

Application Memo

Calcium Content of Tap Water

Industry	Environmental
Instrument	Automatic potentiometric titrator
Measurement method	Chelatometric titration
Standards	JIS K0101、ASTM D1126、ISO 6058

1. Overview

Calcium content of city water is expressed in mg/L by calcium carbonate equivalent to calcium ion in water. According to above standards, the sample is titrated by chelatometry with EDTA 2Na solution. By adjusting sample to pH12~13 with potassium hydroxide, co-precipitation of magnesium is avoided, and only calcium can be measured. Here in this application, the sample is measured by an automatic potentiometric titration system using photometric sensor. Titration with 0.01mol/L EDTA 2Na goes up to the endpoint, and the titration volume is converted to calcium carbonate in order to obtain calcium content. The endpoint is determined by the color change of NANA indicator from red to blue.

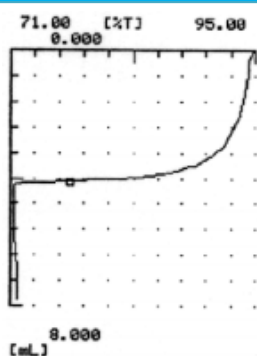
2. Apparatus

Main unit	Automatic potentiometric titrator (preamplifier PTA)
Detector	Photometric sensor Interference filter (630nm)

3. Reagents

Titrant	0.01mol/L EDTA 2Na solution
Solvent	Pure water
Indicator	NANA indicator
Additive	100g/L potassium cyanide solution, 100g/L hydroxylammonium chloride solution, Potassium hydroxide solution

4. Example



-Titration curve-

-Measurement results-

	Sample (g)	Titer (mL)	Conc. (mgCaCO ₃ /L)
1	150	4.1240	27.52
2	150	4.1398	27.63
3	150	4.2080	28.08
Average			27.74
SD			0.298
RSD(%)			1.07

Please feel free to contact us for any further information.

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