

Application Memo

Quantitative Analysis of Thiamine Disulfide

Industry	Pharmaceutical
Instrument	Automatic potentiometric titrator
Measurement method	Acid-base titration
Standards	Japanese pharmacopoeia

1. Overview

Thiamine disulfide (molecular formula: $C_{24}H_{34}N_8O_4S_2$, mass: 562.71) is a kind of medicine which supplies vitamin B1 as derivative in human organism, and its quantification is prescribed in Japanese pharmacopoeia (JP).

The test sample is dissolved in glacial acetic acid and is titrated with 0.1mol/L perchloric acid (acetic acid solution). The endpoint is determined by the inflexion point on titration curve. The sample concentration is calculated from the titration volume of the titrant up to the endpoint.

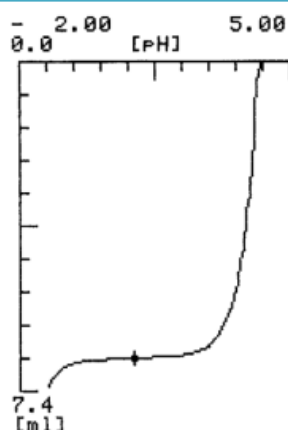
2. Apparatus

Main unit	Automatic potentiometric titrator (preamplifier STD)
Electrode	pH glass electrode Double junction reference electrode Temperature compensation electrode

3. Reagents

Titrant	0.1mol/L perchloric acid (acetic acid solution)
Solvent	Glacial acetic acid

4. Example



-Titration curve-

-Measurement results-			
	Sample (g)	Titer (mL)	Conc. (%)
1	0.2010	6.6922	93.67
2	0.2006	6.7025	94.01
3	0.2006	6.6864	93.78
Average			93.82
SD			0.17
RSD(%)			0.18

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