

Application Memo

Quantitative Determination of Copper (Cu⁺) in Solution

Industry	Inorganic chemical industry
Instrument	Automatic potentiometric titrator
Measurement method	Oxidation-reduction titration
Standards	

1. Overview

After adding 0.4 mol / L ammonium iron (III) sulfate and 1 mol / L sulfuric acid solution to the sample including Cu⁺, it is titrated with 0.1 mol / L cerium sulfate (IV) solution. The endpoint is the maximum inflexion on the titration curve. The copper ion concentration is calculated from the titration volume.

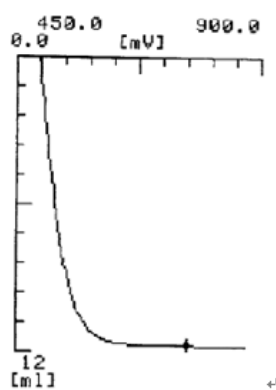
2. Apparatus

Main unit	Potentiometric automatic titrator (preamplifier STD)
Electrode	Platinum electrode Ceramic reference electrode

3. Reagents

Titrant	0.1mol/L-Cerium(IV) Sulfate
Solvent	Water
Additive:	0.4 mol/L ammonium iron sulfate (III) 1 mol/L sulfuric acid solution

4. Example



—Titration curve—

—Measurement results—

	Sample (mL)	Titer (mL)	Concentration (g/L)
1	25.0	11.8313	3.008
2	25.0	11.6027	2.949
3	25.0	11.4609	2.913
Average			2.957
SD			0.048
RSD(%)			1.6

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