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CCS Y30



**NATIONAL STANDARD OF THE
PEOPLE'S REPUBLIC OF CHINA**

GB/T 10338-2008

Replacing GB 10338-1989

Pulps - Determination of carboxyl content

纸浆羧基含量的测定

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Foreword

This standard replaces GB/T 10338-1989 "Pulp hydroxyl content determination." This standard compared with GB/T 10338-1989, the main changes are as follows:

- Increasing the foreword;
- Increased by principle, reaction type, quality assurance and control, test report chapter (3,4,10,11 this edition);
- Refers to the standard is amended as normative references (1989 edition Chapter 2; Chapter 2 of this edition), an increase of references, and Other wording has been modified;
- According to GB/T 20001.4-2001 requirements, modify the contents of reagent preparation (1989 Edition Chapter 3; Chapter 5 of this edition);
- Modify the contents of the instrument, increasing the wet slurry dissociation unit (1989 edition, Chapter 4; Chapter 6 of this edition);
- Modify the sample preparation, the abolition of dry pulp grinding process is dissociation (1989 edition Chapter 5; Chapter 7 of this edition);
- Modify the contents of the test procedure, the test process is divided into five parts, modifying the fiber dissociation (1989 edition, Chapter 6; Chapter 8 of this edition);
- Modify the presentation of the results to improve the formula (1989 edition, Chapter 7; Chapter 9 of this edition);
- Modify the EDTA concentration calibration method, increased reagent, changing the amount of reagent during the test, a modified accordingly The formula (1989 edition Appendix A; this edition of Appendix A). Appendix A of this standard is a normative appendix. The standard proposed by China National Light Industry Council. This standard by the National Standardization Technical Committee of the paper industry. This standard was drafted. People's Republic of China SZCIQ, China Pulp and Paper Research Institute. The main drafters of this standard. Xu Rong, Jiang Fan, Guhao Fei, Liu Yi, Yang left the military. This standard replaces the standards previously issued as follows:

--- GB/T 10338-1989. This standard by the National Standardization Technical Committee is responsible for interpreting the paper industry. Determination of carboxyl group content of the pulp

1 Scope

GB/T 10338-2008 is the Chinese national standard on pulps - determination of carboxyl content, in the field of paper technology. The /T suffix marks it as a recommended standard: it is not compulsory by itself, but it becomes binding as soon as a contract, a tender or a customer specification calls it up - which in practice is how most foreign buyers meet it. It was issued on 19 August 2008 by the General Administration of Quality Supervision, Inspection and Quarantine of the People's Republic of China; Standardization Administration of China, and has been in force since 1 May 2009. Classification: ICS 85.010, CCS Y30. This page is published from the official record of the standard held by the Chinese standards administration: the identification, the dates, the classification and the issuing body are taken from there. The clause text, the tables and the numeric limits are in the document itself, which is delivered complete in English translation.

3 Calcium solution through a filter cake made of pulp fibers, calcium ions react with the carboxyl groups in the fibers, calcium EDTA titration before and after filtration Solution, the consumption of calcium ions was measured, to calculate the cation exchange capacity of the fiber, thereby determining the carboxyl group content of the pulp.

2 Normative references

The following documents contain provisions which, through reference in this standard and become the standard terms. For dated references, subsequent Amendments (not including errata content) or revisions do not apply to this standard, however, encourage the parties to the agreement are based on research Whether the latest versions of these documents. For undated reference documents, the latest versions apply to this standard.

GB/T 462 paper, board and pulp - Determination of water sample (GB/T 462-2008, ISO 287. 1985,

ISO 638. 1978, MOD) Preparation of

GB/T 601 chemical reagent standard titration solution

GB/T 740 pulp samples taken (GB/T 740-2003, ISO 7213. 1981, IDT)

GB/T 6682 analytical laboratory use specifications and test methods (GB/T 6682-2008, ISO 3696. 1987, MOD) ISO 5263-

ISO 5263-2 wet pulp laboratory dissociation Part 2. mechanical pulp dissociation (20 °C)

ISO 5263-3 wet pulp laboratory dissociation Part 3. mechanical pulp dissociation (≥ 85 °C)

Principle

4 Scheme

4.1 calcium ion reaction with a carboxyl reactive $\text{Ca}^{2+} + 2\text{R-COOH} = \text{Ca}(\text{RCOO})_2 + 2\text{H}^+$
The calcium ions through the cake fibers, and the fiber portion of the calcium ions react carboxyl groups.

4.2 solution of the free calcium ions and EDTA titration ion complexation reaction $\text{Ca}^{2+} + \text{H}_2\text{Y}^{2-} = 2\text{H}^+ + \text{CaY}^{2-}$ The calcium ion complexation with EDTA.

5 Reagents

Unless otherwise indicated in the analysis using only recognized as analytical grade reagents and distilled or deionized water or equivalent purity.

5.1 Mg^{2+} -EDTA solution, dissolving 0.5g disodium ethylenediaminetetraacetate (EDTA disodium salt) ($\text{Na}_2\text{H}_2\text{Y} \cdot 2\text{H}_2\text{O}$) and 0.0125g Magnesium chloride ($\text{MgCl}_2 \cdot 6\text{H}_2\text{O}$) in 1000mL of water. The solution was stored in a polyethylene plastic bottle (concentration calibration see Appendix A).

5.2 saturated solution of calcium hydroxide, Weigh 0.5g of calcium hydroxide $\text{Ca}(\text{OH})_2$, was dissolved in 100mL of water, and filtered to obtain calcium hydroxide saturated solution.

5.3 stock solution of calcium Weigh 1.58g of anhydrous calcium acetate, dissolved in water, the volume to 100 mL, the solution concentration of approximately $[\text{Ca}(\text{C}_2\text{H}_3\text{O}_2)_2] \sim 0.1\text{mol/L}$. When the solution appears cloudy, precipitation, color changes and other phenomena, should be re-prepared.

5.4 Calcium working solution with a pipette, take 1.7mL calcium stock solution (5.3) water volume to 1L, this concentration of approximately