

## Application Memo

# Total base number of Lubricant

Industry	Petrochemicals
Instrument	Automatic potentiometric titrator
Measurement method	Acid-base titration
Related standard	JIS K2501, ASTM D4739

## 1. Overview

Measurement of total base number of petroleum products and lubricant is measured according to above standards by potentiometric titration. A test sample is dissolved in mixture of toluene, 2-propanol and a small amount of water, and the sample is titrated with 0.1mol/L hydrochloric acid + 2-propanol solution until the endpoint is found on titration curve. If any clear inflexion is unable to obtain on titration curve, the endpoint is determined by pH reading of either nonaqueous acid or non-aqueous base buffer. Base number is calculated from the titration volume of hydrochloric acid. This method is called the hydrochloric acid method to distinguish from the perchloric acid method. The basic component of lubricant dissolved in mixed solvent are basic salts like organic base, inorganic base, amino compound, weak acid chloride, polyacid base.

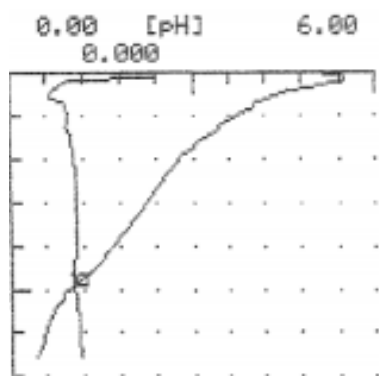
## 2. Apparatus

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

## 3. Reagents

Titrant	0.1mol/L hydrochloric acid + 2-Propanol Solvent
Solvent	Toluene, 2-Propanol, Water

## 4. Example



-Titration curve-

-Measurement results-			
	Sample (g)	Titer (mL)	Total base number (mg/g)
1	1.0266	1.8997	10.288
2	1.0170	1.8713	10.229
3	1.0076	1.8706	10.320
Mean			10.279
SD			0.046
RSD(%)			0.45

Please feel free to contact us for any further information.

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