

## Application Memo Chlorine Ion in Dust

|                    |                                   |
|--------------------|-----------------------------------|
| Industry           | Inorganic chemical industry       |
| Instrument         | Automatic potentiometric titrator |
| Measurement method | Precipitation titration           |
| Standards          |                                   |

### 1. Overview

Chlorine ion concentration in dust is measured by titration of a water diluted sample. First, the sample is added with the 0.005mol/L sodium chloride and nitric acid solution, and then titrated with the 0.1mol/L silver nitrate solution up to the endpoint. The endpoint is the maximum inflexion on the titration curve. Chlorine ion concentration is calculated from the titration volume of silver nitrate.

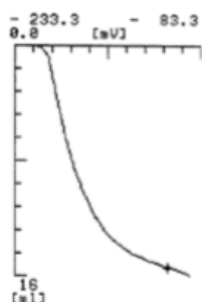
### 2. Apparatus

|           |   |
|-----------|---|
| Main unit | Automatic potentiometric titrator (preamplifier STD)    |
| Electrode | Silver electrode<br>Mercury sulfate reference electrode |

### 3. Reagents

|          |  |
|----------|--|
| Titrant  | 0.005mol/L silver nitrate solution                 |
| Additive | 0.005mol/L sodium chloride<br>Nitric acid solution |

### 4. Example



—Titration curve—

—Measurement results—

|         | Sample<br>(g) | Titer<br>(mL) | Chlorine ion<br>(ppm) |
|---------|---------------|---------------|-----------------------|
| 1       | 2.0           | 15.4970       | 9180                  |
| 2       | 2.0           | 15.5169       | 9197                  |
| 3       | 2.0           | 15.4997       | 9182                  |
| Average |               |               | 9186                  |
| SD      |               |               | 10                    |
| RSD(%)  |               |               | 0.10                  |

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 <Contact> Kyoto Electronics Manufacturing Co., Ltd.  
 Overseas Sales & Marketing Sect.  
<http://www.kyoto-kem.com/en/contact/form.php>