

ICS 85.040
CCS Y 30



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

GB/T 7978-2026

Replacing GB/T 7978-2005

**Pulps - Determination of acid-insoluble ash
(English Translation)**

Issued on: April 30, 2026

Implemented on: November 1, 2026

Issued by: State Administration for Market Regulation

Table of Contents

Foreword
1 Scope
2 Normative references
3 Terms and Definitions
4 Principles
5 Reagents

Foreword

This document conforms to GB/T 1.1-2020 "Standardization Work Guidelines Part 1: Structure and Drafting Rules of Standardization Documents".

Drafting is scheduled.

This document replaces GB/T 7978-2005 "Determination of Acid-Insoluble Ash in Pulp". Compared with GB/T 7978-2005, except for structural adjustments...

Aside from the integration and editing changes, the main technical changes are as follows.

- a) The terminology and definition of acid-insoluble ash have been changed (see 3.1, 2005 edition of 3.1).
- b) The principle has been changed (see Chapter 4, Chapter 4 in the 2005 edition);
- c) The description of the test water has been revised (see 5.1, Chapter 5 of the 2005 edition);
- d) A method for preparing reagents has been added (see 5.2);
- e) Increased requirements for instruments and equipment (see Chapter 6);
- f) The requirements for sample size have been changed (see 7.2, 2005 edition of 7.2).
- g) The calcination temperature has been changed (see 8.5, 8.2 in the 2005 edition).
- h) Added the requirement for relative deviation between two independent measurements (see Chapter 9).

This document is modified to adopt ISO 776:2011 "Determination of acid-insoluble ash in pulp".

This document has undergone the following structural adjustments compared to ISO 776:2011.

--The content of Chapters 7 and 8 is divided into 7.1 and 7.2, and 8.1~8.5.

The technical differences between this document and ISO 776:2011, and the reasons therefor, are as follows.

- a) The requirements for the test water have been changed (see 5.1) to conform to the Class III water specified in GB/T 6682 to adapt to my country's technical conditions;
- b) The range requirements for heat-resistant evaporating dishes and analytical balances have been removed to adapt to my country's technical conditions;
- c) The graduation value requirements for the forced-air drying oven have been increased (see 6.7) to adapt to my country's technical conditions;
- d) ISO 7213 (see 7.1) has been replaced with the normatively referenced GB/T 740 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;
- f) ISO 1762 (see 8.2) has been replaced with the normatively referenced GB/T 22877 to adapt to my country's technical conditions;
- g) Added specific requirements for the hot distilled water rinsing part of the test procedure (see 8.4) to ensure the washing effect of residue;
- h) A relative deviation requirement for two independent measurements has been added (see Chapter 9) to improve the reliability of the measurement results.

The following editorial changes have been made to this document.

--Added warnings to reduce personnel safety risks;

--The notes in the sample processing section have been revised to simplify the description of related operations;

--The symbols for the mass of acid-insoluble ash, acid-insoluble residue, and oven-dry mass of the sample in the results description have been changed.

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/TC 141).

1 Scope

This document describes a method for determining the acid-insoluble ash content of pulp.

This document applies to the determination of acid-insoluble ash content in various 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 listed below.

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 740 Sampling of pulp specimens (GB/T 740-2003, ISO 7213:1991, IDT) GB/T 6682 Specifications and test methods for water used in analytical laboratories (GB/T 6682-2008, ISO 3696:1987, MOD) GB/T 22877 Determination of ash content (on ignition residue) of paper, paperboard, pulp and cellulose nanomaterials (525 °C) (GB/T 22877-2023, ISO 1762:2019, MOD)

3 Terms and Definitions

The following terms and definitions apply to this document.

Acid-insoluble ash

The pulp sample was burned to ash at $(525 \pm 25)^\circ\text{C}$, and the insoluble residue was obtained after treatment with hydrochloric acid.

4 Principles

After weighing the pulp sample in a crucible, it was thoroughly ignited in a muffle furnace at $(525 \pm 25)^\circ\text{C}$, and the residue was treated with hydrochloric acid. Acid treatment.

The insoluble residue was filtered and washed, then ignited at 525°C and weighed. A separate sample was taken to determine the moisture content, based on the insoluble residue after ignition.

The acid-insoluble ash content is calculated from the mass of the residue and the oven-dry mass of the sample, expressed in milligrams per kilogram (mg/kg).

5 Reagents

Unless otherwise specified, use only analytical grade reagents.

5.1

Water, GB/T 6682, Grade III.

5.2

Hydrochloric acid solution. $c(\text{HCl}) = 6 \text{ mol/L}$. In a fume hood, carefully dissolve 500 mL of hydrochloric acid (density at 20 °C) in water (5.1).

Dilute 1.19 g/mL to 1000 mL.