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

GB/T 45479-2025

**Manganese ores and concentrates - Determination of
potassium oxide and sodium oxide content - Flame atomic
emission spectrometric method**

锰矿石与锰精矿 氧化钾、氧化钠含量的测定 火焰原子发射光谱法

(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 is modified to adopt ISO 4571:1981 "Manganese ores and concentrates - Determination of potassium and sodium contents - Flame atomic emission spectrometric method".

Compared with ISO 4571:1981, this document has many structural adjustments. Appendix A lists the differences between this document and ISO 4571:1981. Comparison table of structural number changes.

This document has many technical differences compared to ISO 4571:1981. The clauses involved in these differences have been marked in the outer margins.

Appendix B provides a list of corresponding technical differences and their reasons.

1 Scope

This document describes a method for the determination of potassium oxide and sodium oxide in manganese ores and concentrates by flame atomic emission spectrometry.

This document is applicable to the determination of potassium oxide and sodium oxide content in manganese ore and manganese concentrate. Determination range (mass fraction). potassium oxide 0.060%~4.80%, sodium oxide 0.025%~1.35%.

2 Normative references

The contents of the following documents constitute 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 (including all amendments) applies to This document.

GB/T 2011 Sampling and sample preparation methods for bulk manganese ore

GB/T 6379.2 Accuracy (trueness and precision) of measurement methods and results Part 2: Determination of repeatability of standard measurement methods Basic methods of sex and reproducibility

GB/T 6682 Specifications and test methods for water used in analytical laboratories

GB/T 8170 Rules for rounding off values and expression and determination of limit values

GB/T 12806 Laboratory glassware single-line volumetric flasks

GB/T 12808 Laboratory glassware single-line pipettes

GB/T 14949.8 Determination of wet water content of manganese ore - Gravimetric method

3 Terms and definitions

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

4 Principle

Decompose the sample with hydrochloric acid, nitric acid, hydrofluoric acid and perchloric acid, heat the perchloric acid to make it emit white smoke to remove the hydrofluoric acid, and use hydrochloric acid to dissolve the dioxigen Manganese.

Add cesium nitrate solution and dilute appropriately. Inhale the solution into an air-acetylene flame at wavelengths of 766.5nm and 589.0nm respectively.

The emission intensities of potassium and sodium were measured and the contents of each element were calculated according to the calibration curve.

Use single-color configuration to eliminate the interference of calcium, and use cesium nitrate solution to eliminate the mutual interference of alkali elements (sodium, lithium, etc.).