



Thermo

ELECTRON CORPORATION

Potentiometric Titration Application Notes

Applications Log # 216A

Overview

Alkalinity, magnesium and calcium concentrations were determined using the first derivative titration technique and EDTA as the titrants. The Orion 960 Autochemistry System determines the endpoint and calculates the concentration of alkalinity, magnesium and calcium in the sample

Industry	Water
Species Measured	Alkalinity
Sample	Water-Product
Sample Size	10mL
Typical Concentration	1200 ppm
Technique	# 6 First Derivative
Electrode	Ross Sure-Flow Combination 8172BN
Solutions	5M hydrochloric acid 650201
Sample Prep	Accurately pipet 10 mL of sample into analysis beaker, add 50 mL of deionized water and titrate with 0.1 M HCl to endpoint using a pH electrode.

Statistics

# of Trials	5	Mean	1213.4ppm	%CV	0.2
Analysis Time	3.3minute(s)				
Comments	Rinse the electrodes, stirrer, and dispenser probe between measurements with deionized water.				

Method Parameters

Sample Volume/Weight	10.00 mL	Timed or Stability Readings	5.0 second(s) timed
Constant Increment	10.0 mV	Number of Endpoints	1
Max Titrant Volume	5.00 mL	Desired Units	ppm - v
Molecular weight	100.09 g	Predose	0.590 mL
Prestir	10.0 second(s)	Additional Parameters	
Reaction Ratio	1.00		