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NATIONAL STANDARD OF THE PEOPLE'S REPUBLIC OF CHINA

GB/T 2678.6-2023

Replacing GB/T 2678.6-1996

Paper, board and pulp - Determination of water-soluble sulfates

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Foreword

This document complies with the provisions of GB/T 1.1-2020 "Standardization Work Guidelines Part 1.Structure and Drafting Rules of Standardization Documents"

Drafting.

This document replaces GB/T 2678.6-1996 "Determination of water-soluble sulfate in paper, cardboard and pulp (conductometric titration method)" and is consistent with

Compared with GB/T 2678.6-1996, in addition to structural adjustments and editorial changes, the main technical changes are as follows.

a) Changed the scope (see Chapter 1, Chapter 1 of the.1996 edition);

b) Added terms and definitions (see Chapter 3);

c) The principle of conductometric titration has been changed (see 4.1, 3.1 of the.1996 edition);

d) Change "instrument" to "instrument and equipment" and refine the requirements (see 4.3, Chapter 5 of the.1996 edition);

e) Changed the collection and preparation of specimens (see 4.4, Chapter 6 of the.1996 edition);

f) The test procedure has been changed (see 4.5, Chapter 7 of the.1996 edition);

g) The result calculation and calculation formula of the conductometric titration method have been changed, the simplified formula has been deleted, and the "moisture content w of the sample" has been added (see

4.6, Chapter 8 of the.1996 edition);

h) Added ion chromatography (see Chapter 5);

i) Increased precision (see Chapter 6);

j) Increased detection limit (see Chapter 7).

This document has been modified to adopt ISO 9198.2020 "Determination of water-soluble sulfates in paper, board and pulp".

Compared with ISO 9198.2020, this document has many structural adjustments. Comparison list of structure number changes between the two files

See Appendix A.

The technical differences between this document and ISO 9198.2020 and their reasons are as follows.

---The scope has been changed, the detection limit has been deleted, and the conductometric titration method has been added, consistent with the technical content specified in this document. The detection limit

Moved to Chapter 7 (see Chapter 1);

---The definition of terms has been changed to be consistent with the technical content specified in this document (see Chapter 3);

---Added conductometric titration to adapt to my country's technical conditions (see Chapter 4);

---Replaced ISO 186 (see 4.4) with the normatively cited GB/T 450 to adapt to my country's technical conditions;

---Replaced ISO 287 and ISO 638 (see 4.5.2) with normatively quoted GB/T 462 to adapt to my country's technical conditions;

---Replaced ISO 7213 (see 4.4) with the normatively quoted GB/T 740 to adapt to my country's technical conditions;

---Added normative reference to GB/T 6682 to adapt to my country's technical conditions;

---The principle has been changed to be consistent with the technical content specified in this document (see 5.1);

---Changed the content of instruments and equipment, added "analytical balance", "medium speed quantitative filter paper" and "erlenmeyer flask" to supplement the missing instrument equipment.

Prepare and specify requirements (see 5.3);

---Changed the collection and preparation of samples to be consistent with the corresponding description in conductometric titration (see 5.4);

---The thermal extraction method is added, which is consistent with the test solution preparation method in the conductometric titration method (see 5.5.1.2);

---The rounding method of ion chromatography has been changed to be consistent with the rounding method of conductometric titration (see 5.6);

---Changed "precision", deleted Table 1, added repeatability limits, limited the repeatability of test results, and ensured test results.

accuracy of results (see Chapter 6);

---Deleted the report results, added "detection limit", described the detection limits of conductometric titration and ion chromatography, and added sampling

The detection limit of the method can be reduced by increasing the amount, concentrating, using more advanced instruments, etc. At this time, the detection limit is determined according to the actual test conditions.

Assessment (see Chapter 7).

The following editorial changes have been made to this document.

---Added informative Appendix B.

Please note that some content in this document may be subject to patents. The publisher of this document assumes no responsibility for identifying patents.

1 Scope

This document describes conductometric titration and ion chromatographic methods for the determination of water-soluble sulfates in paper, board and pulp.

This document applies to all types of paper, board and pulp.

2 Normative reference documents

The contents of the following documents constitute essential provisions of this document through normative references in the text. Among them, the dated quotations

For undated referenced documents, only the version corresponding to that date applies to this document; for undated referenced documents, the latest version (including all amendments) applies to

this document.

GB/T 450 Collection of paper and cardboard samples and determination of longitudinal, transverse, front and back sides of the sample (GB/T 450-2008, ISO 186.

2002,MOD)

GB/T 462 Determination of moisture content of paper, cardboard and pulp analysis samples (GB/T 462-2023, ISO 287.2017, ISO 638-1.

2022,ISO 638-2.2022,MOD)

GB/T 740 Collection of pulp samples (GB/T 740-2003, ISO 7213.1991, IDT)

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

water-solublesulfateswater-solublesulfates

The content of sulfate ions in the aqueous extract of paper, cardboard and pulp samples measured under specified conditions.

4.1 Principle

The sample is extracted with boiling water for 1 hour, and the sulfate ions in the filtrate are precipitated with barium ions. The excess barium ions are measured with conductivity using lithium sulfate standard solution.

Determination by titration method.

4.2 Reagents

Unless otherwise specified, use only analytically pure reagents.

4.2.3 Hydrochloric acid, 36%~38%.

4.2.4 Barium chloride (BaCl2) solution, [c(BaCl2)=5mmol/L]. Weigh 1.22g barium chloride dihydrate (BaCl2.2H2O), and use water