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

GB/T 6730.30-2017

**Iron ores - Determination of chromium content -
Diphenylcarbazide spectrophotometric method**

铁矿石 铬含量的测定 二苯基碳酰二肼分光光度法

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Foreword

GB/T 6730 "iron ore" is divided into dozens of sections. This section GB/T 6730 Part 30. This section drafted in accordance with GB/T 1.1-2009 given rules. This Part replaces GB/T 6730.30-1986 "chemical analysis of iron ores diphenylcarbazide spectrophotometric method for the determination of chromium content," headquarters Points compared with GB/T 6730.30-1986, in addition to some editorial changes, the main technical changes are as follows:

- The standard name was changed to "Determination of chromium content of iron ore diphenylcarbodihydrazide spectrophotometry";
- Added "warning" "normative references" "instrument" and "test report" chapter and content, the original chapter number has been adjusted accordingly;
- Clear and standardized sample and sample preparation of the specific requirements;
- "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 revised unit. Ningbo Inspection and Quarantine Science and Technology Institute, Shanghai Entry-Exit Inspection and Quarantine Bureau, Metallurgical Industry Information Standards Institute. The main drafters of this section. Liao Haiping, Ren Liping, He Yang, pay Ran, Zhang Jianbo, Chen Hehai, Ren Chunsheng, Chen Zhibin. This part of the standard replaces the previous version of the release.
- GB/T 6730.30-1986. Iron ores - Determination of chromium content Diphenyl carbazide spectrophotometry 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 30 of China's national series on the analysis of iron ores, determining chromium by diphenylcarbazide spectrophotometry. Chromium in iron ore is present at trace levels and is watched for two reasons that pull in opposite directions. In the furnace it is largely reduced into the hot metal, where it is either a useful alloying element or an uncontrolled contaminant depending on what grade the steel is meant to be - and it cannot be removed by the ordinary refining reactions, so it accumulates. Environmentally it matters because chromium in its hexavalent form is toxic and mobile, and the tailings and slags of ore processing are where it can appear. The diphenylcarbazide reaction is one of the classical colour reactions of analytical chemistry, specific to hexavalent chromium and intensely coloured, which is why it remains the reference method at trace levels. This part applies to iron ore, iron concentrate, sinter and pellets over a mass fraction range of 0.010 to 0.500 per cent.

GB/T 6730 provisions of this part of the diphenylcarbazide spectrophotometric determination of chromium content. This section applies to iron ore, iron ore, sinter and pellets Determination of chromium content. Measuring range (mass fraction) .0.010% ~ 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 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

The sample was dissolved by alkali melting, water leaching and dry filtration, and the supernatant was taken. In a sulfuric acid (

0.1 mol/L) medium, hexavalent chromium and diphenylcarbodiimide Hydrazine generates a soluble fuchsine complex. Absorbance was measured at 545 nm. To determine the

chromium content. Vanadium interfere with this law. When the vanadium content is less than $200\mu\text{g}$, can be placed in the color after 30min to eliminate interference; when the vanadium content is greater than $200\mu\text{g}$ or vanadium content than the chromium content of 10 times, with 8-hydroxyquinoline - chloroform extraction and separation.

4 Reagent

Unless otherwise stated in the analysis, only the use of analytical reagents and meet the GB/T 6682 provisions of more than three distilled water or its purity phase When the water.

4.1 Sodium peroxide.

4.2 anhydrous sodium carbonate.

4.3 Ferric oxide, purity $\geq 99.99\%$.

4.4 Trichloromethane.

4.5 sulfuric acid, 1 9.