# KYOTO ELECTRONICS MANUFACTURING CO., LTD.

TIA-99002enL

## Application Memo Peroxide Value (POV) of Kerosene

IndustryPetroleumInstrumentAutomatic poteMeasurement methodRedox titrationStandards

Petroleum Automatic potentiometric titrator Redox titration

### 1. Overview

The extent of oxidation of kerosene can be known by measuring peroxide value. A kerosene sample is tested as follows: the test sample dissolved in solvent is added with potassium iodide, and then, free iodine is titrated with sodium thiosulfate up to the endpoint. The peroxide value is obtained from the titration volume.

 $\begin{array}{l} 2KI+ROOH+H_2O \rightarrow I_2+2KOH+ROH\\ I_2+2Na_2S_2O_3 \rightarrow Na_2S_4O_6+2NaI \end{array}$ 

#### 2. Apparatus

Main unit	Automatic potentiometric titrator (preamplifier STD)
Electrode	Combined Pt electrode for micro titration

#### 3. Reagents

Titrant	0.01mol/L sodium thiosulfate		
Solvent	2,2,4 trimethyl pentane and acetic acid (2+3)		
Additive	Saturated potassium iodide		
Inactive gas	Nitrogen gas		

#### 4. Example

- 350.0 - 150.0 0.0 [mV]	—Measurement results—			
		Sample	Titer	POV
H		(g)	(mL)	(meq/kg)
	1	5.0020	6.2479	12.468
H	2	4.9912	5.8889	11.776
E/	3	5.0012	6.1265	12.228
έλ	Average			12.157
[	SD			0.351
6.4 [m]]	RSD(%)			2.89

-Titration curve-

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<Contact>Kyoto Electronics Manufacturing Co., Ltd.

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