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NATIONAL STANDARD OF THE PEOPLE'S REPUBLIC OF CHINA

GB/T 6730.12-2016

Iron ores - Determination of aluminium content - Chrome azurol S spectrophotometric method

铁矿石 铝含量的测定 铬天青S分光光度法

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Standardization Administration of the PRC

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Foreword

GB/T 6730 "iron ore" is divided into dozens of parts. This part is part 12 of GB/T 6730. This part is drafted in accordance with the rules given in GB/T 1.1-2009. This part of the GB/T 6730.12-1986 "iron ore chemical analysis method chrome azure S photometric determination of aluminum". This part with GB/T 6730.12-1986 In addition to editorial changes, the main technical changes are as follows:

--- the standard name to "iron ore aluminum content determination of chrome azure S spectrophotometric method";

--- increase the warning, normative reference documents, test reports and so on; - modify the extraction separation to zinc-EDTA masking;

--- the measurement range from 0.050% ~ 0.50% to 0.050% ~ 2.50%;

--- use the "subtraction method" to correct the indicator and blank; The inter-laboratory precision tests were carried out, and the "allowable difference" was replaced by the statistical repeatability r and the reproducibility limit R. This part is made by China Iron and Steel Industry Association. This section is headed by the National Commission on Standardization of Iron Ore and Direct Reductive Iron (SAC/TC317). This part of the drafting unit. Wuhan Iron and Steel (Group) Company, Metallurgical Industry Information Standards Institute. The main drafters of this part. Guo Fang, Shen Ke, Lu Qi, Li Xiaojie, Xu Jianping, Chen Zhibin. This part of the previous version of the standard to replace the release of the situation.

--- GB/T 6730.12-1986. Determination of aluminum content of iron ore Photometric method WARNING - Personnel using this section should have formal laboratory experience. This section does not indicate all possible security issues with the user Have the responsibility to take appropriate safety and health measures and to ensure compliance with the conditions set forth in the relevant national regulations.

1 Scope

Part 12 of China's national series on the analysis of iron ores, determining aluminium by chrome azurol S spectrophotometry. Alumina is one of the two components that make up an iron ore's gangue, and the blast furnace operator watches it as closely as the iron. Alumina raises the melting point and, more importantly, the viscosity of the slag, and a viscous slag does not separate cleanly from the metal, does not desulfurise well, and will not run out of the furnace - so an ore's alumina content determines how much flux must be added and what the whole burden looks like. Because China imports most of its ore and the Australian and Indian sources differ markedly in alumina, the number is priced into every cargo. Chrome azurol S forms an intensely coloured complex with aluminium, which is what makes a photometric determination possible at these low levels. This part applies to iron ore, iron concentrate, sinter and pellets over a mass fraction range of 0.050 to 2.50 per cent.

This part of GB/T 6730 specifies the determination of aluminum content by chrome azurol S spectrophotometry. This part applies to iron ore, iron concentrate, sintered ore and pellets in the determination of aluminum content, the determination of the range (mass fraction). 0.050% ~ 2.50%.

2 Normative reference documents

The following documents are indispensable for the application of this document. For dated references, only the dated edition applies to this article Pieces. For undated references, the latest edition (including all modifications) applies to this document.

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

GB/T 6379.2 Accuracy of measurement methods and results (accuracy and precision) - Part 2. Determination of standard measurement methods The basic method of sex and reproducibility

GB/T 6682 Analytical laboratory water specifications and test methods Preparation of pre - dried samples for analysis of iron ore

GB/T 6730.1 Metallurgical products - Chemical analysis - Spectrophotometric methods Representation and Judgment of Numerical Correction Rule and Limit Value of GB/T 8170

GB/T 10322.1 Iron Ore Sampling and Sample Preparation

GB/T 12806 laboratory glass instrument single standard line capacity bottle

GB/T 12807 Laboratory glass instruments - Index pipettes

GB/T 12808 Laboratory glass instruments Single line suction pipette

3 Principle

The sample was melted with a mixed flux and diluted with dilute hydrochloric acid. Zinc-EDTA masked iron, manganese and other ions, hydrogen peroxide masked titanium ions in 6 times In the methyl tetramine buffer system, aluminum and chrome azure S produce a magenta complex and measure the absorbance at 545 nm to determine the aluminum content.

4 Reagent

Unless otherwise stated, only the reagents identified as analytical reagents and those of Class 3 and Grade 3 in accordance with GB/T 6682 are used in the analysis. Water or water equivalent to its purity.

4.1 mixed flux, take 2 parts of sodium carbonate and 1 part of boric acid grinding and mixing.

4.2 high purity ferric oxide, >= 99.95% (mass fraction).

4.3 Hydrochloric acid, 1 5.