



Thermo

ELECTRON CORPORATION

Potentiometric Titration Application Notes

Applications Log # 599-2

Overview

The concentration of ammonia was determined by known addition technique. Aliquots of ammonia standard are added automatically to a sample containing an Orion ammonia electrode. The Orion 960 Autochemistry System calculates the electrode slope and the sample concentration. A spike recovery analysis is performed on two of the sample to verify the precision and accuracy of results.

Industry	Water
Species Measured	Ammonia
Sample	Wastewater
Sample Size	25mL
Typical Concentration	App. 6ppm
Technique	# 2 Single Known Addition
Electrode	Ammonia electrode 9512BN
Solutions	ISA 951211. Internal fill solution 951202. Ammonia Cl std. 951006. Standard/nitr, 951207
Sample Prep	Pipette 25 mL of sample into the 100 mL beaker. 2 mL of ISA must be added to the sample salient immediately before measurement. After the addition of the ISA, all solution should fall within a pH 11 to 14 range (in this range the solutions are blue) and the sample is ready to titrate.

Statistics

# of Trials	3	Mean	4.98ppm	%CV	3.50
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Analysis Time 2.9minute(s)

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

Method Parameters

Sample Volume/Weight	25.00 mL	Timed or Stability Readings	0.5 mV/min stability
Constant Increment		Number of Endpoints	
Max Titrant Volume	2.00 mL	Desired Units	ppm - v
Molecular weight	14.01 g	Predose	
Prestir	1.0 second(s)	Additional Parameters	Total Solution Volume - 27.0 mL
Reaction Ratio	1.00		