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

GB/T 29651-2013

**Manganese ores and concentrates -- Determination of total iron
content -- Flame atomic absorption spectrometric method**

锰矿石和锰精矿 全铁含量的测定 火焰原子吸收光谱法

(English Translation)

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Foreword

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

This standard uses redrafted law revision using ISO 9681:1990 "Manganese ore and manganese ore total iron content - Flame atomic Absorption Spectrometry. " this standard and ISO 9681:1990 and the technical differences for the following reasons.

--- Determination of iron content (mass fraction) range from 0.2% to 10% revised to 0.2% to 3.0%, in order to adapt to the atomic absorption spectrometer the linear range of the calibration curve changes Determination of iron content requirements;

--- On normative references, this standard has been adjusted technical differences, in order to adapt our technical conditions, the adjusted situation Focus is reflected in the status of Chapter 2, "Normative references", the specific adjustments are as follows.

- Modify with international standards of GB/T 6682 instead of ISO 3696 (see Chapter 4);
- non-equivalent to international standards of GB/T 12806 replaces ISO 1042 (see Chapter 5);
- use equivalent to international standards of GB/T 12808 replaces ISO 648 (see Chapter 5);
- use equivalent to international standards of GB/T 14949.8-1994 instead of ISO 310 (see Section 7.1);
- increase cited GB/T 2011 (see Chapter 6).

--- Remove the determination of iron content in 344.06nm wavelength, and modify the calibration range of the calibration curve, in order to improve the school Quasi-linear correlation curve;

--- Increased calcium carbonate reagent 4.2, 4.3 and 4.5 iron hydrochloric acid, which is used in the analysis step to the reagents, increase rear They use;

--- Atomic absorption spectrometer instrument require modification of the minimum

sensitivity is characterized by a concentration suitable for use atomic absorption spectrometer instrument to be Seeking to enhance the standard of operability;

--- Increased content of air-dried samples measured water in wet, increasing the accuracy of the standard operations;

--- Increasing the number of measurements and verification test sample, easy and accurate implementation of standards;

--- Increasing the melting furnace at a high temperature residue 950 °C ~ 1050 °C in a predetermined time, make the operation more standardized;

--- To increase the content of the calculation results are shown conducive normative standard practice for the results expressed;

--- Remove three replicates data allows difference, in favor of standard operating normative;

--- Increasing the test report and to make the results more standardized reporting.

The standard proposed by China Iron and Steel Association.

This standard by the national pig iron and ferroalloy Standardization Technical Committee (SAC/TC318) centralized.

This standard was drafted. Ningbo Inspection and Quarantine Institute of Science and Technology, Metallurgical Industry Information Standards Institute.

1 Scope

This standard specifies the manganese ore and manganese ore in total iron content by flame atomic absorption spectrometric method.

This standard applies to the determination of manganese ore and manganese ore in the total iron content in the measurement range (mass fraction) of 0.2% to 3.0%.

2 Normative references

The following documents for the application of this document is essential. For dated references, only the dated version suitable for use herein Member. For undated references, the latest edition (including any amendments) applies to this document.

GB/T 2011 manganese ore bulk sampling and sample preparation method GB/T 6682 analytical laboratory use specifications and test methods (GB/T 6682-2008, ISO 3696. 1987, MOD) GB/T 12806 Laboratory glassware single marking flask (GB/T 12806-2011, ISO 1042:1998, NEQ) GB/T 12808 standard laboratory glassware single line pipette (GB/T 12808-1991, eqvISO 648. 1977) GB/T 14949.8 wet chemical analysis of manganese ore deposit measuring water (GB/T 14949.8-1994, eqvISO 310.

1981)

Principle 3

Method or a second method sample decomposition with air - acetylene flame atomic absorption spectrometer wavelength 248.3nm measured at test solution of iron Absorbance.

Method a. sample with hydrochloric acid, perchloric acid, hydrofluoric acid decomposition, insoluble residue was filtered, the residue was mixed melt flux.

Method two. the sample with hydrochloric acid, nitric acid, perchloric acid decomposition, insoluble residue was filtered, and the residue with sulfuric acid and hydrofluoric acid in addition to silicon, with a mixed melting Melting agent residue.

4 Reagents

Unless otherwise stated, use only reagents of recognized analytical grade and distilled water or equivalent purity of its water, in line with the provisions of GB/T 6682's.

4.1

manganese metal, mass fraction of 99.9%.

4.2

calcium carbonate.

4.3

iron, the mass fraction of 99.99%.

Hydrochloric acid 4.4, $\rho = 1.19\text{g/mL}$.

4.5

hydrochloric acid, 11.

4.6

hydrochloric acid, 150.