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

GB/T 6730.59-2017

Replacing GB/T 6730.59-2005

**Iron ores -- Determination of manganese content -- Flame
atomic absorption spectrometric method**

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Foreword

GB/T 6730 "iron ore" is divided into dozens of sections.

This section GB/T 6730 Part 59.

This section drafted in accordance with GB/T 1.1-2009 given rules.

This Part replaces GB/T 6730.59-2005 "Determination of manganese content of iron ore flame atomic absorption spectrometry", this section and

GB/T 6730.59-2005 In comparison, except for some editorial changes, the main technical changes are as follows.

- .2005 version of "acetylene - nitrous oxide combustion flame" to "acetylene - air combustion flame";
 - The.2005 version of the sample decomposition method acid-soluble method was modified;
 - The.2005 version of the melting method in the molten alkali reagent sodium carbonate and boric acid mixed flux;
 - The.2005 version of the calibration curve solution in the linear range, preparation methods and related test liquid fractionation and other technical conditions were modify;
 - .2005 version of the "analysis of the acceptance" and "the final result of the calculation," a simplified revisions;
 - The.2005 version of the acid-soluble method to re-inter-laboratory precision joint test, the new repeatability limit r and reproducibility
- Limit R ;
- Removed the.2005 edition of Appendix B and Appendix C.

This section uses the redrafted law Amendment uses ISO 9682-1.2009 "Determination of manganese content of iron ore Part 1. Flame atom

Absorption Spectrometry ".

This part of the technical differences with ISO 9682-1.2009 and its reasons are as follows, the provisions of these differences have been adopted in its outside pages

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--- On the normative references, this section made a technical difference with the adjustment to adapt to China's technical conditions, adjust the situation

Concentration reflected in the second chapter "Normative references", the specific adjustments are as follows.

- * increased reference to GB/T 6379.1 (see 8.2.1);
- * increase the reference GB/T 6379.2 (see 8.2.1);
- * increase the reference GB/T 6682 (see Chapter 4);
- * Replace ISO 7764 (ISO /IEC 6120-1), equivalent to International Standard GB/T 6730.1, with ISO 9682-1-2009 (see 6.1 and 6.2);
- * increase the reference GB/T 7728 (see 5.3);
- * increase the reference GB/T 8170 (see 8.2.5);
- * Replace ISO 3082 (see 6.1) cited in ISO 9682-1.2009 with GB/T 10322.1 equivalent to the International Standard;
- * ISO 648 referenced in ISO 9682-1.2009 is deleted (see Chapter 5 of ISO 9682-1-2009);
- * Replace ISO 1042 cited in ISO 9682-1.2009 with GB/T 12806 that does not equivalently adopt international standards (see Chapter 5), GB/T 12806 compared with ISO 1042, the main technical differences are the appearance of the product requirements and inspection rules;
- * increase the reference GB/T 12807 (see Chapter 5);
- * Increased reference to GB/T 12808 (see Chapter 5).

--- The determination of the range from "0.01% ~ 2.5%" expanded to "0.005% ~ 5.0%", because the product analysis is necessary and the method

Can meet the requirements (see Chapter 1);

--- "Acetylene - nitrous oxide combustion flame" to "acetylene - air combustion flame", the reason is more suitable for practical application (see paragraph 2

chapter);

--- In the sample decomposition method acid-soluble acid in the acid-soluble residue recovery modified acid-soluble plus perchloric acid-fluoride decomposition method, the original

As a result of acid dissolution of the sample decomposition is more complete (see 7.4.1);

--- In the sample decomposition method in the alkali melting method, the melting agent is changed to a mixed flux of sodium carbonate and boric acid because the sample is decomposed

Full (see 7.4.2).

This part is proposed by China Iron and Steel Association.

This part of the National Iron Ore and Direct Reduced Iron Standardization Technical Committee (SAC/TC317) centralized.

This part of the drafting unit. Wuhan Iron and Steel (Group) Company, Metallurgical Industry Information Standards Institute.

1 Scope

GB/T 6730 provisions of this part of the flame atomic absorption spectrometry Determination of manganese content.

This section applies to natural iron ore, iron ore, sinter and pellets Determination of manganese content. Measurement range (mass fraction).

Acid soluble, 0.005% ~ 5.0%; alkali melting, 0.01% ~ 3.0%.

2 Normative references

The following documents for the application of this document is essential. For dated references, only the dated version applies to this article

Pieces. For undated references, the latest edition (including all amendments) applies to this document.

GB/T 6379.1 accuracy and accuracy of measurement methods (accuracy and precision) Part 1. General and definitions (GB/T 6379.1-

2004, ISO 5725-1.1994, IDT)

GB/T 6379.2 Accuracy (accuracy and precision) of measurement methods and results - Part 2. Determination of the weight of standard measurement methods

Fundamental methods of renaturation and reproducibility (GB/T 6379.2-2004, ISO 5725-2.1994, IDT)

GB/T 6682 analytical laboratory water specifications and test methods (GB/T 6682-2008, ISO 3696.1987, MOD)

GB/T 6730.1 Preparation of pre-dried samples for iron ore analysis (GB/T 6730.1-2016, ISO 7764.2006, IDT)

GB/T 7728 chemical analysis of chemical products - General rules of flame atomic absorption spectrometry

GB/T 8170 rounded repair rules and limit values of the representation and judgment

GB/T 10322.1 Iron ore sampling and sample preparation methods (GB/T 10322.1-2014, ISO 3082.2009, IDT)

GB/T 12806 laboratory glassware single standard line volumetric flask (GB/T 12806-2011, ISO 1042.1998, NEQ)

GB/T 12807 Laboratory glassware graduated pipette (GB/T 12807-1991, neqISO 835.1981)

GB/T 12808 laboratory glassware single standard pipette

3 principle

The sample is decomposed by one of the following two methods.

- a) Samples of hydrochloric acid, hydrofluoric acid, nitric acid decomposition, perchloric acid smoke to drive fluorine and silicon, with hydrochloric acid dissolved salts;
- b) After melting with a mixed flux of sodium carbonate and boric acid, dissolve the melt with hydrochloric acid.

In hydrochloric acid medium, on the atomic absorption spectrometer, with manganese hollow cathode lamp as a light source, the sample solution is injected into the air - acetylene flame, at

The absorbance of the test solution is measured at a wavelength of 279.5 nm and the mass fraction of manganese is calculated on the calibration curve.

4 Reagents and materials

Unless otherwise indicated in the analysis, the use of only approved analytical reagent and in line with GB/T 6682 more than three distilled water or its

The purity of water.