

ICS 77.120.30

CCS H 13



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

GB/T 5121.13-2008

Replacing GB/T 5121.13-1996

**Methods for chemical analysis of copper and copper alloys --
Part 13: Determination of aluminium content**

铜及铜合金化学分析方法 第13部分：铝含量的测定

(English Translation)

Issued on: June 17, 2008

Implemented on: December 1, 2008

Issued by: Standardization Administration of China

Table of Contents

Foreword

1 Method, a Chromium Azure S Spectrophotometry

1.1 Scope

1.2 Principle of the method

1.3 Reagents

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 13.

This section includes a method, second method, Method three.

This section Method Three identical with ISO 3110. 1975 "Determination of aluminum content copper alloys --- capacity of law", as compared with the international standard 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 Part replaces GB/T 5121.13-1996 "Copper and copper alloys - Determination of aluminum content." this section compared with the GB/T 5121.13-1996, the main changes are as follows.

- One method of GB/T 5121.13-1996 "on the first day Part 1 chromium phthalocyanine S Determination of aluminum amount" of repair Order to supplement the provisions of quality assurance and control, increasing the precision of the terms;
- Second method is the separation of benzoic acid 2 GB/T 5121.13-1996 in "The second method - disodium edetate complex drops Titration of aluminum content "of revisions, supplements the provisions of quality assurance and control, increasing the precision of the terms;
- Adds three. the equivalent international standard ISO 3110. 1975 "Determination of the amount of copper aluminum alloy --- volumetric method";

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 part of this method, Method II Central aluminum Shenyang Nonferrous Metals Processing Co. drafted.

A part of this method, Method II by Chinalco Luoyang Copper Co., copper northwest Gansu limited liability company participated in the drafting.

1.1 Scope

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

This method is applicable to the determination of copper and copper alloy aluminum content. Measurement range. 0.0010% to 0.50%.

1.2 Principle of the method

The sample is dissolved in nitric acid, an acid precipitation tin biased filter, electrically released copper. Partial recovery treatment with hydrobromic acid adsorption of trace aluminum tin. Phosphorous Mass fraction is large, and extracted with ethyl aluminum - benzoyl phenylhydroxylamine complex with phosphorus separation, and then the same aluminum back-extracted water main were combined and. Interference to lift a lot of lead in the copper electrical power before releasing lead. Hydrofluoric acid to remove the volatile silicon is high. Perchloric acid solution of hydrochloric acid in addition to chromium to smoke Eliminate its effects. Interference with beryllium disodium edetate as masking agents beryllium hydroxide precipitate was separated and removed with acid masking bitter almond titanium. Zinc, Effect of addition of nickel equivalent amount of zinc and nickel in the blank test to offset with ascorbic acid and thiourea eliminate the influence of iron and residual copper. Copper Alloy Other elements present in the non-interference. About pH6, chromium azure S color, measured at 545nm wavelength spectrophotometer its absorption Luminosity.

1.3 Reagents

Unless otherwise indicated in the analysis using only recognized as analytical grade reagents and distilled or deionized water or equivalent purity.