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

GB/T 6730.38-2017

**Iron ores - Determination of cobalt content - Nitroso-R salt
spectrophotometric method**

铁矿石 钴含量的测定 亚硝基-R盐分光光度法

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Foreword

GB/T 6730 "iron ore" is divided into dozens of sections. This section GB/T 6730 Part 38. This section drafted in accordance with GB/T 1.1-2009 given rules. This Part replaces GB/T 6730.38-1986 "Determination of cobalt content of iron ore chemical analysis methods nitroso-R salt spectrophotometry", this section Compared with GB/T 6730.38-1986, in addition to editorial changes, the main technical changes are as follows:

- Standard name was changed to "Determination of cobalt content of iron ore nitroso-R salt spectrophotometry";
- Added "warning" "range" "normative references" "equipment" "test report" and other chapters and content, the original chapter number Change accordingly
- Clear and standardized sample and sample preparation of the specific requirements;
- "sample size" to "sample size", and clear the weighing accuracy;
- For ease of use to increase the pH adjustment details described;
- Removed the coefficient (1) of the coefficient "K" and "K" of the statement;
- Remove the "standard sample allowed poor" column in Table 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 section is drafted by Ningbo Inspection and Quarantine Science and Technology Research Institute, China Inspection and Certification Group Ningbo Co., Ltd., metallurgical industry information Standard Institute, Ningbo Economic and Technological Development Zone Boren maritime testing firm, Anshan Iron and Steel Group Mining Co., Ltd. The main drafters of this section to pay slowly, Liu Yongfeng, Liu Shuiqing, Huang Shijie, Zhang Aizhen, Rong Defu, Liao Haiping, Chen Hahai, Chen Zhibin, Ying Haisong, Wang Xu. This part replaces the standards previously issued as.

--- GB/T 6730.38-1986. Iron ores - Determination of cobalt content Nitroso-R salt spectrophotometry Warning

--- personnel should use this part of the formal laboratory work experience. This section does not indicate all possible safety issues question. It is the user's responsibility to take appropriate safety and health measures and to ensure compliance with the requirements of the relevant state laws and regulations.

1 Scope

Part 38 of China's national series on the analysis of iron ores, determining cobalt by nitroso-R salt spectrophotometry. Cobalt occurs in iron ores where the deposit has a magmatic or hydrothermal origin, associated with the nickel and copper sulfides, and it is measured for the reason such elements always are: it goes into the hot metal and stays there. In most steels that is unwanted, though at these levels it is tolerable; in others cobalt is deliberately alloyed and expensive. Its greater significance now is as a by-product opportunity, since cobalt has become one of the most strategically watched metals in the world and iron ore tailings are among the places it is being looked for. Nitroso-R salt gives an intensely coloured cobalt complex that survives the strong acid treatment used to destroy the complexes of the interfering metals, which is what makes the determination selective. This part applies to iron ore, iron concentrate, sinter and pellets over 0.020 to 0.500 per cent.

GB/T 6730 provisions of this part of the nitroso-R salt spectrophotometric determination of cobalt content. This section applies to the determination of cobalt content in iron ore, iron ore concentrate, sinter and pellet. Determination of the range (mass fraction) .0.020% ~ 0.500%.

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 6682 analytical laboratory water specifications and test methods Preparation of pre-dried specimens for analysis of

GB/T 6730.1 Methods for chemical analysis of iron ores

GB/T 10322.1 Iron ore sampling and sample preparation methods

GB/T 12806 laboratory glassware single standard line capacity bottle

GB/T 12808 laboratory glassware single standard pipette

3 Principle

Samples were melted with sodium peroxide, leached with water and acidified with hydrochloric acid. The solution was adjusted to a pH of about 2. Potassium dihydrogen phosphate masked iron and controlled The solution is at a pH value of

2.5 to 3.5. Under heating, the nitroso-R salt and the cobalt form a stable red complex at a wavelength of 530 nm, The absorbance is measured and the concentration is read from the cobalt calibration curve. Copper, nickel, etc., and color developer generated complex, add sulfuric acid and boil after Be eliminated

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.

4.1 Sodium peroxide (Na_2O_2).

4.3 Nitric acid, p about

1.42 g/mL. Sulfuric acid, p approximately

4.5 hydrochloric acid, 1 1.

4.6 nitric acid, 1 1.

4.7 sulfuric acid, 3 2.