KYOTO ELECTRONICS MANUFACTURING CO.,LTD.

TIQ-99316enL

Application Memo

COD of Industrial Effluent

Industry	Environmental
Instrument	Automatic potentiometric titrator
Measurement method	Redox titration
Standards	JIS K 0102

1. Overview

According to the test method for chemical oxygen demand by JIS K 0102-2019 -17, the sulfate acid sample is reacted with potassium permanganate boiled at 100 degree for 30 minutes, and COD is calculated from consumed potassium permanganate. In this application memo, the remaining potassium permanganate reacts with sodium oxalate, and the residual sodium oxalate is titrated with 5mmol/L potassium permanganate.

$$2KMnO_4 + 5Na_2C_2O_4 + 8H_2SO_4 \rightarrow K_2SO_4 + 2MnSO_4 + 5Na_2SO_4 + 10CO_2 + 8H_2O$$

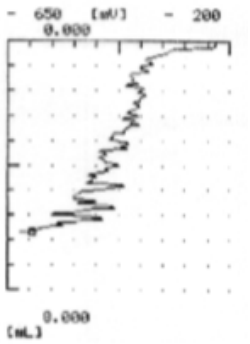
2. Apparatus

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

3. Reagents

Titrant	5mmo1/L potassium permanganate solution
Solvent	Sulfuric acid（1+2）,20w/v% silver nitrate, 12.5mmol/L sodium oxalate

4. Example



—Titration curve—

—Measurement results—

	Sample (mL)	Titer (mL)	COD_{Mn} (mg/L)
1	100.0	6.2600	10.43
2	100.0	6.2150	10.34
3	100.0	6.2450	10.40
Average			10.39
SD			0.05
RSD(%)			0.4

Please feel free to contact us for any further information.

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