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

GB/T 2678.3-2026

Replacing GB/T 2678.3-1995

**Pulps - Determination of chlorine consumption (Degree of
delignification)**

纸浆 氯耗量（脱木素程度）的测定
(English Translation)

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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 is Part 3 of GB/T 2678. GB/T 2678 has the following parts published.

- Pulp sieve analysis method (GB/T 2678.1);
- Determination of water-soluble chlorides in paper, paperboard and pulp (GB/T 2678.2);
- Determination of chlorine consumption (delignification degree) in pulp (GB/T 2678.3);
- Determination of water-soluble sulfates in paper, paperboard and pulp (GB/T 2678.4).

This document supersedes GB/T 2678.3-1995 "Determination of Chlorine Consumption (Delignification Degree) in Pulp" and is consistent with GB/T 2678.3-1995.

Compared to previous versions, aside from structural adjustments and editorial changes, the main technical changes are as follows.

- a) Added terms and definitions for pulp chlorine consumption (see 3.1);
- b) The principle has been changed (see Chapter 4, Chapter 3 of the 1995 edition);
- c) The requirements for test water have been increased (see 5.1);
- d) The reagents were changed (see Chapter 5, Chapter 5 of the 1995 edition);
- e) The instruments and equipment were changed (see Chapter 6, Chapter 4 of the 1995 edition);
- f) The preparation of the test specimens was changed (see Chapter 7, Chapter 6 in the

1995 edition);

g) The experimental procedures were changed (see Chapter 8, Chapter 7 of the 1995 edition);

h) The calculation of the correction factor has been added (see Chapter 9);

i) The calculation of lignin content has been removed (see Chapter 8 of the 1995 edition);

j) The test report was amended (see Chapter 10, Chapter 9 of the 1995 edition).

This document is modified to adopt ISO 3260:2015 "Determination of chlorine consumption (delignification degree) in pulp".

This document has undergone significant structural adjustments compared to ISO 3260:2015. A table comparing the structural numbering changes between the two documents is provided.

See Appendix A.

The technical differences between this document and ISO 3260:2015, and the reasons therefor, are as follows.

a) The normative reference GB/T 6682 (see 5.1) has been added to adapt to my country's technical conditions;

(b) Water requirements have been added (see 5.1) to adapt to my country's technical conditions;

c) Replace the "magnetic stirrer" and "thermostatic water bath" with a "thermostatic magnetic stirrer or heat-collecting magnetic stirrer" (see 6.3) to adapt to...

my country's technological conditions;

d) Other commonly used laboratory instruments and equipment have been added (see 6.6) to adapt to my country's technical conditions;

e) ISO 638 (see 8.1) has been replaced with the normatively referenced GB/T 462 to adapt to my country's technical conditions.

The following editorial changes have been made to this document.

a) Change the precautions for pulp with extremely low chlorine consumption in section 8.2 to note;

b) Added notes and examples to Table 1.

Please note that some content in this document may involve patents. The issuing organization of this document assumes no responsibility for identifying patents.

This document was proposed by the China National Light Industry Council.

This document is under the jurisdiction of the National Technical Committee on Standardization of Paper Industry (SAC/TC141).

Introduction

Pulp is the main raw material for paper and paperboard, which are the main products of the papermaking industry and are widely used in printing, publishing, packaging, and daily life.

This applies to fields such as pulp, paper, and special industries. GB/T 2678 specifies the methods for determining the basic performance indicators of pulp, paper, and paperboard, and is proposed to consist of four parts.

constitute.

---Pulp sieve analysis method (GB/T 2678.1). The purpose is to establish the method for determining pulp sieve analysis using a Bauer-McNett fiber sieve analyzer.

Methods for determining fiber gradation by mass fraction and weight-average fiber length.

---Determination of water-soluble chlorides in paper, paperboard and pulp (GB/T 2678.2). The purpose is to establish a standard for the determination of water-soluble chlorides. method.

---Determination of chlorine consumption (delignification degree) in pulp (GB/T 2678.3). The purpose is to establish a method for determining chlorine consumption in pulp.

---Determination of water-soluble sulfates in paper, paperboard and pulp (GB/T 2678.4). The purpose is to establish a method for determining water-soluble sulfates. method.

Determination of chlorine consumption (delignification degree) in pulp Warning---Personnel using this document should have practical experience working in a formal chemical laboratory. This document does not specify all possible safety risks.

Regarding all issues, users are responsible for taking appropriate safety and health measures and ensuring compliance with relevant national regulations.

1 Scope

This document describes a method for evaluating the degree of pulp delignification by measuring pulp chlorine consumption.

This document applies to all types of pulp.

2 Normative references

The contents of the following documents, through normative references within the text, constitute essential provisions of this document. Dated citations are not included.

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

This document.

GB/T 462 Determination of moisture content in analytical samples of paper, paperboard and pulp (GB/T 462-2023, ISO 287:2017, ISO 638-1.

2022, ISO 638-2:2022, MOD) GB/T 6682 Specifications and test methods for water used in analytical laboratories (GB/T 6682-2008, ISO 3696:1987, MOD)

3 Terms and Definitions

The following terms and definitions apply to this document.

The amount of active chlorine consumed by the pulp under the conditions specified in this document.

Note: Prices are expressed as percentages (%).

4 Principles

At $(25 \pm 1)^{\circ}\text{C}$, chlorine produced by acidified sodium hypochlorite solution reacts with pulp for 15 min, and the residual chlorine is then determined by iodometric titration.

The amount of residual chlorine should not be less than 50% of the amount of chlorine added. The obtained chlorine consumption should be corrected to the consumption under a constant effective chlorine concentration.

5 Reagents

5.1

Water, GB/T 6682, Grade III.

5.2

Sodium hypochlorite (NaClO) solution. Each liter contains approximately 20g of active chlorine, and the total alkalinity is equivalent to a pH of 12.0 ± 0.5 (using a glass electrode).

(Extreme measurement).