

VA Application Note No. V - 140

Title:	Total antimony in an acid copper bath
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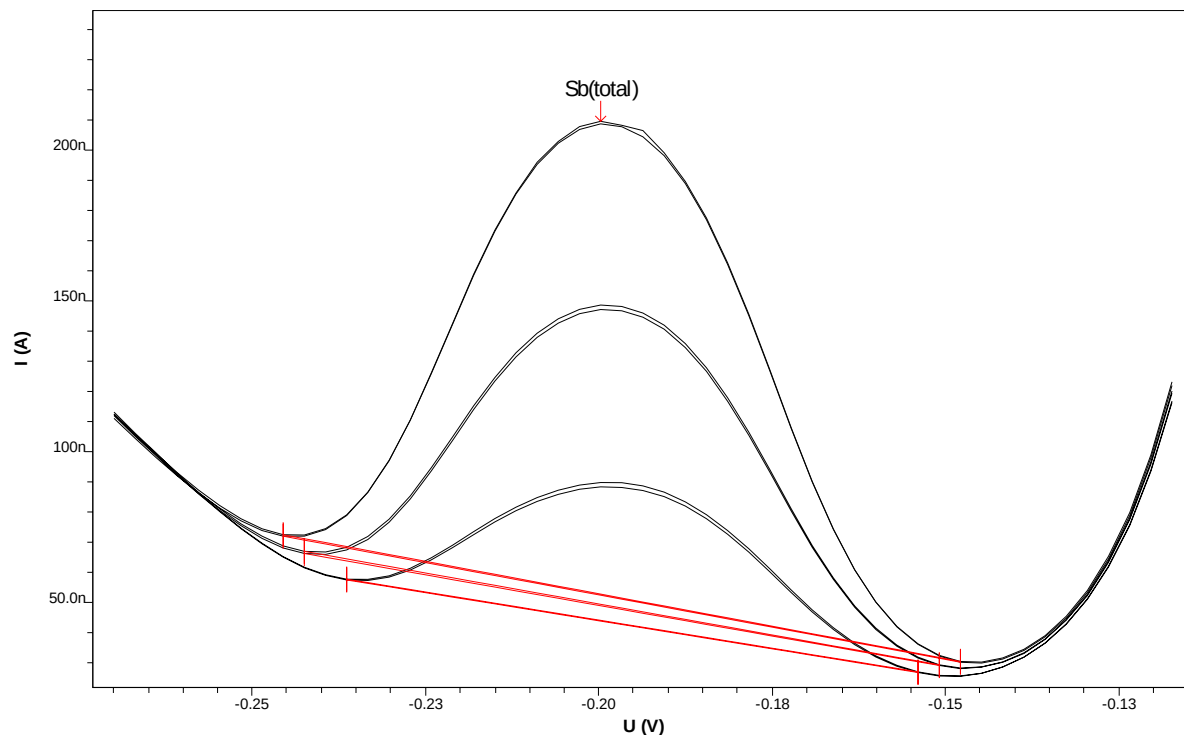
Summary:	The concentration of Sb(total) in an acid Cu bath is determined by anodic stripping voltammetry using hydrochloric acid as electrolyte. Due to the excess of Cu the deposition potential has to be chosen only 50 mV more negative than the Sb signal.
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Sample:	Acid Cu bath
Sample preparation:	Dilution 1:100

Analysis of Sb(total)		
Electrolyte	w(HCl) = 10%	
Measuring solution	15 mL electrolyte + 150 µL diluted Cu 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	HMDE
	Stirrer speed	2000 rpm
	Mode	DP
	Purge time	300 s
	Deposition potential	-0.25 V
	Deposition time	30 s
	Equilibration time	5 s
	Pulse amplitude	0.02 V
	Start potential	-0.27
	End potential	-0.12
	Voltage step	0.003 V
	Voltage step time	0.3 s
	Sweep rate	0.01 V/s
	Peak potential Sb(total)	-0.2 V

Results:	Sb(total)
	281.4 mg/L

Determination of Sb(total)



Sb(total)
c = 281.443 mg/L
+/- 4.343 mg/L (1.54%)

