



Thermo

ELECTRON CORPORATION

Potentiometric Titration Application Notes

Applications Log # 348

Overview

Acetic acid concentration was determined using the first derivative titration technique and SEQUENCE procedure with an Orion pH electrode, and sodium hydroxide as the titrant. Excess hydrochloric acid is added to the sample to convert all acetate ions to acetic acid which is titrate as the second endpoint in the SEQUENCE procedure. The Orion 960 Autotitrator PLUS determines the endpoints and calculates the concentration of acetic acid in the sample.

Industry	Metal Finishing
Species Measured	Acetic Acid
Sample	Nickel/Zinc alloy bath
Sample Size	1.0mL
Typical Concentration	1.6% w/w
Technique	# 6 First Derivative
Electrode	Ross Sure-Flow Combination pH 8172BN
Solutions	Electrode fill 810007; deionized water
Sample Prep	Accurately pipet 1 mL of sample into an analysis beaker containing 50 mL of deionized water and 1 mL of 1 M HCl. Sample is ready for titration.

Statistics

# of Trials	5	Mean	1.6%w/w	%CV	0.68
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Analysis Time 2.1minute(s)

Comments Rinse the electrodes, stirrer, and dispenser probe between measurements with deionized water.

Method Parameters

Sample Volume/Weight	1.00 mL	Timed or Stability Readings	5.0 second(s) timed
Constant Increment	10.0 mV	Number of Endpoints	1
Max Titrant Volume	25.00 mL	Desired Units	% w/v
Molecular weight	60.05 g	Predose	none
Prestir	10.0 second(s)	Additional Parameters	
Reaction Ratio	1.00		