

## Application Memo

# Sodium Sulfate in Cosmetics

Industry	Cosmetics & soap
Instrument	Automatic potentiometric titrator
Measurement method	Redox titration
Standards	

### 1. Overview

Lead sulfate precipitates when sodium sulfate contained in cosmetics is titrated with lead ion solution. With potassium ferricyan-ferrocyanide indicator is added, as sulfate ion decreases, Fe (II) ion changes to Fe (III) ion also changing electrode potential. At the endpoint of sulfate ion precipitation, only Fe (III) ion remains with a sharp potential inflexion, which is detected by the platinum electrode, and thus concentration of sodium sulfate is obtained from the titration volume. Depending on composition, some cosmetics may not show a sharp inflexion, however, endpoint can be determined by setting an appropriate condition for detecting the rate of change.

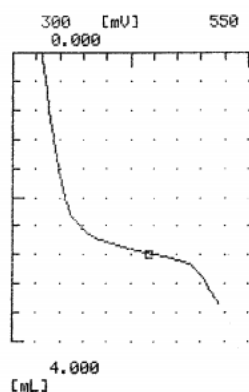
### 2. Apparatus

Main unit	Automatic potentiometric titrator (preamplifier STD)
Electrode	Combined platinum electrode

### 3. Reagents

Titrant	0.05mol/L lead nitrate
Solvent	Pure water, 2-propanol
Indicator	Potassium ferricyan-ferrocyanide test solution 0.03mol/L hydrochloric acid

### 4. Example



-Titration curve-

-Measurement results-

	Sample (g)	Titer (mL)	Conc. (%)
1	5.0030	2.7913	0.3993
2	5.0053	2.7930	0.3994

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