



Thermo

ELECTRON CORPORATION

Potentiometric Titration Application Notes

Applications Log # 664

Overview

The amount of ascorbic acid is determined using the first derivative technique on the Orion 960 Autochemistry System. A 9678 platinum redox electrode and iodine solution astitrant is used for the titration. The 960 calculates the result and reports mg ascorbic acid per deciliter.

Industry	Food and Beverage
Species Measured	Ascorbic acid
Sample	Lucozade Drink
Sample Size	5 ml
Typical Concentration	~28.58
Technique	# 6 First Derivative
Electrode	Platinum redox electrode
Solutions	Iodine solution (0.0050 M); Electrode Fill Solution (Cat. 90001); Thermo Orion 90 Titration System (Cat. 096000); 960SC Sample Changer (Cat. 0960SI); Automatic pipette; Plastic Beakers(100ml); Volumetric flask; Platinum redox electrode (Cat. 9678BN).
Sample Prep	To a 150 ml beaker, pipette 5 ml of Lucozade sample and 45 ml of DI water. The sample is ready for titration. A sample changer is employed to increase sample throughput. On a fifteen position carousel up to twelve sample are loading and three DI wash beaker

Statistics

# of Trials	2	Mean	28.58	%CV	2.06
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Analysis Time

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

Method Parameters

Sample Volume/Weight	5.0 ml	Timed or Stability Readings	6 sec
Constant Increment	0.1 ml	Number of Endpoints	
Max Titrant Volume	4.0 ml	Desired Units	
Molecular weight	176.12	Predose	0.5 ml
Prestir	10 sec	Additional Parameters	Titrant: 0.005 M I ₂
Reaction Ratio	1.0		