



Thermo

ELECTRON CORPORATION

Potentiometric Titration Application Notes

Applications Log # 184B

Overview

Acidity of food products was determined using the first derivative titration technique with an Orion combination Ross Sure-Flow pH electrode. Using sodium hydroxide in the sample reagent as the titrant. The Orion 960 Autochemistry System determines the endpoint and calculates the acidity of the sample. Ketchup was an example of a food product that was analyzed with a single reagent for both sodium and acidity.

Industry	Food and Beverage
Species Measured	Acidity
Sample	Catsup
Sample Size	1 mL
Typical Concentration	1825 mg/ 100 g
Technique	# 6 First Derivative
Electrode	Ross Combination Sure-Flow pH electrode
Solutions	Thermo Orion Sodium ionic strength adjuster (cat# 841111), THERMO ORION Sodium reconditioning solution (cat# 841113), 0.05 M NaOH/ 1 M NaCl, Reference electrode filling solution (cat# 900010,900002)
Sample Prep	Accurately weigh 1 mL of ketchup into sample beaker. For acidity accurately weigh 1 mL of sample and add 50 mL of deionized water. Run proper analysis technique for desired species to be analyzed.

Statistics

of Trials 5 **Mean** 1824 mg/ 100 g **%CV** 0.10

Analysis Time 2.9 minute(s)

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

Method Parameters

Sample Volume/Weight	0.978 g	Timed or Stability Readings	3.0 second(s) timed
Constant Increment	15.0 mV	Number of Endpoints	1
Max Titrant Volume	7.00 mL	Desired Units	mg/100g
Molecular weight	60.05 g	Predose	3.50 mL
Prestir	15.0 second(s)	Additional Parameters	
Reaction Ratio	1.00		