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NATIONAL STANDARD OF THE PEOPLE'S REPUBLIC OF CHINA

GB/T 6730.34-2017

Iron ores - Determination of tin content - Pyrocatechol violet cetyltrimethylammonium bromide spectrophotometric method

铁矿石 锡含量的测定 邻苯二酚紫-溴化十六烷基三甲胺分光光度法

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Standardization Administration of the PRC

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Foreword

GB/T 6730 "iron ore" is divided into dozens of sections. This section GB/T 6730 Part 34. This section drafted in accordance with GB/T 1.1-2009 given rules. This Part Replaces GB/T 6730.34-1986 "Methods for chemical analysis of iron ores Catechin violet - cetyltrimethylammonium bromide Luminousness Determination of tin content, "This section compared with GB/T 6730.34-1986, in addition to editorial changes, the main technical changes are as follows:

--- The standard name was changed to "determination of tin content of iron ore catechin violet - cetyltrimethyl ammonium bromide spectrophotometry";

--- Added "warning" "Normative references" and "test report" chapter and content;

--- Clear and standardized sample and sample preparation of the specific requirements;

--- Standard "sample size" to "sample volume", and clear the weighing accuracy;

--- Deleted the coefficient (1) in the coefficient "K" and "K" statement. 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.Ningbo Inspection and Quarantine Science and Technology Research Institute, Alashankou Exit Inspection and Quarantine, Metallurgical Industry Information Standards Institute. The main drafters of this section. Chen Hehai, Lu Xinming, Zhang Aizhen, Li Yulu, Ren Chunsheng, Ying Haisong, Chen Zibin, Fu Ran Ran, Liao Haiping, Wang Yan. This part replaces the standards previously issued as.

--- GB/T 6730.34-1986. Determination of tin content in iron ore Catechol violet - Cetyltrimethylammonium bromide spectrophotometric method Warning

--- personnel using this section should have 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 34 of China's national series on the analysis of iron ores, determining tin by pyrocatechol violet spectrophotometry with cetyltrimethylammonium bromide. Tin is a minor element in iron ore and a disproportionately troublesome one in steel. Like copper and arsenic it is a tramp element: it cannot be oxidised out in the converter because it is nobler than iron, so once it is in the metal it stays there and accumulates through every recycling cycle. Its particular damage is at the grain boundaries, where it segregates and causes hot shortness - the steel cracks when it is rolled hot, which is a defect that appears at the mill rather than at the furnace and is expensive by then. The method's surfactant is not incidental: cetyltrimethylammonium bromide forms a ternary complex with the tin and dye that is far more intensely coloured than the binary one, which is what brings these levels within photometric reach. This part applies to iron ore, concentrate, sinter and pellets over 0.005 to 0.200 per cent.

GB/T 6730 provisions of this part of the catechol violet - cetyl trimethyl ammonium bromide spectrophotometric determination of tin content. This section applies to iron ore, iron ore, sinter and pellet Determination of tin content. Determination of the range (mass fraction) .0.005% ~ 0.200%.

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 samples for analysis of iron ores GB/T 6730.1

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 12806 laboratory glassware single standard line capacity bottle

GB/T 12807 Laboratory glassware graduated pipette

GB/T 12808 laboratory glassware single standard pipette

3 Principle

Samples with hydrofluoric acid, nitric acid, sulfuric acid decomposition, insoluble residue with sodium peroxide melting. Distillation of tin in the form of stannic bromide and interfering elements Elemental separation, in the sulfuric acid - citric acid medium (pH1.3 ~ 1.7), tin and catechola violet, cetyltrimethyl ammonium bromide colored ternary Complex, measuring its absorbance at a wavelength of 660 nm, thereby measuring tin.

4 Reagents and materials

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

4.1 Sodium peroxide.

4.2 nitric acid, p about

4.3 hydrofluoric acid, p about

4.4 hydrobromic acid, p approximately

4.5 hydrogen peroxide, 30%.

4.6 sulfuric acid, 1 1.