

Application Memo

Calcium Oxide in Cement (NN indicator)

Industry	Inorganic chemical industry
Instrument	Automatic potentiometric titrator
Measurement method	Chelatometric titration
Standards	JIS R 5202, ISO 680

1. Overview

Calcium oxide (quick lime) contained in cement is measured as follows:
After test sample is pretreated according to JIS test method, add 0.02mol/L EDTA up to 1mL before the expected titration volume is reached. Add potassium hydroxide to adjust pH to 12.7~13.2. Then, add the indicator and titrate with 0.02mol/L EDTA.
The endpoint is determined by the intersection of the color change (NN indicator) on the titration curve.
The concentration of Calcium oxide is calculated from titration volume of EDTA.

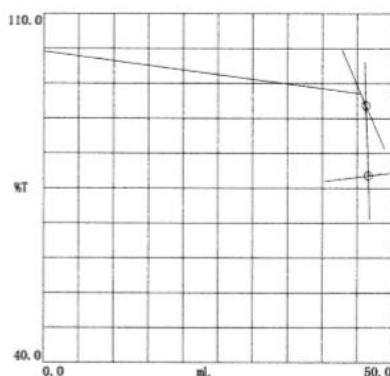
2. Apparatus

Main unit	Automatic potentiometric titrator (preamplifier PTA)
Electrode	Photometric sensor, Interference filter (630nm)

3. Reagents

Titrant	0.02mol/L EDTA solution (f = 1.00)
Solvent	Pure water Perchloric acid (60%), Hydrochloric acid (1+1), Ammonia water, Ethanol, Triethanolamine (1+1), 3mol/L potassium hydroxide solution Methyl red indicator NN indicator 0.5g of 2-hydroxy-1-(2'-hydroxy-4'-sulfo-1'-naphthylazole) -3-naphthoic acid and 50g potassium sulfate are mixed and crushed evenly, stored in an amber bottle

4. Example



—Titration curve—

—Measurement results—

	Sample (mL)	Titer (mL)	Calcium oxide (g/L)
1	0.9997	46.6221	64.97
2	0.9997	46.6370	64.99
3	0.9997	46.5594	64.88
Average			64.95
SD			0.057
RSD(%)			0.088

Please feel free to contact us for any further information.

< Contact > Kyoto Electronics Manufacturing Co., Ltd.

Overseas Sales & Marketing Sect.

<http://www.kyoto-kem.com/en/contact/form.php>