

Application Memo

Copper Ion in Plating Solution

Industry	Inorganic chemical industry
Instrument	Automatic potentiometric titrator
Measurement method	Redox titration
Standards	

1. Overview

When potassium iodide is added to diluted acetic acid of Cu^{2+} , CuI precipitates where free iodine is obtained. Titrate the iodine with sodium thiosulfate to quantify copper (Cu^{2+}) in the solution. In this reaction, copper (Cu^{2+}) works as univalent oxidant as below:



Following the above preprocess, titration goes on to the endpoint with 0.1mol/L sodium thiosulfate in order to measure copper ion in plating solution. The endpoint is the maximum inflexion on the titration curve. The concentration of copper ion is calculated from the titration volume of sodium thiosulfate.

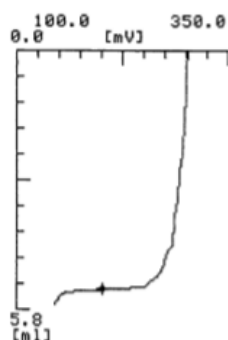
2. Apparatus

Main unit	Automatic potentiometric titrator (preamplifier STD)
Electrode	Platinum electrode Ceramic reference electrode

3. Reagents

Titrant	0.1mol/L sodium thiosulfate solution
Solvent	Pure water
Additive	Acetic acid, 10% ammonium acetate, Potassium iodide (powder)

4. Example



—Titration curve—

—Measurement results—

	Sample (mL)	Titer (mL)	Copper ion (g/L)
1	2.0	5.3705	17.06
2	2.0	5.3729	17.07
3	2.0	5.3654	17.05
Average			17.06
SD			0.012
RSD(%)			0.072

Please feel free to contact us for any further information.
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