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

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**Iron ores - Wavelength dispersive X-ray fluorescence
spectrometers - Determination of precision**

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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 R18231:2016 "Determination of Accuracy of Wavelength Dispersive X-ray Fluorescence Spectrometer for Iron Ore":

Compared with ISO /T R18231:2016, this document has made the following structural adjustments:

--- Added two chapters of "Normative References" and "Terms and Definitions" (see Chapter 2 and Chapter 3):

The technical differences between this document and ISO /T R18231:2016 and their reasons are as follows:

---Incorporate the content about the instrument settings into the instrument conditions, and change from recommendation to requirement (see 6:4:1), in order to comply with GB/T 1:1-

2020 requirements and improved document applicability;

---Change the "note" about the conductivity test of the gas flow proportional counter to the clause (see 5:2:1) to meet the actual situation in our country and facilitate

easy to use;

---Change the "note" about the multi-channel spectrometer test to a clause (see 5:2:2:2) to meet the actual situation in our country and facilitate use;

---Change the "Note" on the change of air flow composition to a clause (see 5:3:1) to

conform to the actual situation in our country and facilitate use;

--- Change "Note 1" and "Note 2" about sample placement and loading reproducibility test to clauses (see 6:8) to meet the actual situation in our country

and easy to use;

---Change the "note" about the possible error caused by the position of the sample cup to a clause (see 6:9) to meet the actual situation in our country and facilitate

use:

The following editorial changes have been made to this document:

--- Corrected the error in formula (A:3):

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

Introduction

It is very important to test the spectrometer to ensure that it actually provides the required accuracy: The purpose of this document is to give information that can be used in

Determine the test method of the error, and give the relevant correction procedures: These tests are not intended to determine whether the instrument is performing optimally, but

Determine if the instrument can provide the preselected accuracy:

Iron ore wavelength dispersive X-ray fluorescence spectrometer

Determination of accuracy

1 Scope

This document describes a set of test methods that can be applied to wavelength dispersive X-ray fluorescence spectrometers (hereinafter referred to as "spectrometers") to determine

Spectrometers are capable of precise analysis:

This document applies to the measurement of errors associated with the operation of certain parts of the spectrometer: These test methods are not designed to check spectrometer

Each part, only to check those parts that may present a common source of error:

Note: When there is no difference statement, it means that a test is applicable to both sequential and multi-channel spectrometers:

2 Normative references

This document has no normative references:

3 Terms and Definitions

This document does not have terms and definitions that need to be defined:

4 Test frequency

Not every batch of samples analyzed requires the relevant tests set out in this document:
The frequency of testing will vary depending on the trial program involved: Table 1

The appropriate testing frequency for each test is listed: If specific issues are encountered, more frequent testing and remedial work may be required:

Table 1 Test frequency suitable for precision test

Frequency test items

per month

Resolution of a gas flow proportional counter

Resolution of Scintillation Counters and Closed Proportional Counters

Operating the Pulse Height Drift Corrector a

every half year

Conductivity of gas flow proportional counter

overall stability

Collimator reproducibility

Detector change reproducibility

Crystal change reproducibility

angle reproducibility

Per year

Turntable reproducibility

Comparison of Turntable Positions

Comparison of Sample Cups

Sample loading and unloading

a After replacing the detection gas, it is advisable to check the position of the pulse peak,

because the difference in methane content in the gas can change the position of the original peak:

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