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

GB/T 24236-2009

**Iron ores for shaft direct-reduction feedstocks -- Determination
of the reducibility index, final degree of reduction and degree of
metallization**

直接还原炉用铁矿石 还原指数、最终还原度和金属化率的测定

(English Translation)

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Foreword

This standard is equivalent to international standards ISO 11258:2007 "direct reduction furnace reduction of iron ore index, final degree of reduction and metal Determination of rates "(in English).

For ease of use, this standard has been modified following editorial and non-technical difference of.

--- "This International Standard" by "this standard";

"," --- With a decimal point instead of a comma as the decimal point, "";

--- Delete foreword international standards;

--- References modify the corresponding national standards;

--- Rearrange the picture number and location;

--- Chapter 10 trials reporting changes to Chapter 11, also made a non-technical content changes.

Appendix A of this standard is a normative appendix, Appendix B and Appendix C are informative appendices.

The standard proposed by China Iron and Steel Association.

This standard by the National Standardization Technical Committee of the reduced iron ore and direct.

1 Scope

This standard specifies the gas in the direct reduction conditions, by measuring the reduction index, final degree of reduction and the metallization rate to evaluate the oxygen from the iron ore Test methods for stone removal degree of difficulty.

This standard is suitable for lump ore and pellets.

2 Normative references

The following documents contain provisions which, through reference in this standard and become the standard terms. For dated references, subsequent Amendments (not including errata content) or revisions do not apply to this standard, however, encourage the parties to the agreement are based on research Whether the latest versions of these documents. For undated reference documents, the latest versions apply to this standard.

GB/T 6730.5 Determination of the amount of total iron ore titanium trichloride reduction method (GB/T 6730.5-2007, ISO 9507:1990, MOD) GB/T 10322.1 iron ore sampling and sample preparation method (GB/T 10322.1-2000, idtISO 3082.1998) GB/T 20565 term iron ore and direct reduced iron (GB/T 20565-2006, ISO 11323:2002, IDT) Determination of the amount of total iron ore ISO 2597-1 Part 1. stannous chloride reduction titration ISO 5416 direct reduced iron - Determination of metallic iron content of bromine - methanol titration Determination of acid-soluble iron content of iron ore ISO 9035 titration Carbon and/or determination of ISO 9686 DRI sulfur content - High frequency combustion infrared absorption method

3 Terms and Definitions

The standards adopted GB/T 20565 in the terms and definitions.

Principle 4

The test sample after sample fixed bed at 800 °C access by hydrogen, carbon monoxide, carbon dioxide and nitrogen gas reduction Test samples were heated reduction. 90min reduction in time, continuously or at intervals of time weighing the test sample. Oxygen ratio of iron 0.9 when calculating the degree of reduction, while the loss of oxygen by mass 90min after (R90) to calculate the final degree of reduction. By reduction of the sample after Analysis or R90 formula to calculate the rate of metal.

5.1 Sampling and sample preparation

Sampling and sample preparation according to GB/T 10322.1 performed.

Size pellets composed of. 10.0mm ~ 12.5mm accounted for 50%, 12.5mm ~ 16.0mm 50%.

Lump ore particle size composition. 10.0mm ~ 16.0mm accounted for 50%, 16.0mm ~ 20.0mm 50%.

Dried sample size composed of the above-mentioned at least 2.5kg.

Samples at 105 °C ± 5 °C oven drying to constant weight, and then cooled to room temperature.

Note: If two consecutive dry sample varies no more than 0.05% by mass of the original sample is considered state of the sample constant weight is reached.

GB/T 24236-2009/ISO 11258:2007