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

GB/T 14949.7-2024

Replacing GB/T 14949.7-1994

**Manganese ores - Determination of sodium and potassium
content - Flame atomic absorption spectrometric method**

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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 Part 7 of GB/T 14949: GB/T 14949 has published the following parts:

- Chemical analysis methods for manganese ores - Determination of chromium content;
- Determination of nickel content in manganese ore - Flame atomic absorption spectrometry;
- Methods for chemical analysis of manganese ores - Determination of barium oxide content;
- Chemical analysis methods for manganese ores - Determination of vanadium content;
- Determination of titanium content in manganese ore - Diantipyryl methane spectrophotometric method;
- Determination of copper, lead and zinc content in manganese ore - Flame atomic absorption spectrometry;
- Determination of sodium and potassium content of manganese ore-Flame atomic absorption spectrometry;
- Gravimetric method for determination of wet water content of manganese ore;
- Chemical analysis methods for manganese ores - Determination of sulfur content;
- Chemical analysis methods for manganese ores - Determination of cobalt content;
- Determination of carbon content in manganese ore by gravimetric method and infrared

absorption method;

--- Gravimetric method for determination of combined water content of manganese ores:

This document replaces GB/T 14949:7-1994 "Chemical analysis methods for manganese ores - Determination of sodium and potassium content" and is compatible with GB/T 14949:7-

Compared with:1994, in addition to structural adjustments and editorial changes, the main technical changes are as follows:

- a) The density of hydrofluoric acid has been changed (see 5:5, 3:5 of the:1994 edition);
- b) Added analytical balance (see 6:2);
- c) The requirements for atomic absorption spectrometers have been changed (see 6:3, 4:2 of the:1994 edition);
- d) Added the requirement for the number of measurements (see 8:2);
- e) The blank test requirements have been changed (see 8:3, 6:2 of the:1994 edition);
- f) The preparation of the test solution has been changed (see 8:4:3, 6:3:3 of the:1994 edition);
- g) The method of drawing the calibration curve has been changed (see 8:5, 6:4 of the:1994 edition);
- h) Added the determination and expression of analysis results (see 9:2);
- i) The precision has been changed (see Chapter 10, Chapter 8 of the:1994 edition);
- j) Added the content of the test report (see Chapter 11);
- k) Added the test result acceptance flow chart (see Appendix C):

This document is modified to adopt ISO 7969:1985 "Manganese ores and concentrates - Determination of sodium and potassium contents - Flame atomic absorption spectrometric method":

Compared with ISO 7969:1985, this document has many structural adjustments:

See Appendix A:

This document has more technical differences than ISO 7969:1985:

These technical differences and their causes are listed in Appendix B:

Introduction

Since there are many detection elements involved in the manganese ore detection process, the applicable scope and application methods of the elements are different:

To ensure the convenience and accuracy of manganese ore testing standards, we have established a supporting system for manganese ore testing based on the analysis methods of different elements in manganese ore:

National standard system: GB/T 14949 Manganese ore series analysis method is the basic standard for manganese ore detection in my country, and is intended to consist of the following parts:

--- Part 1: Chemical analysis method for manganese ores - Determination of chromium content: The purpose is to measure the chromium content in manganese ores using diphenylcarbon

Acyl dihydrazide photometry and silver persulfate titration:

--- Part 2: Determination of nickel content in manganese ore - Flame atomic absorption spectrometry: The purpose is to measure the nickel content in manganese ore:

Flame atomic absorption spectrometry was used:

--- Part 3: Chemical analysis methods for manganese ores - Determination of barium oxide content: The purpose is to measure the barium oxide content in manganese ores:

Use barium sulfate weight method:

--- Part 4: Chemical analysis method for manganese ores - Determination of vanadium content: The purpose is to measure the vanadium content in manganese ores using phosphorus tungsten vanadium

Acid photometry:

--- Part 5: Determination of titanium content in manganese ore - Diantipyrine methane spectrophotometric method:

Titanium content was determined by diantipyrinyl methane spectrophotometry:

--- Part 6: Determination of copper, lead and zinc content in manganese ore - Flame atomic absorption spectrometry:

Copper, lead and zinc contents were determined by flame atomic absorption spectrometry:

--- Part 7: Determination of sodium and potassium content of manganese ore by flame atomic absorption spectrometry: The purpose is to measure the sodium content of manganese ore:

and potassium content by flame atomic absorption spectrometry:

--- Part 8: Determination of wet water content of manganese ore by gravimetric method: The purpose is to measure the sodium wet water content in manganese ore by gravimetric method:

Measurement method:

--- Part 9: Chemical analysis methods for manganese ores - Determination of sulfur content: The purpose is to measure the sulfur content in manganese ores using barium sulfate

Gravimetric method and combustion iodine titration:

--- Part 10: Chemical analysis method for manganese ores - Determination of cobalt content: The purpose is to measure the cobalt content in manganese ores using nitrite

Base R salt photometry:

--- Part 11: Determination of carbon content in manganese ore - Gravimetric method and infrared absorption method:

The gravimetric method and infrared absorption method were used:

--- Part 12: Determination of the combined water content of manganese ores by gravimetric method:

Use weight method:

Determination of sodium and potassium content in manganese ore

Flame Atomic Absorption Spectrometry

Warning---People who use this document should have practical experience in formal laboratory work: This document does not address all possible safety issues:

The user is responsible for taking appropriate safety and health measures and ensuring compliance with the conditions stipulated in relevant national laws and regulations:

1 Scope

This document specifies the method for the determination of sodium and potassium in manganese ores by flame atomic absorption spectrometry:

This document is applicable to the determination of sodium and potassium content in manganese ore: The determination range of sodium (mass fraction): 0.02%~0.90%; the determination range of potassium

Fixed range (mass fraction): 0.05%~3.00%:

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