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# NATIONAL STANDARD OF THE

# PEOPLE'S REPUBLIC OF CHINA

# GB/T 24189-2024

## Iron ores for blast furnace feedstocks - Determination of the reducibility by the final degree of reduction index

高炉用铁矿石 用最终还原度指数表示的还原性的测定

**(English Translation)**

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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 replaces GB/T 24189-2009 "Determination of the reducibility of iron ore for blast furnaces expressed by the final reduction index" and Compared with GB/T 24189-2009, in addition to structural adjustments and editorial changes, the main technical content changes are as follows:

a) The timer in the test equipment composition has been deleted (see 6.1 of the 2009 edition);

b) The restore operation has been changed (see 8.3, 8.3 of the 2009 edition);

c) Add the provisions for FeO conversion factor (see 9.1).

This document is equivalent to ISO 7215:2015 "Determination of the reducibility of iron ores for blast furnace use - expressed as the final reduction index".

## 1 Scope

This document specifies a relative measure of the degree of separation of oxygen from iron ore under conditions simulating the reduction zone of a blast furnace.

This document applies to lump ore, sintered ore and pelletized ore.

## 2 Normative references

The contents of the following documents constitute the essential clauses of this document through normative references in this document.

For referenced documents without a date, only the version corresponding to that date applies to this document; for referenced documents without a date, the latest version



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(including all amendments) applies to This document.

ISO 2597-1 Iron ores - Determination of total iron content - Part 1. Tin (II) chloride reduction titration method

**Note:** GB/T 6730.70-2013 Determination of total iron content in iron ore - Stannous chloride reduction titration method (ISO 2597-1:2006, MOD)

ISO 2597-2 Iron ores - Determination of total iron content - Part 2. Titanium (III) chloride reduction titration method

**Note:** GB/T 6730.5-2022 Determination of total iron content in iron ore - Titanium trichloride reduction titration method (ISO 2597-2:2019, MOD)

**Note:** GB/T 10322.1-2014 Iron ore sampling and sample preparation methods (ISO 3082:2009, IDT)

ISO 9035 Iron ores - Determination of acid-solu-bleiron (II) content-Titrimetric method)

**Note:** GB/T 6730.71-2014 Determination of ferrous iron content in acid-soluble iron ore by titration (ISO 9035:1989, MOD)

**Note:** GB/T 20565-2022 Terminology of iron ore and direct reduced iron (ISO 11323:2010, IDT)

## 3 Terms and definitions

For the purpose of this document, the terms and definitions given in ISO 11323 apply.

## 4 Principle

The test sample was reduced at a constant temperature of 900°C in a fixed bed using a reducing gas composed of CO and N2 for 180 min.

The final reduction degree (R180) was calculated from the oxygen loss after 180 min.



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