



Thermo

ELECTRON CORPORATION

Potentiometric Titration Application Notes

Applications Log # 615

Overview Ampicillin sodium and the degraded product were determined by the first derivative technique using 0.02 M Hg(NO₃)₂ as the titrant. The Orion 960 Autotitrator PLUS calculates the sample concentration.

Industry	Pharmaceutical
Species Measured	Ampicillin Sodium
Sample	Ampicillin Sodium Powder
Sample Size	50mg
Typical Concentration	95-97% w/w
Technique	# 6 First Derivative
Electrode	Combination Redox Electrode 9678BN
Solutions	Electrode fill solution 900001. 0.02M Hg(NO ₃) ₂ . Acetic anhydride. 1M NaOH. 1M nitric acid. Acetate buffer
Sample Prep	Ampicillin sodium prep: add 10 mL of DI water and 0.2 mL of acetic anhydride to 50 mg of sample. Stir to dissolve for 3 minutes. Add 10 mL of 1 N NaOH to sample and wait for 15 minutes. Add 10 mL of 1 N nitric acid and 20 mL of acetate buffer (pH 4.6) to the above solution and titrate the sample.

Statistics

# of Trials	5	Mean	95.5%w/w	%CV
Analysis Time	15.0minute(s)			

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