Total Hardness (Hd)

Method - Colorimetric Titration

After adding the reagents to establish the desirable conditions to the sample, the volume of titrant is charged. Thanks to the module syringe driver minimum dose (0.015 ml), the accuracy achieved is really high, with 3 drops differences as much between 2 consecutives analysis of the same standard. Moreover, the software has been improved to speed up the initial dose, whereas when the inflection point is close, the titrant is added slowly, to archieve precision.

Principle of measurement

The calcium and magnesium complexes with the Erichrome Black-T to give a blue-violet colored complex. This, when titrated by the addition of EDTA, is broken up as the calcium EDTA/ Magnesium ESTA complexes are more stable and when excess EDTA is present the Erichrome Black -T-EDTA complex is formed which is a rose colored compelx.

Advantages of the method

The complexometric titration of both the calcium and magnesium, which are the main contributors to the hardness of water, gives a very sharp end point because at the end-point neither the Ca-EBT nor the EDTA-EBT complexes exist.

Specifications

Range: From 0 to 100 ppm /250 ppm/ 500ppm / 1000 ppm
Adjustable to lower/higher concentrations
Accuracy: ±2%
Repeatability: ±2%
Resolution: 0,1ppm
Analysis time: around 20 minutes
Calibration: one point
LED Wavelength: 650 nm

Reagents consumption

- Reagent 1: 1 ml / analysis — 0.75L / month
- Reagent 2: 4 ml / analysis — 3.0L / month
- Titrant: 5ml / analysis — 4,5L / month

Monthly consumption calculated assuming 1 analysis per hour.

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Total Hardness (Hd)

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