

# VA Application Note No. V - 129

<b>Title:</b>	<b>Determination of total iron in the ppm range in phosphoric acid</b>
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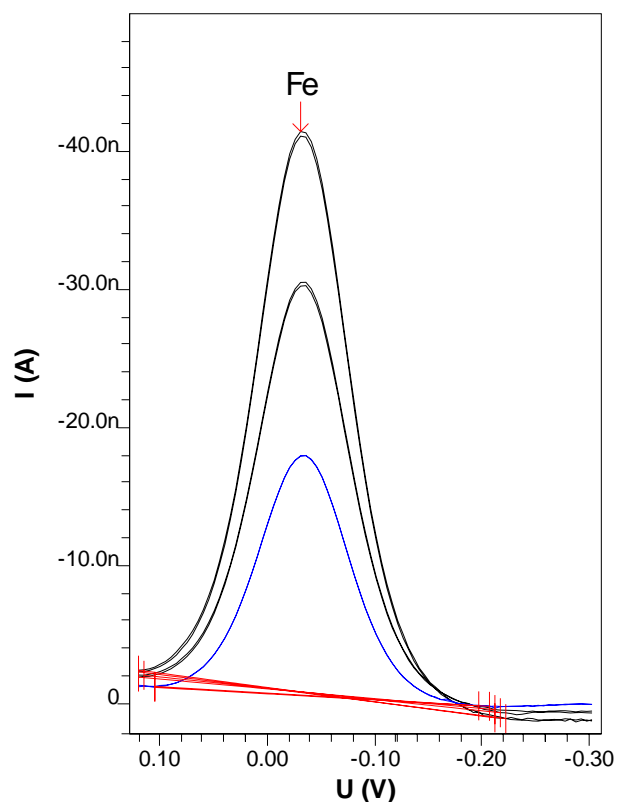
<b>Summary:</b>	<p>The concentration of Fe is determined polarographically in phosphoric acid. The method is suitable for iron in concentrations in the ppm range.</p> <p>Fe(II) and Fe(III) show signals with the same sensitivity.</p>
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<b>Sample:</b>	Phosphoric acid
<b>Sample preparation:</b>	none

Analysis of Fe(total)		
<b>Oxalate buffer pH 2.0</b>	c(ammonium oxalate) = 0.25 mol/L → adjusted to pH 2 with H <sub>2</sub> SO <sub>4</sub>	
<b>Measuring solution</b>	10 mL ammonium oxalate solution + 10 µL phosphoric acid sample	
<b>Working electrode (WE)</b>	<b>MME</b> (Multi Mode Electrode) 6.1246.020	
<b>Auxiliary electrode (AE)</b>	<b>Pt</b> 6.0343.000	
<b>Reference electrode (RE)</b>	Ag/AgCl/KCl (3 mol/L): 6.0728.020 + 6.1245.010	
<b>Parameters</b>	Working electrode	SMDE
	Stirrer speed	2000 rpm
	Mode	DP
	Purge time	300 s
	Deposition potential	
	Deposition time	0
	Equilibration time	5 s
	Pulse amplitude	50 mV
	Start potential	+0.12 V
	End potential	-0.3 V
	Voltage step	5 mV
	Voltage step time	0.5 s
	Sweep rate	10 mV/s
	Peak potential Fe	-40 mV

<b>Results:</b>	Fe
	750 mg/L

## Determination of Fe



Fe  
 $c = 746.750 \text{ mg/l}$   
 $\pm 13.489 \text{ mg/l (1.81\%)}$

