B　Boron

Color development: Light yellow → Yellow
Method　　: Azomethine H
Range　　: 0.50 — 6.00 mg/L (ppm)
Reagent　　: WAK-B　Tube
Reaction time : 40 min. after drawing sample into the tube.

Cell : PACKTEST Square Cup
Wavelength : 490 nm

Procedure

1. Press【B】.
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. (If large orange lumps are left in the tube, further shake the tube.) (Fig.4)
7. Gently return the solution in the tube to the Cell, set it again in the cell box. (Fig.5)
8. After 40 minutes have elapsed, the concentration will be automatically displayed.

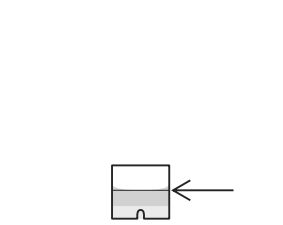
Fig.1

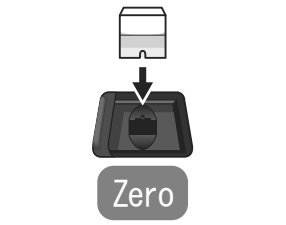

Fig.2

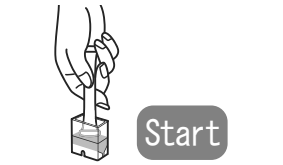

Fig.3

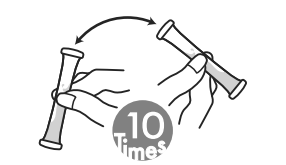

Fig.4

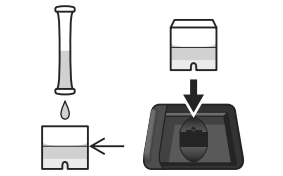
Fig.5

Caution

1. In this method, the concentration of ionized borate (borax) is measured and it is converted into a boron concentration value. It is impossible to measure the concentration of fluoroborate (BF_4^-).
2. The optimum pH during color development is 6. If the pH of the sample is not within the range from 5 to 9, neutralize the sample with dilute sulfuric acid or dilute sodium hydroxide solution, etc.
3. Perform measurement with the sample temperature set to 20℃ .
   If the sample temperature is other than 20℃ , multiplying the measurement value by either of the following coefficients can implement correction.
   15℃・・・×0.95　　25℃・・・×1.25

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. (However, ordinary seawater contains boron at 4 to 5 mg/L.)

≤ 1000mg/L,: As (Ⅲ) , Cl^- , F^- , I^- , K^+ , Na^+ , NH_4^+ , NO_2^- , NO_3^- , PO_4^{3-} , Phenol
≤ 500mg/L,: Mg^{2+} , Mn^{2+}
≤ 250mg/L,: Ni^{2+} , SO_4^{2-} , Zn^{2+}
≤ 100mg/L,: Ba^{2+} , Ca^{2+}
≤ 50mg/L,: Al^{3+} , Cr^{3+} , Anionic Surfactant
≤ 25mg/L,: Cu^{2+}
≤ 10mg/L,: CN^- , Cr (Ⅵ) , Residual Chlorine
≤ 5mg/L,: Fe^{2+} , Sn^{2+}
< 1mg/L,: Ag^+ , Fe^{3+}

Information on reagent

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