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NATIONAL STANDARD OF THE PEOPLE'S REPUBLIC OF CHINA

GB/T 6730.58-2017

Replacing GB/T 6730.58-2004

Iron ores -- Determination of vanadium 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 58.

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

This Part replaces GB/T 6730.58-2004 "Determination of vanadium content of iron ore flame atomic absorption spectrometry", this section and

GB/T 6370.58-2004 In comparison, except for some editorial changes, the main technical changes are as follows.

--- Method 1 Determination of vanadium content (mass fraction) from 0.005% to 0.05% modified to 0.004% ~ 0.06%, Method 2 Vanadium

The determination range (mass fraction) was changed from 0.05% ~ 0.5% to 0.06% ~ 0.5%.

---.2004 edition Chapter 4 "analysis unless otherwise indicated, the use of only certified analytical reagents and distilled water or its pure

Degree of water, in line with the provisions of GB/T 6682 "to" analysis Unless otherwise indicated, the use of only approved analytical test

Agents and in line with GB/T 6682 provisions of more than two distilled water or water of equivalent purity ";

---.2004 Edition 4.3 "iron oxide" was revised to "high purity ferric oxide";

---.2004 version 5.5 in the atomic absorption spectrometer performance indicators, revised to "the lowest precision", "detection limit", "school

Linear "and" characteristic concentration "of the quasi-curve;

--- The.2004 version of the 6.2 pre-dried sample preparation "Fully mixed laboratory samples, shrinkage sampling method according to GB/T 6730.1

Dry the sample at 105 ° C +/- 2 ° C. "Modify" to fully mix laboratory samples, sample-cut method with sampling. press

GB/T 6730.1 of the provisions of the sample at 105 degrees C +/- 2 degrees C temperature, cooled to room temperature in a desiccator standby ";

--- In.2004 edition 7.4.2 "add 1.0g sodium carbonate (see 4.2)" to "add 0.3g ~ 1.0g sodium carbonate (see 4.2)";

--- The.2004 version of 7.4.5 measurements added "hollow cathode lamp preheated 10min" and "if necessary, each calibration solution

Spray water and test solution into the water zero. Each calibration solution and test solution spray at least twice, calculate the calibration solution and test solution average absorbance

degree";

--- The.2004 edition of 8.2.1 "repeatability and allowable difference" be replaced by "precision" and modify the formula;

--- The.2004 version of 8.2.4 modified the acceptance value of the analytical standard sample/reference standard sample C value formula.

This section uses the redrafted law Amendment uses ISO 9683-2.2009 "determination of vanadium content of iron ore Part 2. Flame atoms

Absorption Spectrometry ".

This part of the technical differences with ISO 9683-2.2009 and its reasons are as follows, the provisions of these differences have been adopted in its outer page

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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 (see 6.1 and 6.2) cited in ISO 9683-2.2009 with GB/T 6730.1 equivalent to the International Standard;

* increase the reference GB/T 7728 (see 5.5);

* increase the reference GB/T 8170 (see 8.2.5);

* Replace ISO 3082 (see 6.1) cited in ISO 9683-2-2009 with GB/T 10322.1 equivalent to the international standard;

* ISO 648 referenced in ISO 9683-2.2009 is deleted (see Chapter 5 of ISO 9683-2-2009);

* GB/T 12806 with non-equivalent use of international standards instead of ISO 9683-2.2009 cited ISO 1042 (see paragraph

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).

--- After the sample was acid-decomposed residue, the amount of anhydrous sodium carbonate was changed from "0.3g" to "0.3g ~ 1.0g" because

Meet the analytical requirements to facilitate the operation under the premise (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. Shanghai Baoshan Iron and Steel Industry and Technology Services Ltd., Baoshan Iron and Steel Co., Ltd., Metallurgical Industry Information Standards

Institute.

1 Scope

GB/T 6730 provisions of this part of the flame atomic absorption spectrometry determination of vanadium content.

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

Method 1 is 0.004% ~ 0.06%, Method 2 is 0.06% ~ 0.5%.

2 Normative references

The following documents for the application of this section 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 regulations 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

Dissolve the test sample in a polytetrafluoroethylene (PTFE) beaker with hydrochloric acid, add hydrofluoric acid and nitric acid, and evaporate to dryness. Hydrochloric acid and boron are added

The acid evaporated again to dryness. Method 1 Dissolved salts with hydrochloric acid and nitric acid, Method 2 dissolved in hydrochloric acid, filtered, the residue was burned and sodium carbonate melt

Melt, dissolve the cooled melt in the filtrate.

(Only for Method 1) .In a solution of cerium (IV) oxide, a solution of phosphoric acid and sodium tungstate was added and the solution was treated with 1 1 of 1-pentanol and 4-a

2-pentanone mixed reagent to extract the vanadium, treating the organic phase with water, and then adding the ascorbic acid solution to extract the vanadium into the water phase.