



Quantitative Analysis Method for Mineral Filler and Mineral Coating of Paper

KES T – M029

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1. Scope of application

This standard shall specify the viscosity of additive contained in a paper and the quantitative analysis method.

2. Mineral filler and coating

2.1 Summary

This standard shall specify the quantitative analysis method for mineral filler and mineral coating of paper.

2.2 Equipment and apparatus

- (1) Platinum crucible and dish : One with the cover and its volume of 50 ml of larger
- (2) Pipkin
- (3) Crystal plate

2.3 Reagents

- (1) Sodium carbonate
- (2) Hydrochloric acid
- (3) Fluorine acid
- (4) Sulfuric acid
- (5) Nitric acid
- (6) Ammonium chloride
- (7) Ammonium hydroxide
- (8) Ammonium oxalate
- (9) Potassium permanganate standard solution: 0.1N
- (10) Barium chloride solution: Dissolve 100 of barium chloride into 1l of water
- (11) Methyl red indicator
- (12) Ammonium phosphate

2.4 Sample : Gather the sample strip in order to make the weight of its ash become more

than 0.15 g.

2.5 Test method : Measure the weight of the sample and its moisture content according to KS M 7023 (Test method for the moisture content of paper and paperboard).

2.6 Both barium and titanium exist

2.6.1 Preparation

- (1) Burn the weighed sample strip in a platinum crucible or platinum plate to turn it into ash and melt by adding about 5 g of sodium carbonate.
- (2) Cool the melted material and put the distilled water in the pipkin to barely cover the platinum dish. Add the concentrated hydrochloric acid and cover the pipkin with the crystal plate. Dissolve the melted material completely by adding enough concentrated hydrochloric acid.
- (3) Evaporate the acidic material dissolved in the pipkin by the steam bath and dry for 3 ~ 4 hours in the constant temperature dryer of 105 ± 2 °C for the next test.

2.6.2 Silicon dioxide

- (1) Add 3 drops of methyl red as an indicator to the filtered solution of 2.6.2(2), put 4g of ammonium chloride and add concentrated ammonium hydroxide until the solution turns yellow.
- (2) Boil the solution by adding 5ml of concentrated sulfuric acid and carefully add 1 : 1 ammonium hydroxide until the solution turns yellow before the solution cools down.
- (3) Set aside the hot solution for 2 ~ 3 minutes and filter it quickly using a filter paper. Rinse the filter paper and its content in 2 % ammonium chloride and dry in the constant temperature dryer of 105 ± 2 °C.
- (4) Measure the content of the ash by burning the filter paper and its content in the platinum crucible.
- (5) The weight of the ash is the weight of aluminum oxide.