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NATIONAL STANDARD OF THE PEOPLE'S REPUBLIC OF CHINA

GB/T 5401-2018

Replacing GB/T 5401-2004

Pulp -- Determination of alkali solubility

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Foreword

This standard was drafted in accordance with the rules given in GB/T 1.1-2009.

This standard replaces GB/T 5401-2004 "Determination of pulp alkali solubility", and the main changes compared with GB/T 5401-2004 are as follows.

--- Revised the scope of the statement (see Chapter 1, Chapter 1 of the.2004 edition);

--- Added 4 normative references and adjusted the corresponding standards for moisture content determination (see Chapter 2,.2004 edition)

Chapter 2);

--- Revised the expression in terms and definitions (see 3.1, 3.1 of the.2004 edition);

--- Revised the expression of the principle (see Chapter 4, Chapter 4 of the.2004 edition);

--- Added Chapter 5 reaction formula to facilitate standard users to understand the titration principle and the relationship between reactants and product equivalents in calculation

(see Chapter 5);

--- Modified the mass fraction of concentrated sulfuric acid; added 5% sodium hydroxide solution and its preparation method, increased the titration of sodium thiosulfate method

The reagent required for the removal of the reagent required for titration of ammonium ferrous sulfate with sodium diphenyl sulfate as an indicator (see section

Chapter 6, Chapter 5 of the.2004 edition);

---Adjusted some experimental instruments, including the universal device magnetic stirrer as the pulp mixing device, instead of the previous version of the special

Using a stirring device (see Chapter 7, Chapter 6 of the.2004 edition);

--- Adjust the moisture content from the step to the test preparation (see 8.2, 8.1 of the.2004 edition);

--- Edited the description of the measurement process, modified the description of pulp mixing according to the characteristics of the magnetic stirrer, will drop

Determining the ammonium ferrous sulfate method and the sodium thiosulfate method, the sulfuric acid with sodium diphenyl sulfate as an indicator was deleted.

Ferrous ammonium titration (see Chapter 9, Chapter 8 of the.2004 edition);

--- In the description of the calculation formula, taking into account the titration of sodium thiosulfate method (see Chapter 10, Chapter 9 of the.2004 edition);

--- Increased quality assurance and control (see Chapter 11);

--- Added Appendix A;

--- Added Appendix C and Appendix D to illustrate the color change of the solution at each stage of the titration process.

This standard uses the redrafting method to modify the use of ISO 692.1982 "Determination of pulp alkali solubility."

This standard has more structural adjustments than ISO 692.1982. Appendix A lists the provisions of this standard and ISO 692.1982.

Number comparison list.

The main technical differences between this standard and ISO 692.1982 and their reasons are as follows.

--- Revised the scope of the statement to make the technical route of the method more clear (see Chapter 1);

---About the normative reference documents, this standard has made technical adjustments to adapt to China's technical conditions, adjustments

The situation is reflected in Chapter 2, "Regulatory Citations", and the specific adjustments are as follows.

* Replace ISO 638 with GB/T 462 modified to international standards;

* Added GB/T 601-2016, GB/T 740, GB/T 744, GB/T 6682.

--- Revised the expression in terms and definitions to correspond to the title of this standard (see 3.1);

--- Revised the statement of the principle to make it closely related to the test procedure of Chapter 9 (see Chapter 4);

--- Increased reaction formula to facilitate standard users' understanding of the titration principle and the relationship between reactants and product equivalents in calculations (see

Chapter 5);

--- According to the domestic reagent specifications, modified the mass fraction of concentrated sulfuric acid; increased 5% sodium hydroxide solution and its preparation method;

Corresponding to the test procedure in Chapter 9, the reagents required for the titration of sodium thiosulfate were added, and sodium diphenyl sulfate was removed.

Titrate the reagents required for the indicator ammonium ferrous sulfate (see Chapter 6);

--- According to the development of the current instrument, some experimental instruments have been adjusted, and the universal device magnetic stirrer is selected as the stirring of the pulp.

In place of the special mixing device in the international standard (see Chapter 7);

--- In the test procedure (see Chapter 9), the ammonium ferrous sulfate titration method only retains the fact that ferrous iron is used as an indicator in ISO 692.1982.

In the test plan, the experimental scheme using sodium diphenyl sulfate as an indicator was deleted, and the thiosulfate mentioned in Note 5 of International Standard 8.2 was deleted.

Sodium titration is written into the text (see 9.5.2);

--- According to the adjustment of the test procedure, in the description of the calculation formula, taking the sodium thiosulfate method titration (see Chapter 10);

--- Increased quality assurance and control to facilitate standard users to master technical key points and improve standard operability (see Chapter 11);

This standard has made the following editorial changes.

--- Edited the description of the measurement process, modified the description of pulp mixing according to the characteristics of the magnetic stirrer, will drop

Description of the two methods of ammonium ferrous sulfate and sodium thiosulfate (see Chapter 9);

--- Added a color chart to illustrate the color change of the solution at each stage of the titration process (see Appendix C and Appendix D).

1 Scope

This standard specifies the dissolution of pulp by measuring the specific concentration (mass fraction of 18%, 10% or other) in sodium hydroxide solution.

The amount of potassium dichromate consumed by the reducing substance under specific conditions to reflect the dissolution of the pulp in a specific concentration of sodium hydroxide solution.

Method for determining the content of organic matter.

This standard applies to the determination of the alkali solubility of bleached pulp, semi-bleached pulp and unbleached pulp, and can also be used in the research of various stages of the production of bleached pulp.

2 Normative references

The following documents are indispensable for the application of this document. For dated references, only the dated version applies to this article.

Pieces. For undated references, the latest edition (including all amendments) applies to this document.

GB/T 462 Determination of moisture in paper, paperboard and pulp analysis samples (GB/T 462-2008, ISO 287.1985, ISO 638.

1978, MOD)

GB/T 601-2016 Preparation of chemical reagent standard titration solution

GB/T 740 pulp sample (GB/T 740-2003, ISO 7213.1981, IDT)

GB/T 744 Determination of alkali resistance of pulp (GB/T 744-2004, ISO 699.1982, MOD)

GB/T 6682 Analytical laboratory water specifications and test methods (GB/T 6682-2008, ISO 3696.1987, MOD)

3 Terms and definitions

The following terms and definitions apply to this document.

3.1

Alkali solubility alkalisolubility

The ratio of the mass of the pulp to the mass of the dry pulp in a particular concentration of alkali solution, expressed as a percentage, referred to as the S value.

3.2

S18, S10 or Sc S18, S10orSc

Indicate the S value of the alkali concentration, where the footnote 18, 10 or c is the concentration chosen for the alkaline solution, in grams of sodium hydroxide in 100 g of solution