

VA Application Note No. V - 90

Title:	Manganese in drinking water
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Summary:	Mn is determined by anodic stripping voltammetry (ASV) at the HMDE in alkaline solution.
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Sample:	drinking water
Sample preparation:	none

Mn		
Electrolyte	borate buffer: c(Na ₂ B ₄ O ₇ · 10 H ₂ O) = 0.1 mol/L + c(NaOH) = 0.34 mol/L ammonia buffer: c(HCl) = 1 mol/L + c(NH ₃) = 3 mol/L	
Measuring solution	10 mL drinking water + 50 µL w(NH ₃) = 25%, suprapur + 20 µL Zn standard (β(Zn ²⁺) = 100 mg/L) + 500 µL ammonia buffer + 500 µL borate buffer → pH 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	200 rpm
	Mode	DP
	Purge time	300 s
	Deposition potential	-1650 mV
	Deposition time	60 s
	Equilibration time	10 s
	Pulse amplitude	-75 mV
	Start potential	-1650 mV
End potential	-1300 mV	

Voltage step	6 mV
Voltage step time	0.5 s
Sweep rate	12 mV/s
Peak potential Mn	-1450 mV

Results:	Mn
	21.4 µg/L

Determination of Mn

