

Application Memo Tetramethylethylenediamine

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

1. Overview

Depending on sample composition, a few endpoints may appear in measurement of tetramethylethylenediamine by potentiometric titration, which require comparison with the color changes of the indicators. In this application, the first endpoint (EP) corresponds to the color change of the mixture of bromothymol blue and phenol red indicators, and the second EP corresponds to the color change of the bromophenol blue indicator. After adding pure water and the indicators to the sample, the sample is titrated with 0.05mol/L sulfuric acid. The EPs are the inflexion points on the titration curve match the color changes due to the indicators. The concentration of tetramethylethylenediamine is calculated from the titration volume difference of sulfuric acid for both EPs.

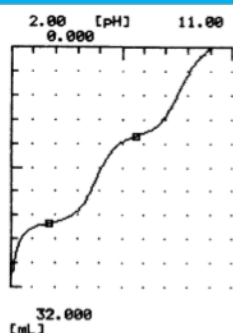
2. Apparatus

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

3. Reagents

Titrant	0.005mol/L sulfuric acid
Solvent	Pure water
Indicator	Bromothymol blue, Phenol red, Bromophenol blue

4. Example



—Titration curve—

—Measurement results—				
	Sample (g)	Titer EP1 (mL)	Titer EP2 (mL)	Concentration (%)
1	0.3114	11.8521	23.5498	43.91
2	0.3125	11.7488	23.5761	44.24
3	0.3223	12.2587	24.1430	43.10
Average				43.75
SD				0.59
RSD(%)				1.3

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