



# Thermo

ELECTRON CORPORATION

Potentiometric Titration Application Notes

Applications Log # 623

**Overview** The cadmium in a process liquid was determined by the first derivative technique using 0.05 M sodium diethdithiocarbamate solution as the titrant. The Orion 960 Autotitrator PLUS calculates the sample concentration.

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<b>Industry</b>	Metal Finishing
<b>Species Measured</b>	Cadmium
<b>Sample</b>	Process Liquor
<b>Sample Size</b>	1-5 mL
<b>Typical Concentration</b>	14.7g/L
<b>Technique</b>	# 6 First Derivative
<b>Electrode</b>	Ag/Sulfide electrode 9416BN. D-J Ref electrode 900200
<b>Solutions</b>	Inner/Outer fill solution 900002, 900003. 0.05M Na diethyldithiocarbamate solution. Buffer solution. Propan-2-OL
<b>Sample Prep</b>	A known volume (1-5 mL) of sample was transferred to a beaker. Add 50 mL of propan-2-ol and 5 mL of pH 4.10 buffer to the same beaker. The sample is now ready to titrate.

### Statistics

<b># of Trials</b>	3	<b>Mean</b>	15.4g/L	<b>%CV</b>
<b>Analysis Time</b>	6 minutes			

**Comments** Rinse the electrodes, stirrer, and dispenser probe between measurements with deionized water. \*All method parameters are subject to sample type.