mL of sample, heat the sample until it almost boils, and suck the sample into the tube after cooling it down. It is possible to measure it without neutralization.
4. The concentration of such EDTA iron as used in hydroponics can also be measured without the pretreatment.
5. Perform measurement with the sample temperature set to 15 to 30°C.

Influence of coexisting substance

The stored calibration curve has been created by using the standard solution. If the influence of other substance is considered, check the measurement value by comparing it with the official method or by standard addition method. The right chart is the list of interference data for acceptable level by adding each of the single substances to the standard solution.

Seawater does not affect the measurement.
Oxidizing substance may affect the measurement.

Except for Heavy metal ions:

≤ 10mg/L.: B (III), Ca^{2+} , Cl^- , F^- , I^- , K^+ , Mg^{2+} , Na^+ , NH_4^+ , NO_2^- , NO_3^- , PO_4^{3-} , SO_4^{2-} , Phenol
≤ 10mg/L.: Anionic Surfactant, Residual Chlorine

Heavy metal ions:

≤ 10mg/L.: Ba^{2+} , Co^{2+} , Cr^{3+} , $\text{Cr}(\text{VI})$, Cu^{2+} , Mn^{2+} , $\text{Mo}(\text{VI})$, Ni^{2+} , Zn^{2+}
≤ 1mg/L.: Al^{3+} , CN^-

Information on reagent

Refer to the usage that comes with PACKTEST.
The pH of the solution is about 6.