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

GB/T 6730.89-2024

**Iron ores-Determination of thorium content-Arsenazo III
spectrophotometric method**

铁矿石 钍含量的测定 偶氮胂III分光光度法

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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 89 of GB/T 6730 "Iron Ore". The published parts of GB/T 6730 are shown in Appendix A.

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 Iron Ore and Direct Reduced Iron Standardization Technical Committee (SAC/TC317).

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Introduction

Iron ore is the main raw material for the steel industry. In the standard system of the steel industry, the standard system for determination of 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 methods and standards serve 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 content of moisture, total iron, metal 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 methods for chemical components 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.

Based on the development of technology and actual production needs, a relatively complete standard system has been formed through continuous formulation and revision.

The published parts are listed in Appendix A.

Determination of thorium content in iron ore Arsenazo III spectrophotometry

Warning---People who use this document should have formal laboratory work experience.

This document does not address all possible safety issues.

The user is 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 specifies the method for the determination of thorium content in iron ore by the arsenazo III spectrophotometric method.

This document is applicable to the determination of thorium content in natural iron ore, iron concentrate, sintered ore and pelletized ore. The measurement range (mass fraction) is. 0.005%~0.60%.

2 Normative references

GB/T 6379.1

GB/T 6379.2

GB/T 6682

GB/T 6730.1

GB/T 6730.3

GB/T 8170

GB/T 10322.1

GB/T 12806

GB/T 12807

GB/T 12808

3 Terms and definitions

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

4 Principle

The sample was dissolved in hydrochloric acid and hydrofluoric acid, and after the perchloric acid started to smoke, it was diluted with

1-phenyl-3-methyl-4-benzoyl-5-pyrazolone (Simplified Chinese.

1-phenyl-3-methyl-4-benzoyl-5-pyrazolone) in the hydrochloric acid medium.

PMBP) is extracted with butyl acetate solution, and then stripped with hydrochloric acid to separate thorium from other major interfering elements, rare earths.

The liquid was prepared in hydrochloric acid medium with arsenazo III as a color developer, the absorbance was measured at a wavelength of 660 nm, and the mass fraction of thorium content was calculated.