

# Measurement of TiO<sub>2</sub> purity

[SJ-MM-009]

2010-06-04

Supersedes prior issues

Quality Assurance

## Test procedure

1. Take powder sample more than 1g and sinter the sample in a electric oven at 600 °C for 2 hours to get rid of organic matters.
2. Take sintered powder by 1g into the flask(Fic. B) of 5ml H<sub>2</sub>O, 99% conc. H<sub>2</sub>SO<sub>4</sub> 30ml, NH<sub>4</sub>SO<sub>4</sub> 12g and heat the mixture up to 200 °C.
3. Cool down the mixture and add H<sub>2</sub>O 120ml and 36.5% HCl 40ml and dissolve the mixture completely while keeping temperature less than 50 °C.
4. Add 3g of Al powder into the flask(B) and let H<sub>2</sub> gas pass to Bottle(A) through U tube(C).
5. Once H<sub>2</sub> gas come out completely, the solution become purple blue color then cool down it less than 50 °C.
6. Take out rubber(D) and U tube(C).
7. Calibrate with 0.1N Ferric ammonium sulfate: FeNH<sub>4</sub>(SO<sub>4</sub>)<sub>2</sub> with indicator KSCN (Potassium Thio cyanate)
8. End point is when the color of solution become bright brown color more than 30 seconds.

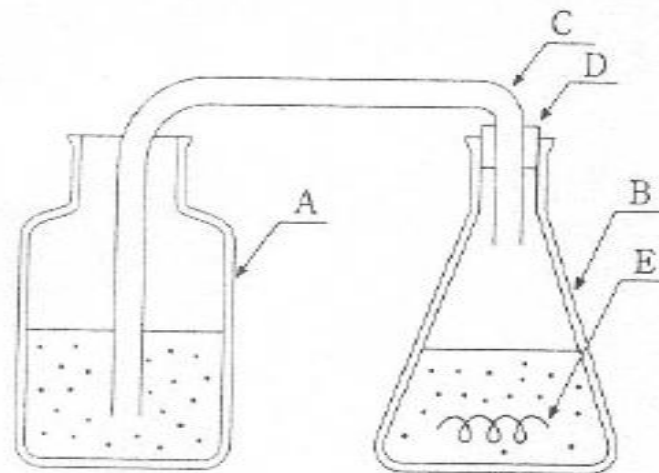
0.1N NH<sub>4</sub> Fe SO<sub>4</sub> 1ml = 7.988mg TiO<sub>2</sub>

consumption(ml) \* f \* 7.988(mg)

TiO<sub>2</sub>(%) = ----- x 100

Sample(g) \* 1,000(mg/g)

f : factor of 0.1N NH<sub>4</sub> Fe SO<sub>4</sub>



## References

1. JSCI regulation