

ICS 85.060

CCS Y 30



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

GB/T 8943.2-2008

Replacing GB/T 8943.2-1988

Paper, board and pulp -- Determination of iron

纸、纸板和纸浆 铁含量的测定

(English Translation)

Issued on: January 4, 2008

Implemented on: September 1, 2008

Issued by: Standardization Administration of China

Table of Contents

- Foreword
- 1 Scope
- 2 Normative references
- 3 Method A. 1,10- phenanthroline spectrophotometry
 - 3.1 Principle
 - 3.2 Reagents
 - 3.3 Instrument
 - 3.4 Sample Preparation

Foreword

GB/T 8943 is divided into four parts.

- GB/T 8943.1 "paper, board and pulp - Determination of copper content";
- GB/T 8943.2 "paper, board and pulp - Determination of iron content";
- GB/T 8943.3 "paper, board and pulp - Determination of manganese content";
- GB/T 8943.4 "Paper, paperboard and pulp calcium and magnesium content determination." this section GB/T 8943 Part 2, corresponding to the international standards ISO 779:2001 "Paper, paperboard and pulp - Determination of iron content." this part is GB/T 8943.2-1988 "Pulp, paper and board - Determination of iron content," the amendment.

The partial modification of international standards ISO 779:2001.

This part of International Standard ISO 779:2001 compared to the following changes.

- Adding a new test method A (see Section 3 of this chapter).

This part of ISO 779:2001 technical differences are listed in Appendix A.

This part of ISO 779:2001 structure comparison are listed in Appendix B.

This Part replaces GB/T 8943.2-1988.

This portion of the GB/T 8943.2-1988 have compared the following changes.

- Increasing the normative references (see edition Chapter 2);
- Adding a new test method (see Chapter 4 of this edition);

- Adjust the reagent in the order (see this edition 3.2,4.2);
- Modify the contents of the instrument (see this edition 3.3);
- Adjust the sequence and content of the test procedure (see this edition 3.5,4.5,3.5.2.2).

This section of the Appendices A and B are informative appendices.

This part is proposed by the China National Light Industry Council.

This part of the paper by the National Standardization Technical Committee (SAC/TC141) centralized.

This part by the Tianjin Institute of Light Industry Technology Paper drafted.

1 Scope

GB/T 8943 provisions of this part of the test two methods of measuring the iron content of the paper, that is 1,10-phenanthroline spectrophotometry and flame Atomic absorption spectrometry (or a plasma jet spectroscopy).

This section applies to the determination of a variety of paper, board and pulp iron content.

2 Normative references

The following documents contain provisions which, through GB/T reference in this 8943 constitute provisions of this part. For dated reference documents Member, all subsequent amendments (not including errata content) or revisions do not apply to this section.

However, encouraged to reach agreement under this section all parties that proposed to use the latest versions of these documents, undated reference documents, the latest versions apply to this section.

GB/T 462 Paper and board Determination of moisture (GB/T 462-2003, ISO 287. 1985, MOD) GB/T 741 Determination of pulp sample moisture (GB/T 741-2003, ISO 638. 1978, MOD) GB/T 742 paper, paperboard and pulp residue (ash) determination (900 °C) (GB/T 742-2003, ISO 2144:1997, MOD)

3.1 Principle

Ashing the sample, and then the ash dissolved in hydrochloric acid, ferric chloride reduction of hydroxylamine (hydroxylamine hydrochloride). In a buffer solution medium, divalent Iron with 1,10-phenanthroline to form a complex at a wavelength of 510nm to this complex photometrically.

3.2 Reagents

Unless otherwise indicated, the analysis should use the same analytical reagent and distilled water or purified water.

3.2.1

Sodium acetate trihydrate ($\text{NaCOOCH}_3 \cdot 3\text{H}_2\text{O}$) solution. 540g/L.

3.2.2

hydrochloric acid solution. about 6mol/L.

3.2.3 0.1g/L standard iron solution I. 0.100g of pure iron wire in 1000mL volumetric flask, dissolved in as little hydrochloric acid (density of 1.19g/mL) in. Then diluted with water to the mark, and mix well.

1mL of this standard solution contains 0.1mg of iron.

3.2.4 0.01g/L standard iron solution II. Pipette standard iron solution I (3.2.3) 100mL to 1000mL volumetric flask, dilute with water to Scale and mix well.

1mL of this standard solution containing 0.01mg of iron. The solution is unstable, it should be day by day with.

3.2.5

hydroxylamine chloride (hydroxylamine hydrochloride) (HONH_3Cl) solution. 20g/L.

3.2.6

hydrochloride 1,10 phenanthroline ($\text{C}_{12}\text{H}_8\text{N}_2 \cdot \text{HCl} \cdot \text{H}_2\text{O}$) solution. 10g/L.

The reagent can be used a considerable amount of 1,10-phenanthroline instead.

When storage solution, avoid light exposure. Note that only use a colorless solution.

3.3 Instrument

General laboratory instruments and 3.3.1 spectrophotometer, or 3.3.2 photoelectric colorimeter equipped with a 500nm ~ 520nm in wavelength between the maximum transmittance of the filter and lid cuvette.

3.4 Sample Preparation

The air-dried sample torn fragments of the appropriate size, it should not be used shearing, punching knives or other tools that may occur in the preparation of metal contamination sample.