

NEXTChem Process Analyzers, Inc.

On-Line Total Hardness

Industry: Water/Waste Water, Power Generation

Sample Filtration is eliminated, in samples with high solids. For samples requiring dilution ≤ 2 mm particles can easily be handled. For non-dilution samples ≤ 6 mm particles pose no problem. No other system can match this rugged design.

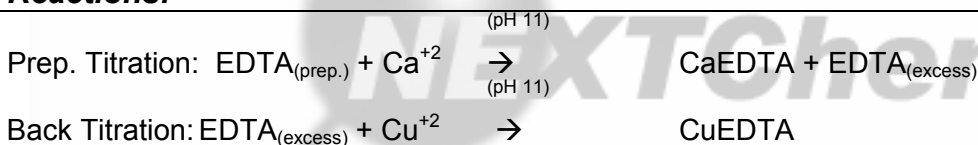
NEXTChem Analyzers can provide accuracy only matched by the most precise laboratory equipment. Our reagent precision pumps deliver titrants with ± 0.001 mL reproducibility. Potentiometric analyses are utilized thus eliminating errors caused by electrode drift.



Analysis of Total Hardness

Total Hardness is determined by the back titration of excess EDTA with copper sulfate. The endpoint is found with a copper (ISE) Ion Selective Electrode.

Reactions:



Reagents:

3 M Ammonium Hydroxide/0.05 M EDTA, 0.05 N Copper Sulfate w/0.05 M Ammonium Sulfate, 1 M Nitric Acid

Sensor:

Copper Ion Selective Electrode

Detection Limits / Interferences:

Dilution: 175,000 – 35 ppm
Non-Dilution: 333 – 0 ppm (lower detection limit 2 ppm)
Interferences: Cl^- , Fe^{+3} , Fe^{+2} , Al^{+3} , Cu^{+2} , Zn^{+2}

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