VA Application Note No. V - 165

Title:	**Zinc in a phosphatation bath**

Summary:	The concentration of Zn in a zinc phosphatation bath is determined by polarography in ammonia buffer pH 9.3.

Sample:	Zinc phosphatation bath
Sample preparation:	Dilution 1:100

Analysis of Zn

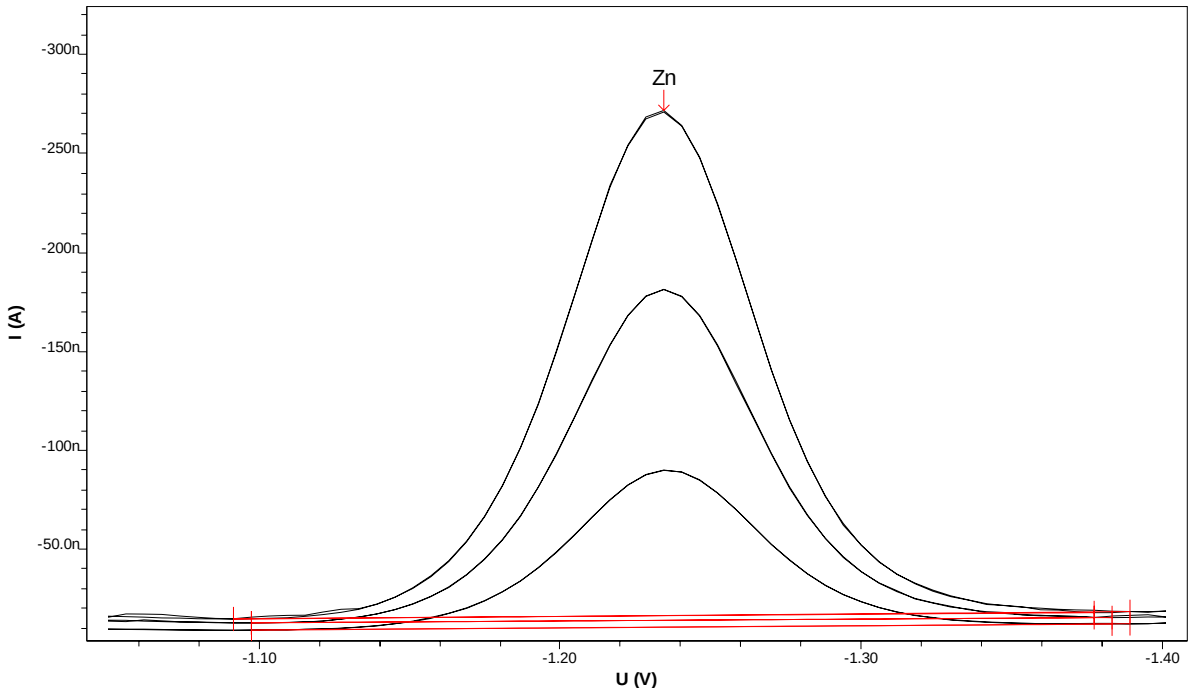
Ammonia buffer pH 9.3	$c(NH_4Cl)$ = 1 mol/L $c(NH_3)$ = 2 mol/L pH 9.3 adjusted with NH_3 or HCl	
Measuring solution	10 mL H_2O + 5 mL ammonia buffer pH 9.3 + 50 µL diluted phosphatation bath	
Working electrode (WE)	**MME** (Multi Mode Electrode)	6.1246.020
Auxiliary electrode (AE)	**Pt**	6.0343.000
Reference electrode (RE)	Reference system: Ag/AgCl/KCl (3 mol/L) Intermediate electrolyte: c(KCl) = 3 mol/L	6.0728.020 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	-1.05 V
End potential	-1.4 V
Voltage step	0.006 V
Voltage step time	0.6 s
Sweep rate	0.01 V/s
Peak potential Zn	-1.23 V

Results:	Zn
	18.1 g/L

Determination of Zn



Zn
c = 18.061 g/L
+/- 0.019 g/L (0.10%)