Fe^{2+}-D Iron (Divalent) (Low Range)

Color development: None → Light red → Red
Method : Bathophenatholine
Range : 0.05 — 2.00 mg/L(ppm)
Reagent : WAK-Fe^{2+} (D) Tube
Reaction time : 3 min. after drawing sample into the tube.

Cell : PACKTEST Square Cup
Wavelength : 535 nm, 460 nm

Procedure

1. Press【Fe^{2+}-D】.
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.

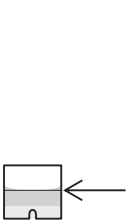
Fig.1

Fig.2

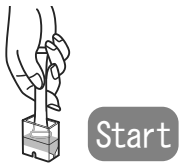

Fig.3

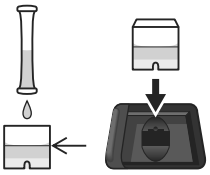
Fig.4

CAUTION

1. In this method, the concentration of ionized divalent iron (Fe^{2+}) in the sample is measured.
2. 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.
   To measure the concentration of total iron in tap water or the like, refer to "Fe Iron" or "Fe-D Iron (Low Range)".
3. The optimum pH during color development is 5. If the pH of the sample is not within the range from 2 to 9, neutralize the sample with dilute sulfuric acid or dilute sodium hydroxide solution, etc.
4. Perform measurement with the sample temperature set to 15 to 30℃ .

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.

It is not possible to measure seawater.
Oxidizing substance (residual chlorine, Cr^{6+} etc.) turns Fe^{2+} into Fe^{3+}.

Except for Heavy metal ions:

≤ 1000mg/L,: B (Ⅲ) , Cl^- , F^- , I^- , K^+ , Mg^{2+} , Na^+ , NH_4^+ , NO_2^- , NO_3^- , PO_4^{3-} , SO_4^{2-} , Phenol
≤ 500mg/L,: Ca^{2+}
≤ 50mg/L,: Anionic Surfactant
< 1mg/L,: Residual Chlorine

Heavy metal ions:

≤ 10mg/L,: Al^{3+} , Ba^{2+} , Cr^{3+} , Fe^{3+} , Mn^{2+} , Mo (Ⅵ) , Ni^{2+}
≤ 5mg/L,: Zn^{2+}
≤ 1mg/L,: Co^{2+} , Cu^{2+}
< 1mg/L,: CN^- , Cr (Ⅵ)

Information on reagent

Refer to the usage that comes with PACKTEST.
The pH of the solution is about 5.