

Application Memo

Determination of Nitric Acid and Fluoric Acid in Pickling Solution

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

1. Overview

After adding acetone to the sample, nitric acid and fluoric acid concentration is measured by titration with 0.1mol/L potassium hydroxide 2-propanol solution. The endpoints are the maximum inflexions on the titration curve. The nitric acid and fluoric acid concentrations are calculated using the titration volume data of the titrant.

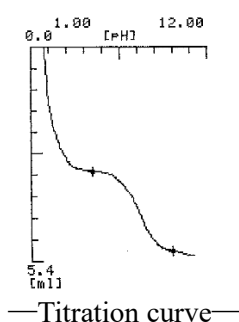
2. Apparatus

| | |
|-----------|---|
| Main unit | Automatic potentiometric titrator (preamplifier STD) |
| Electrode | pH glass electrode Ceramic reference electrode Temperature compensation electrode |

3. Reagents

| | |
|---------|--|
| Titrant | 0.1mol/L potassium hydroxide 2-propanol solution |
| Solvent | Acetone |

4. Example



—Measurement results—

| | Sample (g) | HNO ₃ | | HF | |
|---------|---------------|------------------|--------------|---------------|--------------|
| | | Titer (mL) | Conc. (%) | Titer (mL) | Conc. (%) |
| 1 | 1.0075 | 3.1713 | 19.834 | 19.834 | 4.0198 |
| 2 | | 3.1506 | 19.704 | 19.704 | 4.0486 |
| 3 | | 3.1621 | 19.776 | 19.776 | 4.0317 |
| Average | | | 19.771 | | 4.0334 |
| SD | | | 0.065 | | 0.014 |
| RSD(%) | | | 0.33 | | 0.36 |

Please feel free to contact us for any further information.
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