



Thermo

ELECTRON CORPORATION

Potentiometric Titration Application Notes

Applications Log # 227

Overview

The concentration of ammonia in digested samples were determined by an Orion technique called KAP Analysis. Aliquots of an ammonium chloride standard are added automatically to a diluted sample containing an Orion Ammonia electrode. The Orion 960 Autotitrator PLUS calculates the sample concentration and electrode slope, and verifies the results through a spike recovery test.

Industry	Chemical Industry
Species Measured	Ammonia
Sample	Digested Solutions
Sample Size	2ml
Typical Concentration	100 ppm
Technique	# 2 Multiple Known Addition
Electrode	Ammonia 9512BN
Solutions	ISA 951211; saturated potassium iodide (in deionized water); ammonium STD 951006; deionized water
Sample Prep	Add sample to mixture containing KI and ISA

Statistics

# of Trials	5	Mean	79.52ppm	%CV	2.59
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Analysis Time 2.3minute(s)

Comments Rinse the electrodes, stirrer, and dispenser probe between measurements with deionized water. Low level ammonia (less than 1 ppm) was measure by technique (1) where the electrode is automatically calibrates prior to measurement and a mud value is calculated and used in the sample analysis.

Method Parameters

Sample Volume/Weight	2.00 mL	Timed or Stability Readings	3.0 mV/min stability
Constant Increment	15.0 mV	Number of Endpoints	1
Max Titrant Volume	10.0 mL	Desired Units	ppm - v
Molecular weight	17.03 g	Predose	none
Prestir	15.0 second(s)	Additional Parameters	Total Solution Volume = 62.00 mL, Precision = 3.0%
Reaction Ratio	1.00		