

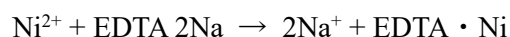
Application Memo

Nickel in Nickel Plating Solution

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

1. Overview

This application memo shows a measuring method for concentration of nickel in nickel plating solution. Here, we use a mixture of nickel chloride and nickel sulfate an alternative to the plating solution. The sample liquid is titrated with 0.1mol/L EDTA 2Na solution. The titration is chelatometric using photometric detector. The endpoint is determined by the color change of the Murexide indicator (yellow→blue). The amount of nickel is calculated from the titration volume of 0.1mol/L EDTA 2Na consumed in the titration.



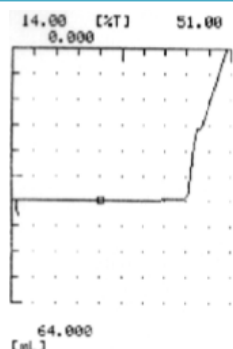
2. Apparatus

| | |
|-----------|--|
| Main unit | Automatic potentiometric titrator (preamplifier PTA) |
| Detector | Photometric sensor Interference filter (630nm) |

3. Reagents

| | |
|-----------|---|
| Titrant | 0.1mol /L EDTA 2Na solution |
| Additive | Ammonium chloride (1mol/L NH ₄ Cl(53.5g/L)) Ammonia water (1+10), commercially sold ammonia water diluted by 1:10 |
| Indicator | Murexide powder mixture (0.1g Murexide and 10g sodium chloride) |

4. Example



—Titration curve—

| | Sample (mL) | Titer (mL) | Nickel (g/L) |
|---------|-------------|------------|--------------|
| 1 | 2.0 | 38.1602 | 11.20 |
| 2 | 2.0 | 38.0772 | 11.18 |
| 3 | 2.0 | 37.9531 | 11.14 |
| Average | | | 11.17 |
| SD | | | 0.03 |
| RSD(%) | | | 0.3 |

Please feel free to contact us for any further information.
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