

Application Memo

Acid Number of Insulating Oil

Industry	Petrochemicals
Instrument	Automatic potentiometric titrator
Measurement method	Acid-base titration
Standards	JIS C2101, JPI-5S-57-99, ASTM D974, BS 148

1. Overview

To maintain the acid number within specified level is the key of quality control of the insulating oil. Acid number is expressed by potassium hydroxide in mg required to neutralize free fatty acid in 1g of oil.

Measurement of acid number of insulating oil is specified in above standards.

The oil sample is titrated with 0.05mol/L potassium hydroxide ethanol as reagent and with toluene ethanol (3+2) as solvent and with alkali blue 6B ethanol as indicator, and the endpoint is detected on the titration curve. The acid number is calculated from the titration volume of reagent reaching the endpoint.

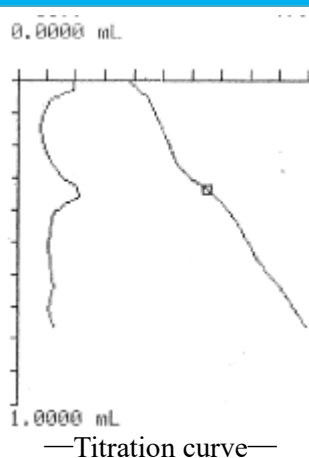
2. Apparatus

Main unit	Automatic potentiometric titrator (preamplifier PTA)
Electrode	Photometric sensor Interference filter (650nm)

3. Reagents

Titrant	0.05mol/L potassium hydroxide·ethanol solution
Solvent	Toluene + ethanol (3+2) mixture
Indicator	Alkali blue 6B ethanol solution

4. Example



—Measurement results—			
	Sample (g)	Titer (mL)	Acid number (mgKOH/g)
1	20.0070	0.3287	0.003
2	20.0090	0.3228	0.002
3	20.0096	0.3313	0.003
Average			0.003
SD			0.001
RSD(%)			20

Please feel free to contact us for any further information.

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