



Overview

The concentration of sodium is determined by a Thermo technique called KAP Analysis. Aliquots of sodium standard are added automatically to a sample containing an Orion sodium electrode. The Orion 960 Autochemistry System calibrates the electrode and calculates the concentration of sodium in corn chips.

Market	Food and Beverage	Species Measured	Sodium
Sample	Corn Chips	Sample Size	one serving
		Typical Concentration	140 mg/serving
Technique #	2 Multiple Known Addition	Electrode	Ross Sure-Flow Sodium Electrode (8611BN)
Solutions	Sodium Ionic Strength Adjuster (cat# 841111), Electrode filling solution (cat# 900010), Sodium 1M KAP Analysis Solution (cat# 650700), Sodium Reconditioning Solution (cat# 841113), Diluted Triton-X (cat# 654203)		

Sample Prep

Grind the corn chips in a mortar with a pestle into small pieces, then transfer the sample into a 1L volumetric flask. Be sure to rinse the corn chip's bag and mortar with deionized water and place in flask before bringing solution to mark. Stir for 10 minutes on a stirring plate. Pipette 50 mL of the solution into a beaker and add 5 mL of the sodium ISA. The sample is then ready for analysis.

Statistics

of Trials 5 **Mean** 137.0 mg/serving **%CV** 0.89 **Analysis Time** 2 minute(s)

Comments

Rinse the setup thoroughly between measurements with 20:100 sodium ISA and deionized water. Chloride concentration was also determined with a chloride electrode using silver nitrate as the titrant resulting in 246.6 mg per serving.

Method Parameters

Sample Volume/Weight	2.25 g	Timed or Stability Readings	3.0 mV/min stability
Constant Increment	10.0 mV	Number of Endpoints	
Max Titrant Volume	10.0 mL	Desired Units	w
Molecular weight	651.75 g	Predose	
Prestir	5.0 second(s)	Additional Parameters	Total Solution Volume = 55.00 mL, Precision = 2.0%
Reaction Ratio	1.00		