VA Application Note No. V - 122

Title:	**Determination of total iron in deionized water (Triethanolamine-bromate-method)**

Summary:	The concentration of Fe(total) is determined in deionized water. The method is suitable for iron concentrations down to the mid µg/L range. Electrochemical deposition is not applicable for this method. A subtraction of the reagent blank is recommended. Fe(II) and Fe(III) give signals with the same sensitivity.

Sample:	Deionized water
Sample preparation:	none

Analysis of total Fe

Electrolyte c(triethanolamine) = 0.01 mol/L
+ c($KBrO_3$) = 0.1 mol/L
+ c(NaOH) = 0.3 mol/L

Measuring solution 10 mL deionized water sample
+ 2 mL electrolyte

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	
Deposition time	0 s
Equilibration time	10 s
Pulse time	0.06 s
Pulse amplitude	50 mV
Start potential	-600 mV
End potential	-1300 mV
Voltage step	6 mV
Voltage step time	0.5 s
Sweep rate	12 mV/s
Peak potential Fe	-930 mV

Results:	Fe(total) (blank subtracted)
	121 µg/L

Determination of total Fe