KYOTO ELECTRONICS MANUFACTURING CO.,LTD.

TIQ-01066enL

Application Memo

Purity of Ammonium Peroxodisulfate

Industry	Inorganic chemical industry
Instrument	Automatic potentiometric titrator
Measurement method	Photometric titration
Standards	JIS K8252

1. Overview

Purity of ammonium peroxodisulfate ($(NH_4)_2S_2O_8$) is determined according to JIS K 8252-2010. The test sample is first added with pure water to dissolve, and with phosphoric acid and 0.1mol/L ammonium ferric sulfate. Then, the sample is back titrated with 0.02mol/L potassium permanganate. The endpoint is the intersecting point on the titration curve where the titrant turns to light reddish color which is determined by photometric sensor. The concentration of ammonium peroxodisulfate is calculated from the titration volume of the potassium permanganate solution. Peroxodisulfate salt turns quantitatively to ferric salt by reaction with $FeSO_4$ at room temperature. The remaining $FeSO_4$ is titrated with the $KMnO_4$ reference solution. The titration volume is subtracted from blank test so that required amount of $FeSO_4$ for ferric salt can be obtained, which is converted to the concentration of peroxodisulfate salt.

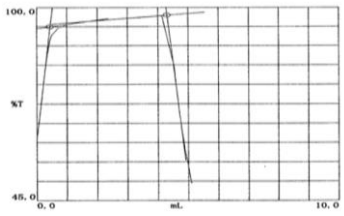
2. Apparatus

Main unit	Automatic potentiometric titrator (preamplifier PTA)
Electrode	Photometric sensor Interference filter (530nm)

3. Reagents

Titrant	0.02mol/L potassium permanganate
Solvent	Pure water
Additive	0.1mol/L ammonium ferric sulfate, Phosphoric acid

4. Example



—Titration curve—

—Measurement results—

	Sample (g)	Titer (mL)	$(NH_4)_2S_2O_8$ (%)
1	0.4021	4.3123	104.67
2	0.4033	4.1597	104.79
3	0.4021	4.3352	104.61
Average			104.69
SD			0.09
RSD(%)			0.9

Please feel free to contact us for any further information.

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