VA Application Note No. V - 102

Title:	Manganese in triphosphate

Summary:	Mn is determined by anodic stripping voltammetry (ASV) at the HMDE in alkaline solution.

Sample:	pentasodium triphosphate
Sample preparation:	2.5 g sample + approx. 30 mL ultrapure water + 1.25 mL c(H_2SO_4) = 96%, suprapur The solution is boiled for 30 min. Water is added to keep a constant volume. After cooling to room temperature the solution is made up to 50 mL.

Analysis of Mn

Electrolyte	tartrate solution: c(disodium tartrate) = 0.2 mol/L Zn solution: β(Zn^{2+}) = 10 mg/L
Measuring solution	10 mL ultrapure water + 0.1 mL digestion solution + 1 mL tartrate solution + 100 µL Zn solution adjust the pH to 10 ... 10.5
Working electrode (WE)	**MME** (Multi Mode Electrode) 6.1246.020
Auxiliary electrode (AE)	**Pt:** 6.0343.000
Reference electrode (RE)	Ag/AgCl/KCl (3 mol/L): 6.0728.020 + 6.1245.010

Parameters

Working electrode	HMDE
Stirrer speed	2000 rpm
Mode	DP
Purge time	400 s
Deposition potential	-1700 mV
Deposition time	90 s
Equilibration time	10 s
Pulse amplitude	**-75 mV**
Start potential	-1650 mV
End potential	-1300 mV

	Voltage step	6 mV
	Voltage step time	0.3 s
	Sweep rate	20 mV/s
	Peak potential Mn	-1530 mV

Results:	Mn
	10 µg/g

Determination of Mn