

VA Application Note No. V - 163

Title:	Total iron in degreasing bath (triethanolamine-bromate method)
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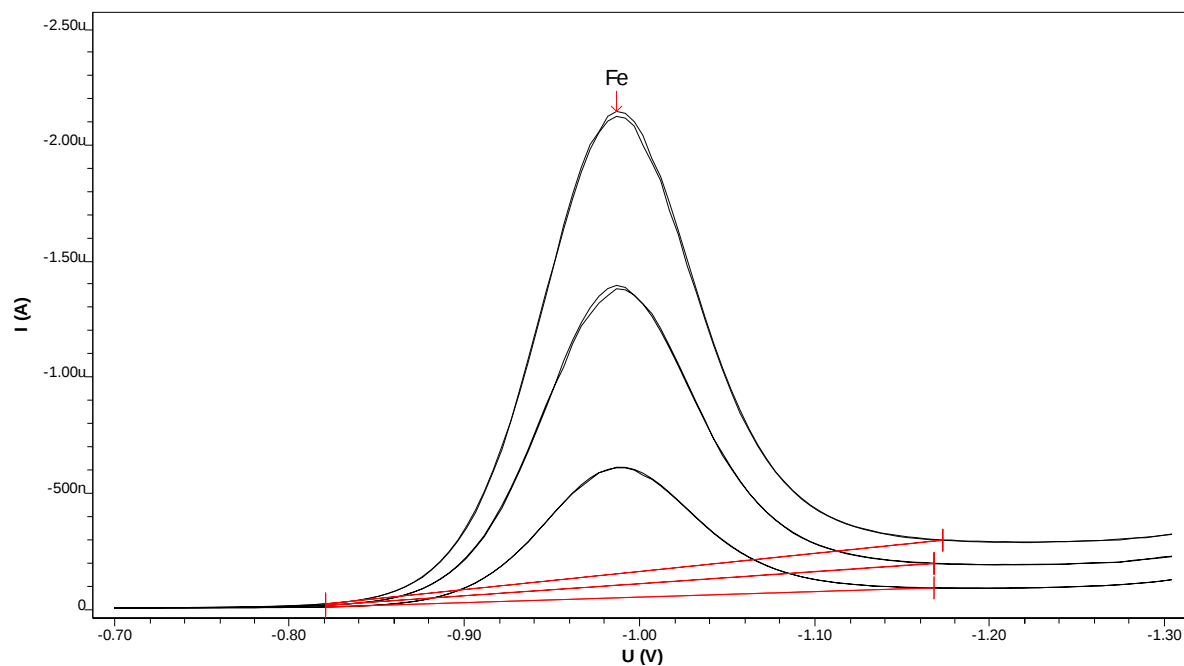
Summary:	The concentration of Fe(total) is determined by polarography in an alkaline electrolyte containing triethanolamine (TEA) and KBrO_3 . All reagents typically contain iron impurities. Therefore a subtraction of the reagent blank is recommended.
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Sample:	Degreasing bath
Sample preparation:	None

Analysis of Fe(total)		
Supporting electrolyte	$c(\text{NaOH}) = 0.3 \text{ mol/L}$ $c(\text{KBrO}_3) = 0.1 \text{ mol/L}$ $c(\text{TEA}) = 0.05 \text{ mol/L}$ TEA: triethanolamine	
Measuring solution	5 mL H_2O + 5 mL supporting electrolyte + 50 μL degreasing 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)	6.0728.020
	Intermediate electrolyte: $c(\text{KCl}) = 3 \text{ mol/L}$	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	-0.7 V
	End potential	-1.3 V
	Voltage step	0.005 V
	Voltage step time	0.5 s
	Sweep rate	0.01 V/s
	Peak potential Fe	-1.0 V

Results:	Fe (blank subtracted)
	71.8 mg/L

Determination of Fe(total)



Fe
 c = 77.734 mg/L
 +/- 0.814 mg/L (1.05%)

