



Thermo

ELECTRON CORPORATION

Potentiometric Titration Application Notes

Applications Log # 208

Overview

The concentration of ammonia in the above samples were determined by a 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	Water
Species Measured	Ammonia
Sample	Phosphoric Acid Waste
Sample Size	1.0g
Typical Concentration	4% w/w
Technique	# 2 Multiple Known Addition
Electrode	Ammonia 9512BN
Solutions	APP ISA 951211; Ammonium STD 951006; deionized water
Sample Prep	Accurately weigh out 1 g of the phosphoric acid waste into a 500 mL volumetric flask and fill the flask to the mark with deionized water. Stir well and take 20 mL of this solution add 10 mL of the ISA and 30 mL of deionized water in an analysis beaker. The weight of the sample entered into the program is calculated by the formula: (sample weight) * 20/500.

Statistics

# of Trials	5	Mean	4.18%w/w	%CV	1
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Analysis Time 3.5minute(s)

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

Method Parameters

Sample Volume/Weight	0.04 g	Timed or Stability Readings	3.0 mV/min stability
Constant Increment	18.0 mV	Number of Endpoints	1
Max Titrant Volume	10.00 mL	Desired Units	% w/w
Molecular weight	18.00 g	Predose	none
Prestir	1.0 second(s)	Additional Parameters	Total Solution Volume = 60.00 mL, Precision = 2.0%
Reaction Ratio	1.00		