

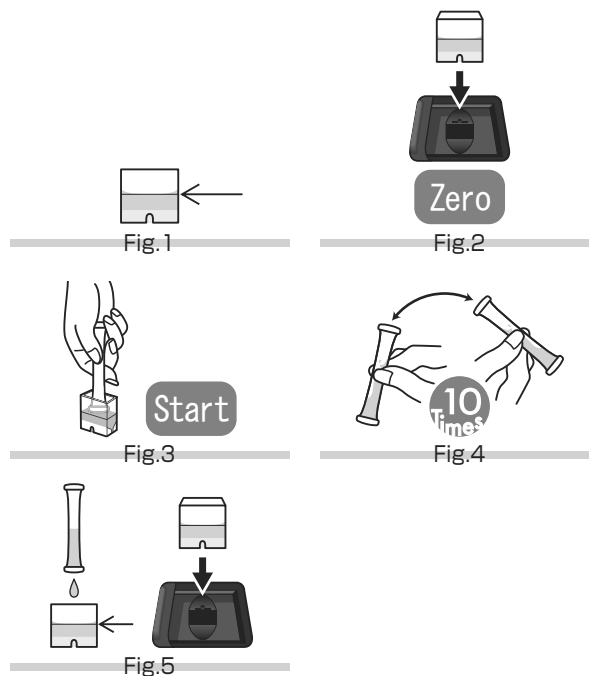
F Fluoride (Free)

Color development: Red → Purple
Method : Lanthanum-Alizarin Complexon
Range : 0.40 — 1.50 mg/L(ppm)
Reagent : WAK-F Tube
Reaction time : 15 min. after drawing sample into the tube.

Cell : PACKTEST Square Cup
Wavelength : 616 nm, 521 nm

Procedure

1. Press **[F]**.
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. Shake the tube in Step 5 about 10 times. (Fig.4)
7. Gently return the solution in the tube to the Cell, set it again in the cell box.
8. After 15 minutes have elapsed, the concentration will be automatically displayed.



CAUTION

1. In this method, a sample containing small amount of coexistent substance such as distillation-separated extract and natural water is handled and the concentration of ionized fluorine (F^-) is measured. It is impossible to measure the concentration of fluoroborate (BF_4^-). Implement the distillation procedures in the pretreatment before total fluorine measurement according to JIS K 0102 34.1.
2. The optimum pH during color development is 5. If the pH of the sample is not within the range from 3 to 9, neutralize the sample with dilute sulfuric acid or dilute sodium hydroxide solution, etc.
3. Perform measurement with the sample temperature set to 15 to 30°C.
4. When the concentration of fluorine ions is 100 mg/L or higher, the measurement value will be low. If high concentration is anticipated, dilute in advance and then perform measurement.

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.

Fluorine combines with metallic element such as aluminum and iron to form a fluorocomplex, and combines with alkaline earth metal such as calcium to exist in the form of suspended solid or precipitate of fluoride, which may not be measured by this method.

Except for Heavy metal ions:

- ≤ 100mg/L.: B (III), Cl^- , I^- , K^+ , Mg^{2+} , Na^+ , NH_4^+ , NO_2^- , NO_3^- , PO_4^{3-} , SO_4^{2-} , Anionic Surfactant, Phenol
- ≤ 50mg/L.: Residual Chlorine
- ≤ 10mg/L.: Ca^{2+}

Heavy metal ions:

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

Information on reagent

Refer to the usage that comes with PACKTEST.

The pH of the solution is about 5.