B-C　Boron (High Range)

Color development : Light yellow → Yellow
Method　　: Azomethine H
Range　　: 5.0 — 80.0 mg/L (ppm)
Reagent　　: WAK-B (C)　K-1 (Liquid) , Tube
Reaction time : 12 min. after drawing sample into the tube.

Cell : PACKTEST Square Cup
Wavelength : 490 nm

Procedure

1. Press【B-C】.
2. Press【OK】to switch to the photometry window.
3. Fill the Cell with the sample for 0.2 mL by using the small pipette. (Fig.1)
4. Add the K-1 reagent for 1.5 mL to the sample in the Cell by using the large pipette, attach the cap, and shake the Cell 2 to 3 times. (Fig.2)
5. Remove the cap of the Cell, set the Cell in the cell box and press【Zero】. (Fig.3)
6. Suck the whole amount of the sample in the Cell into the tube and press【Start】at the same time. (Fig.4)
7. Shake the tube in Step 6 by overturning it to right and left for 60 times in 1 minute. (Fig.5)
8. Return the solution in the tube to the Cell in a gentle manner, set it again in the cell box. (Fig.6)
9. After 12 minutes have elapsed, the concentration will be automatically displayed.

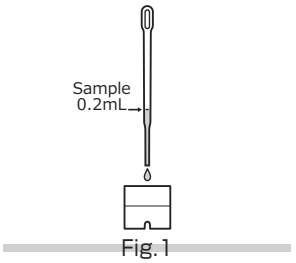

Fig.1

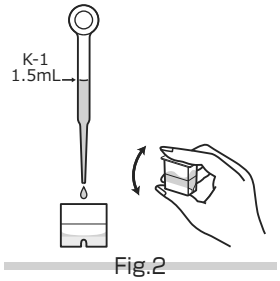

Fig.2

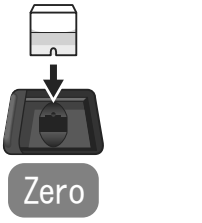

Fig.3

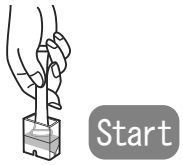

Fig.4

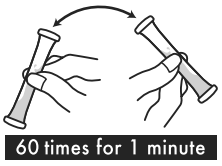

Fig.5

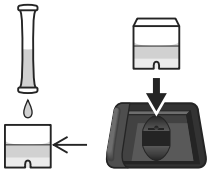
Fig.6

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. Use the small pipette for sample after thoroughly cleaning it with pure water or cleaning its inside with the sample.
3. 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.
4. 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℃・・・×1.20
5. Use of a measuring pipette or the like instead of the supplied pipette enables more accurate 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.

Seawater does not affect the measurement. (However, ordinary seawater contains boron at 4 to 5 mg/L.)

≤ 5000mg/L,: As (Ⅲ) , Cl^- , F^- , I^- , K^+ , Na^+ , NH_4^+ , NO_2^- , NO_3^- , PO_4^{3-} , Phenol
≤ 2500mg/L,: Mg^{2+} , Mn^{2+}
≤ 1000mg/L,: Ni^{2+} , SO_4^{2-} , Zn^{2+}
≤ 500mg/L,: Ba^{2+} , Ca^{2+}
≤ 250mg/L,: Al^{3+} , Cr^{3+} , Anionic Surfactant
≤ 100mg/L,: Cu^{2+}
≤ 50mg/L,: CN^- , Cr (Ⅵ) , Residual Chlorine
≤ 25mg/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.