

Application Memo

Industry	Inorganic chemical industry
Instrument	Automatic potentiometric titrator
Measurement method	Precipitation titration
Standards	JIS R 5202

Chlorine ion of cement is determined according to JIS R 5202-2015 Methods for chemical analysis of cements.

After dissolving the sample in nitric acid and adding a chloride ion reference solution to raise sensitivity, add hydrogen peroxide solution to oxidize coexisting side reaction components. Then, cool it to room temperature, and titrate with 0.005mol/L silver nitrate up to the endpoint, which is the maximum inflexion point on the titration curve. The chlorine ion concentration is calculated from the titration volume of silver nitrate.

Main unit Automatic potentiometric titrator (preamplifier STD)

Electrode Chlorine ion selective electrode
Mercury sulfate reference electrode

Titrant 0.005mol/L silver nitrate solution

Solvent Pure water

Additive Nitric acid (SG 1.38), Hydrogen peroxide (30% approx.)
0.005mol/L chloride ion reference liquid (Sodium chloride solution)
2mol/L nitric acid solution (for blank test)

—Measurement results—			
	Sample (g)	Titer (mL)	Chlorine ion (%)
1	5.0048	6.0331	0.00327
2	5.0050	6.3288	0.00431
3	5.0057	6.3364	0.00434
Average			0.00397

—Titration curve—