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

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**Iron ores - Recommended procedures for iron ore dissolution
using either acid digestion or alkali fusion**

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Standardization Administration**

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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 modified to adopt ISO /T R11422:1996 "Acid Dissolution or Alkali Fusion Method for Iron Ore Samples", and the document type is changed from ISO

The technical report is adjusted to my country's national standardization guiding technical document:

Compared with ISO /T R11422:1996, this document has more adjustments in structure: Struct number changes between two files compared to one

See Appendix A for a list:

The technical differences between this document and ISO /T R11422:1996 and their reasons are as follows:

--- Replaced ISO 3696 with the normative reference GB/T 6682 (see 4:1:1:1:1, 4:1:2:1:1, 4:1:3:1:1, 4:2:1:1:1,

4:2:2:1:1, 4:3:1:1:1, 4:3:2:1:1), to adapt to the technical conditions of our country;

--- Added requirements for balances (see 4:1:1:2:4, 4:1:2:2:4, 4:1:3:2:4, 4:2:1:2:5, 4:2:2:2:2, 4:3:1:2:3, 4:3:2:2 :3), with

Meet the requirements of analytical precision;

--- Added requirements for corundum crucibles (see 4:2:2:2:1, 4:3:1:2:1, 4:3:2:2:1) to adapt to the technical conditions of laboratories in our country:

The following editorial changes have been made to this document:

--- Added Chapter 1, Chapter 2, Chapter 3 and Appendix A;

--- Deleted Chapter 1, Chapter 2, Chapter 3, Appendix A, Appendix B and Appendix C of ISO /T R11422:1996:

Please note that some contents of this document may refer to patents: The issuing agency of this document assumes no responsibility for identifying patents:

1 Scope

This document describes acid dissolution or alkali fusion methods for iron ore samples:

This document is applicable to acid dissolution and alkali fusion of iron ore samples:

2 Normative references

The contents of the following documents constitute the essential provisions of this document through normative references in the text: Among them, dated references

For documents, only the version corresponding to the date is applicable to this document; for undated reference documents, the latest version (including all amendments) is applicable to

this document:

GB/T 6682 Analytical laboratory water specifications and test methods

GB/T 20565 Terminology of iron ore and direct reduced iron

3 Terms and Definitions

The terms and definitions defined in GB/T 20565 apply to this document:

4 Recommended Operation Procedures

4:1 Acid dissolution

4:1:1 2g sample

4:1:1:1 Reagents

Unless otherwise specified, use only analytical grade reagents:

4:1:1:1:1 Water: GB/T 6682, level 3:

4:1:1:1:2 Anhydrous sodium carbonate (Na_2CO_3):

4:1:1:1:3 Anhydrous sodium tetraborate ($\text{Na}_2\text{B}_4\text{O}_7$):

4:1:1:1:4 Hydrochloric acid: $\rho=1.16\text{g/mL}\sim 1.19\text{g/mL}$:

4:1:1:1:5 Hydrochloric acid: $\rho=1.16\text{g/mL}\sim 1.19\text{g/mL}$, dilute to 1:1:

4:1:1:1:6 Hydrochloric acid: $\rho=1.16\text{g/mL}\sim 1.19\text{g/mL}$, dilute to 2100:

4:1:1:1:7 Nitric acid: $\rho=1.4\text{g/mL}$:

4:1:1:1:8 Sulfuric acid: $\rho=1.84\text{g/mL}$:

4:1:1:1:9 Sulfuric acid: $\rho=1.84\text{g/mL}$, dilute to 1:1:

4:1:1:1:10 Hydrofluoric acid: $\rho=1.13\text{g/mL}$, 40% (mass fraction) or $\rho=1.19\text{g/mL}$, 48% (mass fraction):