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

GB/T 6730.23-2025

Replacing GB/T 6730.23-2006

**Iron ores - Determination of titanium content - The ferric
ammonium sulfate titrimetric method**

铁矿石 钛含量的测定 硫酸铁铵滴定法

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Foreword

This document is in accordance with the provisions of GB/T 1.1-2020 "Guidelines for standardization work Part 1: Structure and drafting rules for standardization documents" Drafting.

This document is Part 23 of GB/T 6730. For the published parts of GB/T 6730, see Appendix A.

This document replaces GB/T 6730.23-2006 "Determination of titanium content in iron ore - Ammonium ferric sulfate titration method" and GB/T 6730.23- Compared with 2006, in addition to structural adjustments and editorial changes, the main technical changes are as follows.

- a) The preparation of titanium standard solution has been changed (see 5.12, 4.16 of the 2006 edition);
- b) The preparation and calibration of "Ammonium Ferric Sulfate Standard Solution" have been changed (see 5.13, 4.17 of the 2006 edition);
- c) The sample quantity has been changed (see 8.2, 7.2 of the 2006 edition);
- d) Added the "melting-acidification method" decomposition method (see 8.5.1.2);
- e) Reduced usage of ammonium sulfate (see 8.5.2, 7.4.2 of the 2006 edition);
- f) Added titration method using "neutral red" as indicator (see 8.5.3);
- g) The expressions of "precision", "correctness check" and "calculation of final result" have been changed (see 9.2, 8.2 of the 2006 edition).

Please note that some of the contents of this document may involve patents. The issuing organization of this document does not assume the responsibility for identifying patents.

This document was proposed by the China Iron and Steel Association.

This document is under the jurisdiction of the National Technical Committee on Iron Ore and Direct Reduced Iron (SAC/TC317).

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This document was first issued in 1986, revised for the first time in 2006, and this is the second revision.

Introduction

Iron ore is the main raw material of the steel industry. In the standard system of the steel industry, the standard system of the determination method of the chemical composition of iron ore is one of the most important standards.

It is a very important part of the production process and plays an important role in ensuring the quality of iron ore products. This series of method standards serves the production of iron ore.

production, trade and application, providing technical support for the high-quality development of China's steel industry.

GB/T 6730 includes a series of standards for the determination of chemical composition of iron ore, which respectively stipulates the water content, total iron content, metal content and so on in iron ore products.

Iron, ferrous iron, silicon, aluminum, calcium, magnesium, sulfur, phosphorus, manganese, titanium, total rare earth, barium, chromium, vanadium, tin, copper, cobalt, nickel, zinc, niobium, bismuth, potassium, sodium, carbon, lead, arsenic, Determination of chemical composition such as cadmium, mercury, fluorine, chlorine, loss on ignition and combined water.

In 1986, GB/T 6730 first issued 51 national standards for the determination of chemical composition of iron ore.

The development of technology and actual production needs have led to the continuous

development and revision of the standard system over the years, which is currently For details of the constituent documents of GB/T 6730, please see Appendix A.

GB/T 6730.23 provides a method for determining the titanium content in iron ore by ammonium ferric sulfate titration.

Determination of titanium content in iron ore-Ammonium ferric sulfate titration method
Warning. Personnel using this document should have experience in formal laboratory work practices. This document does not address all possible safety issues.

For any problems, users are responsible for taking appropriate safety and health measures and ensuring that the conditions stipulated by relevant national laws and regulations are met.

1 Scope

This document describes a method for the determination of titanium content in iron ores by titration with ammonium ferric sulfate.

This document applies to the determination of titanium content in natural iron ore, iron concentrate and lump ore, including sintered products. Titanium content measurement range (mass Score).1.00%~9.00%.

2 Normative references

GB/T 6379.1

GB/T 6379.2

GB/T 6682

GB/T 8170

GB/T 10322.1

GB/T 12805

GB/T 12806

GB/T 12808

3 Terms and Definitions

There are no terms or definitions that require definition in this document.

4 Principles

The sample was melted with sodium peroxide, acidified with hydrochloric acid, and in a hydrochloric acid and sulfuric acid medium, isolated from air, and the tetravalent titanium

was reduced to trivalent with metallic aluminum.

Titanium, in the presence of an indicator, is titrated with ammonium ferric sulfate standard solution to determine the trivalent titanium in the solution. The consumption of ammonium ferric sulfate standard solution is used to calculate the Titanium content.

5 Reagents and Materials

Unless otherwise specified, only analytically pure reagents and grade 3 or higher water as specified in GB/T 6682 or water with its purity is equivalent to water.

5.1 Aluminum sheet, purity not less than 99.5%.