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

GB/T 6730.36-2016

Replacing GB/T 6730.36-1986

**Iron ores -- Determination of copper content -- Flame atomic
absorption spectrometric method**

铁矿石 铜含量的测定 火焰原子吸收光谱法

(English Translation)

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Foreword

GB/T 6730 "iron ore" is divided into the following parts.

- Part 1 Preparation of pre-dried samples for iron ore analysis;
- Part 36 - Determination of copper content of iron ore - Flame atomic absorption spectrometric method;

This part is part 36 of GB/T 6730.

This part is drafted in accordance with the rules given in GB/T 1.1-2009.

This part of the replacement GB/T 6730.36-1986 "Iron ore chemical analysis method Atomic absorption spectrophotometric determination of copper", this part Compared with GB/T 6730.36-1986, in addition to editorial changes, the main technical changes are as follows.

- Added "warning";
- an increase in the "1 scope" and "2 normative reference documents" normative general elements, and an increase of "9 test report" normative technology Factor;
- modified the "sample decomposition" in the amount of reagents;
- modified the "copper percentage" of the formula;
- modified the expression of "final result calculation";
- modified "precision";
- this part adds "8.3 oxide conversion factor";
- the contents of Appendix B of the original national standard have been removed and the contents of the new Appendix B and Appendix C have been added.

This part uses the re-drafting method to modify ISO 5418-2.:2006 "Determination of copper content of iron ore Part 2. Flame atomic Absorption spectroscopy ".

This section compares with the international standard ISO 5418-2.:2006, except for editorial changes, the main technical differences are as follows.

--- normative reference documents with national standards instead of the corresponding international standards, and increase the reference GB/T 12807, the specific adjustment see the first 2 chapters;

- 7.4.1 of ISO 5418-2.:2006 "The residue was melted with sodium carbonate and leached with dilute nitric acid (1 50)" modified as "residue with 1 g Sodium carbonate melting, with dilute nitric acid (1 20) leaching";

--- 7.4.5 in ISO 5418-2.:2006 "Remove part of the test solution (x mL, $x \geq 20$), add 0.2 (100-x) mL base solution" modified to "accurately remove part of the test solution 20.00mL in 100mL volumetric flask, add 16mL bottom liquid".

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. Shanghai Entry-Exit Inspection and Quarantine Bureau of industrial products and raw materials testing technology center, Wuhan Iron and Steel Institute, Metallurgical Industry letter Interest standard institute.

1 Scope

This part of GB/T 6730 specifies the method for the determination of copper in iron ores by flame atomic absorption spectrometry.

This part applies to natural iron ore, iron concentrate and block, including the determination of copper content in sintered products, the determination of the range (mass fraction).

0.004% to 0.8%.

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 6682 Analytical laboratory water specifications 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, MOD) GB/T 10322.1 Iron ore sampling and sample preparation method (GB/T 10322.1-2014, ISO 3082.:2009, IDT) GB/T 12806 laboratory glass instrument single standard line capacity bottle (GB/T 12806-2011, ISO 1042.:1998, NEQ) GB/T 12807 Laboratory glass instrumentation pipette (GB/T 12807-1991, neqISO 835. 1981) GB/T 12808 Laboratory glass instruments Single line pipette (GB/T

12808-1991, eqvISO 648. 1977)

3 Principle

The samples were decomposed with hydrochloric acid, nitric acid and hydrofluoric acid, and the chlorinated fuming was added. After the volume was set at 324.7 nm at the atomic absorption spectrometer, the absorbance of copper was measured with an air-acetylene flame and the copper content was calculated.

4 Reagent

Analyze only the approved analytical reagent, the water should meet the secondary water specified in GB/T 6682.

The distillation apparatus used shall be free of copper and the deionized water shall not be in contact with the copper and copper faucet.

4.1

metal iron powder, copper content (mass fraction) $\leq 0.001\%$.

4.2

anhydrous sodium carbonate.

4.3

hydrochloric acid, $\rho 1.19\text{g/mL}$.

4.4

Hydrochloric acid, 1 2.

4.5

nitric acid, $\rho 1.42\text{g/mL}$.

4.6

nitric acid, 1 1.

4.7

perchloric acid, $\rho 1.67\text{g/mL}$.

4.8

hydrofluoric acid, $\rho 1.15\text{g/mL}$.

4.9

Bottom solution. Dissolve 15 g of metallic iron powder (see 4.1) in 150 mL of hydrochloric acid (see 4.4). The solution was cooled to room temperature and 10 mL of nitric acid was added (see