



# Thermo SCIENTIFIC

Potentiometric Titration Application Notes

Applications Log # 412A

## Overview

The concentration of sodium was 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.

<b>Market</b>	Food and Beverage	<b>Species Measured</b>	Sodium
<b>Sample</b>	Gravy mix	<b>Sample Size</b>	0.5g
<b>Technique #</b>	2 Multiple Known Addition	<b>Typical Concentration</b>	2.7w/w
		<b>Electrode</b>	Ross NA Sure-Flow Combination 8611BN

**Solutions** Diluted triton-X 654203; Na ISA 841111; Na KAP 650700; Na Reconditioning Solution 841113

**Sample Prep** Accurately weigh out 0.5 g of sample into a beaker, pipet 50 mL aliquot of the reagent solution, and mix thoroughly.  
Reagent prep: Pipet 50 mL of sodium ISA, add 20 mL of diluted Triton X-100, then bring the volume to 500 mL with deionized water.

## Statistics

**# of Trials** 4      **Mean** 2.73%w/w      **%CV** 1.78      **Analysis Time** 2.3minute(s)

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

## Method Parameters

<b>Sample Volume/Weight</b>	0.513 g	<b>Timed or Stability Readings</b>	3.0 mV/min stability
<b>Constant Increment</b>	18.0 mV	<b>Number of Endpoints</b>	1
<b>Max Titrant Volume</b>	10.0 mL	<b>Desired Units</b>	% w/w
<b>Molecular weight</b>	22.99 g	<b>Predose</b>	0
<b>Prestir</b>	60.0 sec	<b>Additional Parameters</b>	Total Solution Volume = 50.0 mL, Precision = 2.0%
<b>Reaction Ratio</b>	1.00		