

CCS D 32



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

GB/T 14949.6-2021

**Manganese ores - Determination of copper, lead and zinc
content - Flame atomic absorption spectrometric method**

Issued on: October 11, 2021

Implemented on: May 1, 2022

**Issued by: State Administration for Market Regulation, China National
Standardization Administration**

Table of Contents

Foreword

Introduction

1 Scope

2 Normative references

3 Terms and definitions

4 Principle

5 Reagents

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 of Standardization Documents"

Drafting.

This document is Part 6 of GB/T 14949. GB/T 14949 has released the following parts.

- Manganese ore chemical analysis method determination of chromium content;
- Determination of nickel content of manganese ore by flame atomic absorption spectrometry;
- Manganese ore chemical analysis method determination of barium oxide content;
- Manganese ore chemical analysis method determination of vanadium content;
- Determination of titanium content in manganese ore Diantiprylmethane spectrophotometric method;
- Determination of copper, lead and zinc content of manganese ore by flame atomic absorption spectrometry;
- Manganese ore chemical analysis method sodium and potassium determination;
- Gravimetric method for the determination of wet storage water of manganese ore;
- Manganese ore chemical analysis method determination of sulfur content;
- Manganese ore chemical analysis method determination of cobalt content;
- Determination of carbon content of manganese ore by gravimetric method and infrared absorption method;

---Gravimetric method for determination of combined water content of manganese ore.

This document replaces GB/T 14949.6-1994 "Methods for Chemical Analysis of Manganese Ore, Determination of Copper, Lead and Zinc Contents", and is compatible with GB/T 14949.6-

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

- a) Added "normative references" and "terms and definitions" (see Chapter 2 and Chapter 3);
- b) The flux was changed from a mixed flux (potassium carbonate and boric acid) to anhydrous sodium carbonate (see 5.1, 3.3 in the.1994 edition);
- c) Modified the preparation method of copper, lead and zinc standard solutions (see 5.17, 5.19, 5.21, 3.10, 3.11, 3.12 of the.1994 edition);
- d) The weight of the sample was changed from 2.0000g to 1.0000g (see 8.1, 6.1 of the.1994 edition);
- e) The measurement of wet storage has been deleted (see 6.1 of the.1994 edition);
- f) The requirement for the number of determinations has been added (see 8.2);
- g) A common test of precision between laboratories was carried out, and the "allowable difference" was replaced by the statistically obtained repeatability limit r and reproducibility limit R
(See Chapter 9, Chapter 8 of the.1994 edition);
- h) Added test report (see Chapter 11);
- i) The test result acceptance flow chart has been added (see Appendix C);
- j) Raw data of precision has been added (see Appendix D).

This document uses the redrafting method to modify and adopt ISO 5889.1983 "Determination of aluminum, copper, lead and zinc content of manganese ore and manganese concentrate

Flame Atomic Absorption Spectrometry.

Compared with ISO 5889.1983, this document has many adjustments in structure. Appendix A lists this document and ISO 5889.1983.

Compared with the chapter number change comparison table.

Compared with ISO 5889.1983, this document has technical differences.

The set vertical single line (|) is marked, and a list of the corresponding technical

differences and their reasons is given in Appendix B.

The following editorial changes have been made to this document.

---The name of the standard was revised to "Determination of Copper, Lead and Zinc Content of Manganese Ore by Flame Atomic Absorption Spectrometry".

Introduction

Because there are many elements involved in the detection process of manganese ore, the applicable scope and applicable methods of the elements are different. to ensure that Manganese ore testing standards are convenient and accurate. We have established a national support for manganese ore testing based on the analysis methods for different elements of manganese ore.

---Part 1.Chemical analysis methods for manganese ore. Determination of chromium content. The purpose is to measure the chromium content in manganese ore, using diphenyl carbon

Dihydrazide photometric method and silver persulfate titration method.

---Part 2.Determination of nickel content in manganese ores by flame atomic absorption spectrometry. The purpose is to measure the nickel content in manganese ore,

Using flame atomic absorption spectrometry.

---Part 3.Methods for chemical analysis of manganese ore. Determination of barium oxide content. The purpose is to measure the barium oxide content in manganese ore, and mine Use the barium sulfate gravimetric method.

---Part 4.Methods for chemical analysis of manganese ore. Determination of vanadium content. The purpose is to measure the vanadium content in manganese ore, using phosphorus tungsten vanadium

Acid photometry.

---Part 5.Determination of titanium content in manganese ores Diantiprylmethane spectrophotometric method. The purpose is to measure the manganese ore Titanium content, using diantiprylmethane spectrophotometry.

---Part 6.Determination of copper, lead and zinc content of manganese ores by flame atomic absorption spectrometry. The purpose is to measure the manganese ore

The content of copper, lead and zinc is determined by flame atomic absorption spectrometry.

---Part 7.Methods for chemical analysis of manganese ore. Determination of sodium and

potassium. The purpose is to measure the sodium and potassium content in manganese ore, mining

Use flame atomic absorption spectrometry.

---Part 8.Gravimetric method for the determination of wet storage capacity of manganese ore. The purpose is to measure the amount of sodium wet storage water in manganese ore.

---Part 9.Determination of sulfur content in chemical analysis methods of manganese ore. The purpose is to measure the sulfur content in manganese ore, using barium sulfate Gravimetric method and combustion iodine titration method.

---Part 10.Determination of cobalt content in chemical analysis methods of manganese ore. The purpose is to measure the cobalt content in manganese ore, using nitrous acid

Base R salt photometric method.

---Part 11.Determination of carbon content of manganese ore by gravimetric method and infrared absorption method. The purpose is to measure the carbon content in manganese ore

The amount, using the gravimetric method and infrared absorption method.

---Part 12.Gravimetric method for determination of combined water content of manganese ore. The purpose is to measure the combined water content in manganese ore, and mine

Use the weight method.

Determination of copper, lead and zinc content in manganese ore

Flame atomic absorption spectrometry

Warning---Personnel using this document should have formal laboratory work experience. This document does not indicate all possible safety issues

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

1 Scope

This document specifies the flame atomic absorption method to determine the content of copper, lead and zinc in manganese ore.

This document is applicable to the determination of copper, lead and zinc content in manganese ore. Determination range of copper (mass fraction). 0.005%~1.0%; lead

The measurement range (mass fraction). 0.005%~1.0%; the measurement range of zinc (mass fraction). 0.005%~0.25%.