

VA Application Note No. V - 148

Title:	Nickel in a sulfamate nickel plating bath
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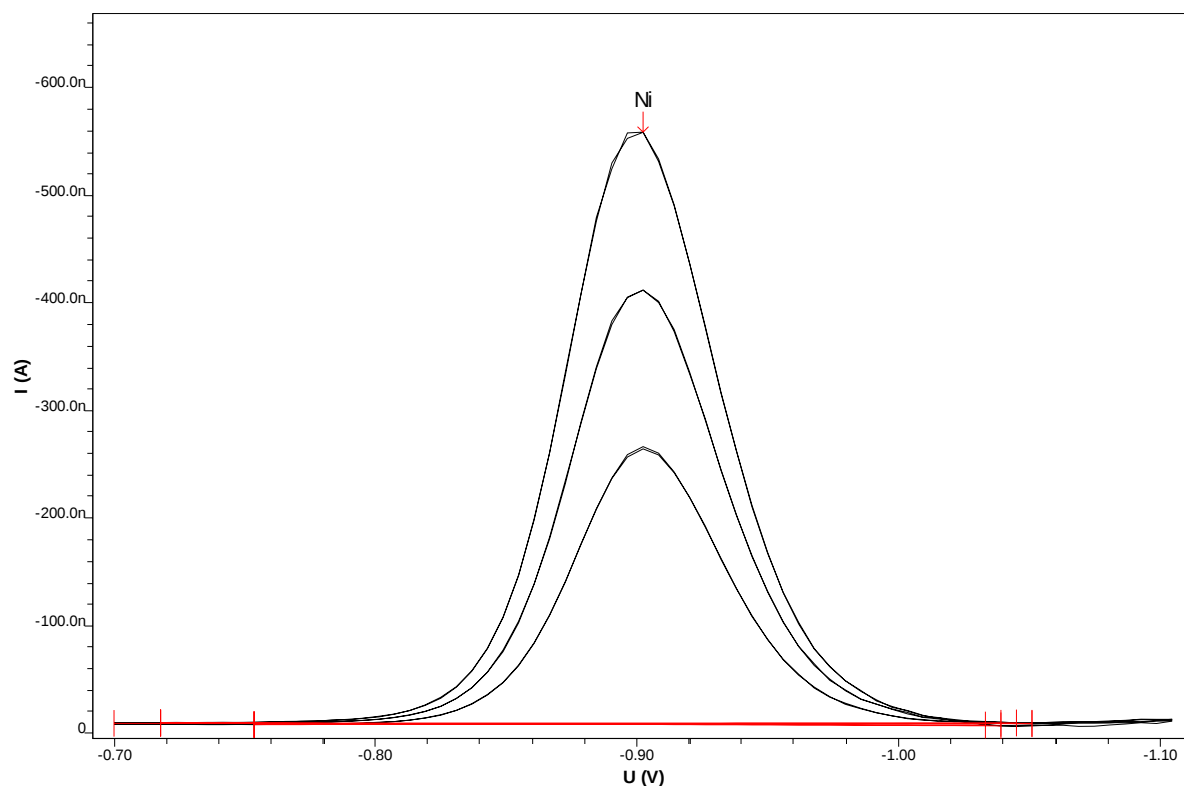
Summary:	The concentration of Ni in a Ni plating bath is determined by polarography in ammonia buffer pH 9.6.
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Sample:	Sulfamate nickel bath
Sample preparation:	Dilution 1:1000

Analysis of Ni		
Ammonia buffer pH 9.6	c(HCl) = 1 mol/L c(NH ₃) = 3 mol/L	
Measuring solution	10 mL ultrapure water + 1 mL ammonia buffer pH 9.6 + 50 µL diluted nickel bath	
Working electrode (WE)	MME (Multi Mode Electrode)	6.1246.020
Auxiliary electrode (AE)	Pt	6.0343.000
Reference electrode (RE)	Reference system: Ag/AgCl/KCl (3 mol/L)	6.0728.020
	Intermediate electrolyte: c(KCl) = 3 mol/L	6.1245.010
Parameters	Working electrode	DME
	Stirrer speed	2000 rpm
	Mode	DP
	Purge time	300 s
	Equilibration time	5 s
	Pulse amplitude	0.05 V
	Start potential	-0.7 V
	End potential	-1.1 V
	Voltage step	0.006 V
	Voltage step time	0.6 s
	Sweep rate	0.01 V/s
	Peak potential Ni	-0.9 V

Result:	Ni
	350 g/L

Determination of Ni



Ni
c = 350.122 g/L
+/- 1.281 g/L (0.37%)

