

Application Memo

Total Acid Number of Bio Diesel Fuel (BDF)

Industry	Petrochemicals
Instrument	Automatic potentiometric titrator
Measurement method	Acid-base titration
Standards	EN 14104, JIS K2501, ASTM D664

1. Overview

For the quality control of bio diesel fuel (BDF), acid number measurement is important because the number increases when the fuel itself degrades or BDF is not properly produced. The acid number of BDF is measured according to EN or JIS standards by potentiometric titration with 0.1mol/L potassium hydroxide ethanol solution until the endpoint is found on the titration curve. The acid number of bio diesel fuel is calculated from the titration volume of potassium hydroxide 2-propanol solution consumed in reaching the endpoint.

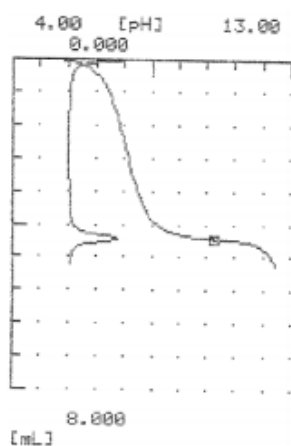
2. Apparatus

Main unit	Automatic potentiometric titrator (preamplifier STD)
Electrode	Combined glass electrode (Internal solution: 1M-LiCl in ethanol) Temperature compensation electrode

3. Reagents

Titrant	0.1mol/L potassium hydroxide + 2-propanol solution
Solvent	Diethyl ether + ethanol (1 + 1)

4. Example



—Titration curve—

—Measurement results—

	Sample (g)	Titer (mL)	Acid number (mgKOH/g)
1	20.0399	4.3960	1.217
2	20.0209	4.3863	1.215
3	20.0124	4.3800	1.214
Average			1.216
SD			0.001
RSD(%)			0.1

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