

Application Memo

Free Sulfuric Acid in Electrolyte

Industry	Nonferrous metal
Instrument	Automatic potentiometric titrator
Measurement method	Acid-base titration
Standards	

1. Overview

The concentration of free sulfuric acid in the electrolytic solution is determined by potentiometry of the test sample. First add pure water and 10w/v% potassium fluoride, and titrate with 1mol/L sodium hydroxide up to the endpoint.

The endpoint is the maximum inflexion point on the titration curve. The concentration of free sulfuric acid is obtained from the titration volume of sodium hydroxide.

When aluminum ion and iron (III) ions exist in the electrolyte solution, hydroxide is generated and it leads to excessive titration. These ions are masked by adding fluoride to prevent an excessive titration.

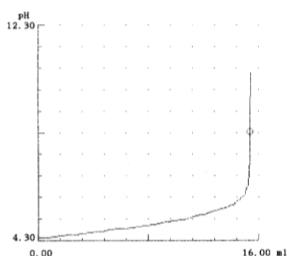
2. Apparatus

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

3. Reagents

Titrant	1mol/L potassium hydroxide
Solvent	Pure water, 10w/v% potassium fluoride

4. Example



—Titration curve—

—Measurement results—

	Sample (mL)	Free sulfuric acid (g/L)
1	5.0	151.48
2	5.0	151.24
3	5.0	151.21
Average		151.31
SD		0.15
RSD(%)		0.10

Please feel free to contact us for any further information.
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