VA Application Note No. V - 132

Title:	**Determination of iron in sulfuric acid**

Summary:	The concentration of Fe is determined by adsorptive stripping voltammetry at the HMDE with 1-nitroso-2-naphthol (1N2N) as complexing agent.

Sample:	Sulfuric acid
Sample preparation:	Dilution in water 1:50

Analysis of Fe

PIPES buffer pH 8	c(PIPES) = 1 mol/L adjust pH to 8.0 with NH_3 *PIPES: Piperazine-1,4-bis(2-ethanesulfonic acid)*
1N2N solution	c(1N2N) = 0.002 mol/L in water *1N2N: 1-Nitroso-2-naphthol*
Measuring solution	9 mL water + 0.2 mL PIPES buffer + 0.2 mL 1N2N solution + 1 mL diluted sample → adjust pH to 6.9 with NH_3
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	300 s
Deposition potential	-0.15
Deposition time	45 s
Equilibration time	10 s
Pulse amplitude	50 mV
Start potential	-0.25 V
End potential	-0.62 V
Voltage step	4 mV
Voltage step time	0.5 s
Sweep rate	8 mV/s
Peak potential Fe	-410 mV

Results:	Fe
	5.9 mg/L

Determination of Fe