

DET Anionic Surfactants

Color development: None → Light blue → Blue

Method : Methylene Blue - Anion surfactant Complex

Range : 0.05 — 1.20 mg/L(ppm)

Reagent : Water Analysis Set: Anionic Surfactants (Model: WA-DET) R-1 (Dropper) , R-2 (Liquid)

Reaction time : 0 min.

Usage : Read the instruction supplied with "Water Analysis Set: Anionic Surfactants".

Cell : PACKTEST Square Cup

Wavelength : 620 nm

Pretreatment method

1. By following the procedure Step ④ in the usage supplied with the Water Analysis Set: Anionic Surfactants, add 1.5 mL of the R-2 reagent using the pipette. (The addition amount of the R-2 reagent differs from that in the case of visual colorimetry.)(Fig.1)

2. Fit the cap to the tube and intensely shake it so that the R-2 reagent spreads across the whole wall surface of the tube, and use the liquid as the solution. (Fig.2)

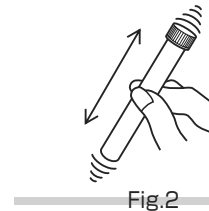
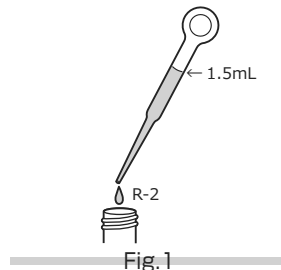


Fig.2

Procedure

1. Press **[DET]**.
2. Press **[OK]** to switch to the photometry window.
3. Fill the Cell with pure water (or tap water) for 1.5 mL (up to line). (Fig.3)

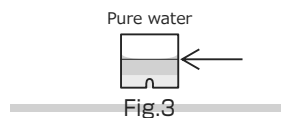


Fig.3

4. Put the Cell in the cell box and press **[Zero]**. (Fig.4)

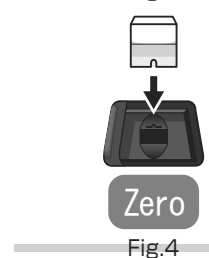


Fig.4

5. Take out the Cell, discard the pure water, and pour the whole amount of the prepared solution to the same Cell. (Fig.5)

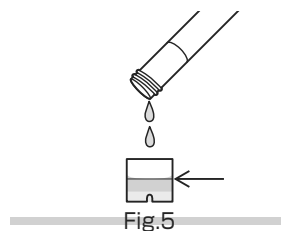


Fig.5

6. Set the Cell in the cell box again and press **[Start]**. (Fig.6)

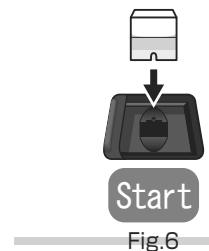


Fig.6

7. The concentration will be automatically displayed.

CAUTION

1. Even existence of a small amount of cationic surfactants agent, nonionic surfactants and oil can cause a negative measurement error. If these substances are considered to coexist at high concentration, dilute the sample by 10 times in advance and then perform measurement, and multiply the obtained value by 10.

*Dilution method: Fill the tube with 2 mL of the sample, and add pure water (or tap water) up to the mark line on the tube.

*If river water containing a non-ionic surfactants at a concentration of 1 mg/L or higher as of before adding reagent is intensely shaken, tiny bubbles will be formed on the water surface.

2. In river water, whose concentration of DET is 0.5 mg/L or higher, coexistent substances such as non-ionic surfactants are highly likely to exist, and the actual concentration of anionic surfactants may be much higher than the result.

3. The optimum pH during color development is 7. 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.

4. *Perform measurement with the sample temperature set to 20°C .

If the sample temperature is other than 20 °C , multiplying the measurement value by either of the following coefficients can implement correction.

10°C ··· ×0.75 15°C ··· ×0.85

25°C ··· ×1.25 30°C ··· ×1.85

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.

It is not possible to measure seawater.

≤ 100mg/L.: Ca²⁺, Cl⁻, Cu²⁺, F⁻, K⁺, Mg²⁺, Na⁺, NH₄⁺, NO₂⁻,
NO₃⁻, PO₄³⁻, SO₄²⁻, Residual Chlorine
≤ 10mg/L.: Fe²⁺, Fe³⁺

Information on reagent

Refer to the instruction supplied with "Water Analysis Set: Anionic Surfactants".

The pH of the solution is about 7.