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

GB/T 5121.5-2008

Replacing GB/T 5121.5-1996; GB/T 13293.8-1991

**Methods for chemical analysis of copper and copper alloys --
Part 5: Determination of nickel content**

铜及铜合金化学分析方法 第5部分：镍含量的测定

(English Translation)

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Foreword

GB/T 5121 "Copper and copper alloy chemical analysis method" a total of 27 sections.

- Part 1. Determination of copper content;
- Part 2. Determination of phosphorus content;
- Part 3. Determination of lead content;
- Part 4. Carbon, Determination of sulfur content;
- Part 5. Determination of nickel content;
- Part 6. Determination of bismuth content;
- Part 7. Determination of arsenic content;
- Part 8. Determination of oxygen content;
- Part 9. Determination of iron content;
- Part 10. Determination of tin content;
- Part 11. Determination of zinc content;
- Part 12. Determination of antimony content;
- Part 13. Determination of aluminum content;
- Part 14. Determination of manganese content;
- Part 15. Determination of cobalt content;
- Part 16. Determination of chromium content;
- Part 17. Determination of beryllium content;
- Part 18. Determination of magnesium content;
- Part 19. Determination of silver content;

- Part 20. Determination of zirconium content;
- Part 21. Determination of titanium content;
- Part 22. Determination of cadmium content;
- Part 23. Determination of silicon content;
- Part 24. selenium, tellurium content was measured;
- Part 25. Determination of boron content;
- Part 26. Determination of mercury content;
- Part 27. Inductively coupled plasma atomic emission spectrometry.

This is Part 5.

This section includes a method, second method, Method three, four methods, V. Nickel content at 0.0001% ~ 45.00%, secondary when cutting a recommended method, second method, Method three.

This section Method Four identical with ISO 1810. 1976 "nickel-copper alloys --- (low level) measurement --- dimethylglyoxime spectrophotometric Law ", this section Method five identical with ISO 4743. 1984" Determination of nickel copper alloys --- --- Na₂EDTA of potentiometric titration "Yuguo Compared to international standards, it made the following editorial changes.

- With a decimal point instead of a comma as the decimal point in the international standard ";. ";";
- Use the "method" instead of "this International Standard";
- Revised international standard-Africa legal units of measurement;
- The formula, reg number, table number to re-annotate;
- Remove the cover of the international standards, directory, foreword and introduction.

This section Method three modifications adopted ISO 4742. 1984 "nickel-copper alloys --- --- Determination of the weight of law," the main technical content on the ISO 4742. 1984 the same structure does not correspond exactly to write. Specific technical difference in Appendix A, Appendix B.

This Part replaces GB/T 5121.5-1996 "Copper and copper alloys - Determination of nickel content" and GB/T 13293.8-1991 "Methods for chemical analysis of high purity copper cathode Zeeman effect electrothermal atomic absorption spectrometric method for the determination of nickel content." this portion of the GB/T 5121.5-1996, GB/T 13293.8-1991 compared to the main changes are as follows.

- One method of GB/T 13293.8-1991 amendments by the measurement range from

0.0001% to 0.0001% 0.002% ~ ~ 0.0010%, supplemented with quality assurance and control provisions, increasing the precision of the terms;

--- Second method is GB/T 5121.5-1996 "on the first chapter 1 flame atomic absorption spectrometry" amendment complements Quality assurance and control provisions, increasing the precision of the terms;

--- Third, the method GB/T 5121.5-1996 in "The second method 2 Na₂EDTA titration" amendment supplements the qualitative Assurance and control provisions, increasing the precision of the terms;

--- Adds four. identical with ISO 1810. 1976 "nickel-copper alloys --- (low level) measurement --- dimethylglyoxime spectrophotometric of Law ";

--- Adds five. identical with ISO 4743. 1984 "nickel copper alloys --- --- Determination of titration." this section in Appendix A, Appendix B is an informative annex.

This part is proposed by the China Nonferrous Metals Industry Association.

The non-ferrous metal part by the National Standardization Technical Committee.

This section Chinalco Luoyang Copper Co., Ltd., Beijing General Research Institute of Mining and Metallurgy, China Nonferrous Metals Industry is responsible Institute of Standards Metrology and Quality Drafted.

A method in this section was drafted by Beijing General Research Institute of Mining and Metallurgy.

A method in this section by the Jiangxi Copper Group Co., Ltd. Peng Hui Yantai Copper Co., Ltd. participated in the drafting.

1.1 Scope

This method specifies the method for determination of copper and copper alloy nickel content.

This method is applicable to the determination of copper and copper alloy nickel content. Measurement range. 0.0001% to 0.0010%.

1.2 Principle of the method

Sample was dissolved in nitric acid, a volume of the test solution injected into the electrothermal atomizer with Zeeman effect atomic absorption spectrometer at 232.0nm Measuring the absorbance at a wavelength of nickel, calculated according to the quality of working curves of nickel score.

1.3 Reagents

Unless otherwise indicated in the analysis using only recognized as analytical grade reagents and distilled or deionized water or equivalent purity. experiment the utensils were soaked 12h, washed thoroughly with water and nitric acid (1.3.2).