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| <b>Measurement of ZnO Purity</b> | <b>[SJ-MM-010]</b>                    |
|                                  | 2005-08-04<br>Supersedes prior issues |
|                                  | <b>Quality Assurance</b>              |

**Test procedure**

1. Weigh a sample by 0.7~0.8g
2. Ignite the sample at 600 °C until a constant weight is obtained.
3. Cool and take the powder into 50ml of H<sub>2</sub>O solution.
4. Heat the solution with 20ml of Hydrochloric acid and 3 drops of Nitric acid at low temperature and raise the temperature gradually.
5. Cool and add H<sub>2</sub>O up to 100ml.
6. Take 25ml without insoluble matter in the mixture.
7. Put 10ml of Acetic Acid Ammonium Buffer Solution into the solution and control pH 5.0~5.5 with diluted ammonia water.
8. Add water up to 100ml, and titrate with 0.05mol Ethylene Diamine Tetra Acetic Acid Disodium Solution.
9. The end point is when the color of solution turns from pale red to yellow.
10. 0.05mol Ethylene Diamine Tetra Acetic Acid Disodium Solution 1ml = 4.069mg ZnO

**Calculation**

$$\text{ZnO Content(\%)} = \frac{\text{consumption(ml)} \times 4.069(\text{mg})}{\text{Sample(g)} \times 25/100(\text{ml}) \times 100(\text{mg})/1(\text{g})} \times 100$$