

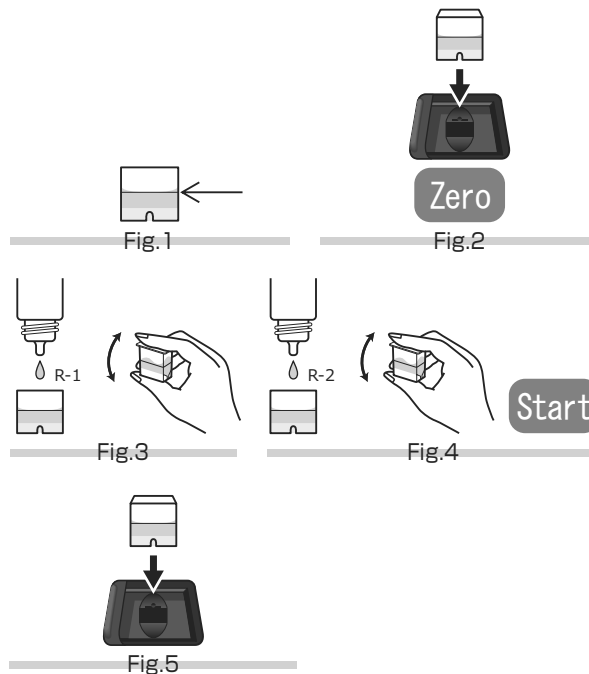
Cl Chloride

Color development: Transparent → White Turbidity
Method : Turbidimetry with Silver Nitrate
Range : 2.0 – 50.0 mg/L(ppm)
Reagent : DPR-Cl R-1 (Dropper) , R-2 (Dropper)
Reaction time : 3 min. after R-2 reagent is added.

Cell : PACKTEST Square Cup
Wavelength : 615 nm

Procedure

1. Press **[Cl]**.
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. Add one droplet of the R-1 reagent, attach the cap, and shake the Cell 2 to 3 times. (Fig.3)
6. Add one droplet of the R-2 reagent, immediately attach the cap, and shake the Cell 2 to 3 times, and press **[Start]** . (Fig.4)
7. Remove the cap of the Cell, set the Cell in the cell box again. (Fig.5)
8. After 3 minutes have elapsed, the concentration will be automatically displayed.



Caution

1. In this method, the concentration of chloride ions (Cl^-) in the sample is measured. If Br^- and I^- coexist, a positive measurement error could occur.
2. The chloride to be measured is not such chlorine for disinfection as contained in tap water or the like. To measure the concentration of chlorine for disinfection, refer to "ClO-DPD Residual Chlorine (Free)".
3. The optimum pH during color development is 9 or less. To an alkaline sample, add dilute sulfuric acid or the like so as to adjust the pH of the sample to 9 or less. (Do not use hydrochloric acid.)
4. Perform measurement with the sample temperature set to 20 to 25°C .
If the sample temperature is not within the range, multiplying the measurement value by either of the following coefficients can implement correction.
 $15^\circ\text{C} \cdots \times 1.3$ $30^\circ\text{C} \cdots \times 0.84$
5. Depending on the operation method, the results vary. In Step 6 of "Procedure", shake the Cell as soon as possible after R-2 reagent is added.
6. To set the Cell in the box, remove the cap. Wipe off water droplets before setting the Cell in the cell box.
7. As turbid substances attach to the Cell after measurement, thoroughly clean the Cell.

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 possible to measure seawater, but as it has a high concentration of chloride ions, dilution is necessary. (Approximately 1000 times in the case of artificial seawater)

$\leq 1000\text{mg/L}$: Al^{3+} , B (III), Ca^{2+} , Co^{2+} , Cr^{3+} , Cu^{2+} , F^- , Fe^{3+} , K^+ ,
 Mg^{2+} , Mn^{2+} , Na^+ , NH_4^+ , Ni^{2+} , NO_2^- , NO_3^- , SO_4^{2-} ,
 Zn^{2+} , Phenol
 $\leq 500\text{mg/L}$: Silica
 $\leq 200\text{mg/L}$: PO_4^{3-} , Anionic Surfactant
 $\leq 10\text{mg/L}$: Fe^{2+}
 $\leq 5\text{mg/L}$: Residual Chlorine
 $\leq 1\text{mg/L}$: Ba^{2+} , Cr (VI), I^- , Mo (VI)
 $< 1\text{mg/L}$: CN^-

Information on reagent

Refer to the usage supplied with "DPR-Cl".
The pH of the solution is almost same as the sample.