VA Application Note No. V - 112

Title:	Thiourea in nickel plating baths

Summary:	Thiourea is determined by cathodic stripping voltammetry (CSV) at the HMDE in ammonia buffer at pH 8.9. Chloride in the sample does not interfere with this determination.

Sample:	Ni plating bath containing chloride
Sample preparation:	none

Analysis of thiourea

Electrolyte	**Acetate solution:** c(sodium acetate, suprapur) = 1 mol/L **Perchlorate solution:** c($NaClO_4$) = 2.5 mol/L **Ammonia buffer:** c(HCl) = 1 mol/L + c(NH_3) = 3 mol/L
Measuring solution	10 mL ultrapure water + 10 µL sample + 250 µL acetate solution + 1 mL perchlorate solution adjust the pH to exactly 8.9 with ammonia buffer
Auxiliary electrode (AE)	Pt
Reference electrode (RE)	Ag/AgCl/KCl (3 mol/L) Bridge electrolyte: NaCl (3 mol/L)

Parameters

Working electrode	HMDE
Stirrer speed	2000 rpm
Mode	DP
Purge time	300 s
Deposition potential	+100 mV
Deposition time	30 s
Equilibration time	5 s
Pulse amplitude	50 mV

	Start potential	+100 mV
	End potential	-800 mV
	Voltage step	4 mV
	Voltage step time	0.1 s
	Sweep rate	40 mV/s
	Peak potential thiourea	-370 mV

Results:	thiourea
	6.8 mg/L

Determination of thiourea