

ICS 73.060.10

CCS D 31



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

GB/T 6730.42-2017

**Iron ores - Determination of lead content - Dithizone
spectrophotometric method**

铁矿石 铅含量的测定 双硫脲分光光度法

Issued on: September 7, 2017

Implemented on: June 1, 2018

**Issued by: General Administration of Quality Supervision, Inspection and
Quarantine;
Standardization Administration of the PRC**

Table of Contents

- 1 Scope
- 2 Normative references
- 3 Principle
- 4 Reagents and materials
- 4.2 Hydrochloric acid, about
- 4.3 Nitric acid, about
- 4.4 Perchloric acid, about

Foreword

GB/T 6730 "iron ore" is divided into dozens of sections. This section GB/T 6730 Part 42. This section drafted in accordance with GB/T 1.1-2009 given rules. This section instead of GB/T 6730.42-1986 "Iron ore analysis method for the determination of lead content by dithionite-sulfuric acid method", this section GB/T 6730.42-1986 compared to editorial changes in addition to the main technical changes are as follows:

- Standard name was changed to "Determination of lead content in iron ore dithionite-sulfuric acid 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;
- Standard "sample size" to "sample volume", and clear the weighing accuracy;
- Removed the coefficient (1) of the coefficient "K" and "K" of the statement;
- Added "the final result of the calculation." 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/TC319) centralized. This part of the drafting unit. Ningbo Inspection and Quarantine Science and Technology Research Institute, Anshan Iron and Steel Group Mining Co., Ltd., Metallurgical Industry Information Standards Institute. The main drafters of this section. Chen Hehai, Deng Yun, Li Yulu, Zhang Aizhen, Ren Chunsheng, Ying Haisong, Wang Yan, Chen Zi Bin, pay Ran Ran. This part of the standard replaces the previous version of the release.
- GB/T 6730.42-1986. Iron ores - Determination of lead content Dithionite-sulfuric acid 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 42 of China's national series on the analysis of iron ores, determining lead by dithizone spectrophotometry. Lead in iron ore is measured chiefly as an environmental and process matter rather than a metallurgical one. It is volatile at ironmaking temperatures, so much of it leaves the furnace in the dust and gas rather than in the metal - which means it concentrates in the collected dust and sludge, and those are what have to be handled, stored or recycled, with lead determining how they may be treated. What lead does remain in the hearth is not helpful either, since it is insoluble in iron, collects at the bottom of the furnace and can penetrate the refractory. Dithizone is the classical reagent of trace metal analysis, forming intensely coloured chelates extractable into organic solvent, which is what gives the method its sensitivity and its separation from the iron matrix. This part applies to iron ore, iron concentrate, sinter and pellets over 0.010 to 0.50 per cent.

GB/T 6730 provisions of this part of the dithizone spectrophotometric determination of lead content. This section applies to iron ore, iron ore, sinter and pellets Determination of lead content. Measuring range (mass fraction) .0.010% ~ 0.50%.

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

Sample with hydrochloric acid, nitric acid, perchloric acid decomposition, filtration; residue with sodium carbonate - boric acid melting, with ammonium citrate mask iron, aluminum

and other metal ions, With ammonium hydroxide adjusted to pH7 ~ 9, with dithizone - chloroform, lead, zinc and other organic phase extraction, and then dilute hydrochloric acid stripped in the aqueous phase. in Ammonium citrate, hydroxylamine hydrochloride, potassium cyanide in the presence of pH adjusted to 8.5 ~ 11.0, plus dual sulfur - chloroform extraction color. At a wavelength of 510 nm Department of measurement of its absorbance, to determine the amount of lead.

4 Reagents and materials

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

4.1 mixed flux anhydrous sodium carbonate boric acid, 2 1, research fine, mix well.

4.4 Perchloric acid, about

4.5 hydrochloric acid lotion, 1 250, pH1.3 ~ 1.6, if necessary, calibrated with a pH meter.

4.6 perchloric acid, 1 100.