

ICS 73.060.10

CCS D 31



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

GB/T 6730.66-2009

**Iron ores - Determination of total iron content - Automatic
potentiometric titration method**

铁矿石 全铁含量的测定 自动电位滴定法

Issued on: October 30, 2009

Implemented on: May 1, 2010

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

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Foreword

GB/T 6730 this part of Annexes A and B are normative appendix Appendix C is informative appendix. This part is proposed by the China Iron and Steel Association. This part of the National Standardization Technical Committee reduced iron ore and direct centralized. This part mainly drafted by: Ningbo Inspection and Quarantine Institute of Science and Technology, Baosteel, Metallurgical Industry Information Standards Institute, days Tianjin Entry-Exit Inspection and Quarantine Bureau, Shenzhen Entry-Exit Inspection and Quarantine Shanghai, China Wantong Technology Center, Shanghai Mettler the company. The main drafters of this section. should pine, Zhangai Zhen, Wang Yan, Ji Hongling, Chenzi Bin, Gu Songhai, Wanglou Ming, Li Chen. Determination of total iron content of iron ore Automatic potentiometric titration Warning. Use GB/T 6730 this part of the staff should have regular laboratory work experience. This section does not indicate all possible Security issues. Users have the responsibility to take appropriate safety and health practices and to ensure compliance with the conditions relevant national regulations.

1 Scope

Part 66 of China's national series on the analysis of iron ores, determining total iron by automatic potentiometric titration. This is the determination that everything else in the trade depends on: total iron is what an ore cargo is bought and paid for, and a tenth of a per cent on a Capesize shipment is a large sum of money. The classical method is a redox titration, and the potentiometric endpoint replaces the visual indicator with an electrode, which removes the operator's judgement from the result and lets the titration be automated - the reason it is preferred where hundreds of determinations are run daily at a port or a works laboratory. It remains a titration, though, and its accuracy is why it survives against instrumental methods: it is an absolute determination against a standard solution rather than a comparison against a calibration. This part applies to natural iron ores, concentrates and agglomerates including sinter with copper, vanadium and manganese below 0.1 per cent, over a range of 40 to 70 per cent.

GB/T 6730 This section specifies the method for the determination of total iron content in iron ore by automatic potentiometric titration. This section applies to copper, vanadium,

manganese content of less than 0.1% of the natural iron ore, iron ore and agglomeration, including total iron content in the sintered product Determination. Measurement range (mass fraction). 40% to 70%.

2 Normative references

The following documents contain provisions which, through reference to

GB/T 6730 to the present, constitute provisions of this section. For dated reference documents Member, all subsequent amendments (not including errata content) or revisions do not apply to this section, however, encouraged to reach under this section Parties to research agreement to use the latest versions of these documents. For undated reference documents, the latest versions apply to this section.

GB/T 6682 analytical laboratory use specifications and test methods (GB/T 6682-2008, ISO 3696. 1987, MOD)

GB/T 6730.1 Method for analysis of chemical analysis of iron pre-drying of the sample preparation (GB/T 6730.1-1986, idt ISO 7764.1998)

GB/T 6730.3 gravimetric method for chemical analysis of iron absorption measurement and analysis of water samples

GB/T 8170 repair value expressed about the rules and limit values and judgment

GB/T 10322.1 iron ore sampling and sample preparation method (GB/T 10322.1-2000, idt ISO 3082.1998)

GB/T 12806 Laboratory glassware single marking flask (GB/T 12806-1991, neq ISO 1042. 1983)

GB/T 12808 standard laboratory glassware single line pipette (GB/T 12808-1991, neq ISO 648.1997) JJG814 automatic potentiometric titrator Principle

3 Sample dissolved by heating with hydrochloric acid, stannous chloride reduction in the majority of iron, the remaining iron reduction with titanium trichloride with an excess of potassium dichromate oxidation reducing agent. Potassium dichromate as titrant titration reduced iron with an automatic potentiometric titrator titration endpoint titration and determination to consume potassium dichromate To calculate the volume of total iron content in the sample.

4 Reagents

Unless otherwise indicated, in the analysis using only reagents of recognized analytical grade.

4.1 potassium pyrophosphate, fine.

4.2 hydrochloride, rho1.19g/mL.

4.3 sulfate, rho1.84g/mL.

4.4 phosphoric acid, rho1.70g/mL.

4.5 hydrofluoric acid, rho1.13g/mL.

4.6 hydrogen peroxide solution, about 30%.

4.7 hydrogen peroxide solution, 1 + 9.

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