

# Assay of ZnO\_ICP Method

[SJ-MM-035]

2014-08-04  
REV.0

Quality Assurance Dept.

## Test procedure

1. Add sample 0.3g, nitric acid 7ml and hydrofluoric acid 3ml into each Control Vessel and sample vessel.
2. Fix the vessel with pipewrench after removing the moisture outside of vessel completely.
3. Attach the temperature sensor and pressure sensor onto Control vessel.
4. Do preprocess after installing it to microwave.
5. Check if sample is fully melted by naked eye.
6. Dilute 5) with distilled water 50g.
7. Dilute sample 0.5g form 6) with distilled water 50g.
8. Separately, make calibration curve after making 5,10,25,50ppm Zn standard liquid and conduct ICP
9. Conduct test liquid in ICP then calculate the amount of Zn(201.548nm) by calibration curve.
10. Calculate content of ZnO as below.

$$\text{ZnO (\%)} = \frac{\text{Calculated Zn(ppm)} * \text{Dilution magnification} * \text{ZnO molecular weight}(81.37)}{\text{Zn molecular weight (65.4)} * \% (10,000)}$$

### **Microwave condition**

120°C increase 15min → 120°C maintain 5min → 220°C increase 10min → 220°C maintain 15min

### **ICP condition**

Wavelength : 201.548 nm

Plasma : Argon gas (more than 99.99 v/v%)