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**NONFERROUS METALS INDUSTRY STANDARD OF THE
PEOPLE'S REPUBLIC OF CHINA**

YS/T 521.3-2009

Replacing YS/T 521.2-2006

**Methods for chemical analysis of blister copper. Part 3: Determination
of arsenic content. Hydride generation-atomic fluorescence
spectrometric method. Potassium bromate titration**

粗铜化学分析方法 第3部分：砷量的测定

(English Translation)

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Foreword

YS/T 521-2009 "blister chemical analysis method" is divided into six sections.

--- Part 1. Determination of copper content Iodometry

--- Part 2. Determination of the amount of gold and silver fire assay

--- Part 3. Determination of arsenic content

2 Method, potassium bromate titration

--- Part 4. lead, bismuth, antimony content - Flame Atomic Absorption Spectrometry

--- Part 5. Determination of zinc and nickel content by flame atomic absorption spectrometry

--- Part 6. Inductively coupled plasma atomic arsenic, lead, bismuth, antimony, zinc and nickel emission spectrometry this section YS/T 521 Part 3.

"Methods for chemical analysis of blister copper - Determination of arsenic content" in this section instead of YS/T 521.2-2006 (formerly GB/T 5120.2-1995).

Compared with YS/T 521.2-2006, this part of the following changes.

--- Text format has been modified;

--- Complements the precision and quality assurance and control provisions.

This section proposed and managed by China Nonferrous Metals Standardization Technical Committee.

This section is responsible for drafting unit. Daye Nonferrous Metals Company.

Participated in the drafting of this section. Yunnan Copper Company Limited.

3 Reagents

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

3.1

hydrochloride (ρ 1.19g/mL).

Nitrate 3.2 (ρ 1.42g/mL).

3.3

nitric acid (1 + 1).

3.4

thiourea - ascorbic acid mixture. Weigh thiourea, ascorbic acid each 5.0g, dissolved in water in order to dilute to 100mL, and mix.

3.5

solution of potassium borohydride (10g/L). Weigh 5.0g of potassium borohydride, dissolved in sodium hydroxide solution (2g/L) and treated with the sodium hydroxide solution it was diluted to 500mL, and mix. The time is now equipped with.

3.6

arsenic standard stock solution. Weigh 0.1320g benchmark arsenic trioxide (previously at 100 °C ~ 105 °C baking 1h, cooled to desiccator Room temperature) in 100mL beaker, add 5mL sodium hydroxide solution (200g/L), low-temperature heating to dissolve, adding 5mL of water, 2 drops of phenolphthalein Ethanol solution (1g/L), with sulfuric acid (1 + 1) and to the red and then just disappear excess 2mL, moved into 1000mL volumetric flask, diluted with water to the mark, and mix. This solution 1mL containing 100 μ g arsenic.

3.7

arsenic standard solution. Pipette 20.00mL arsenic standard stock solution in 500mL volumetric flask, dilute with water to volume, and mix. This solution 1mL solution containing 4 μ g arsenic.

3.8

Argon (mass fraction $\geq$ 99.99%).

4 Instrument

Atomic fluorescence spectrometer, with shielded quartz furnace atomizer, glassy arsenic hydride generator and special hollow cathode lamp or high-intensity air Heart cathode lamps.

Under optimum working conditions for those who can reach the following indicators can be used.

Detection limit. greater than 9×10^{-10} g/mL.

Precision. with 0.1µg/mL solution of arsenic standard fluorescence intensity was measured 10 times, and the standard deviation should not exceed 5.0% of the mean fluorescence intensity.

5.1 Sample

Sieved mass ratio collectively 0.25g sample, accurate to 0.0001g.