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

YS/T 519.1-2009

Replacing YS/T 519.1-2006

**Methods for chemical analysis of arsenic. Part 1: Determination
of arsenic content. Potassium bromate titrimetric method**

砷化学分析方法 第1部分：砷量的测定溴酸钾滴定法

(English Translation)

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Foreword

YS/T 519-2009 "chemical analysis of arsenic" is divided into four parts.

- Part 1. Determination of arsenic content potassium bromate titration;
- Part 2. Determination of antimony content - Malachite green spectrophotometry;
- Part 3. Determination of sulfur content of barium sulfate gravimetric method;
- Part 4. bismuth, antimony, sulfur content - Inductively coupled plasma atomic emission spectrometry.

This section YS/T 519 - Part 1.

The partial replacement of YS/T 519.1-2006 (formerly GB/T 4373.1-1984) "Determination of Arsenic in chemical analysis of potassium bromate volumetric method Arsenic amount" compared with YS/T 519.1-2006, this section has the following changes.

- Increasing the blank test;
- Sample size proposed new requirements, the specimen shall be subject to an 80-mesh sieve, diameter of not more than 2mm, to sample all through 0.84mm sieve, and then 0.42mm sieve;
- Symmetry like proportions were modified by the press on the screen and under the screen ratio of 3 Weigh, modify according to the actual proportion sieve weighed;
- Text format has been modified;
- Complements the precision, quality assurance and control provisions.

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

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1 Scope

YS/T 519 This part specifies the determination of arsenic in arsenic content.

This section applies to the determination of arsenic in arsenic content. Measurement range. 98.0% to 99.8%.

2 Method summary

Sample was dissolved by heating with sulfuric acid, add boiling water, methyl orange as indicator, with hot potassium bromate standard solution titration to the disappearance of the final red Points, calculated by potassium bromate standard titration solution volume consumed arsenic, antimony combined amount, after deduction of the amount of antimony to arsenic.

3 Reagents

Analysis process unless otherwise specified, all reagents and analytical use distilled water or water of equivalent purity.

3.1

trioxide ($[\text{As}_2\text{O}_3] \geq 99.99\%$). dried before use should be placed in concentrated sulfuric acid desiccator 24h or more.

3.2

sulfate ($\rho 1.83\text{g/mL}$).

Nitrate 3.3 ($\rho 1.42\text{g/mL}$).

3.4

nitric acid (1 + 4).

3.5

urea solution (100g/L). 10.0g of urea was dissolved in 50mL water, dilute with water to 100mL, and mix.

3.6

potassium bromate standard titration solution ($\rho [\text{KBrO}_3] = 3.04\text{g/L}$).

3.6.1

preparation. Weigh 3.04g and 3.0g potassium bromate bromide placed 300mL beaker with a small amount of water dissolved moved 1000mL Volumetric flask, dilute to the mark, mix,

place two days after calibration.

in. Add 20mL sulfuric acid (3.2), cover the surface of the pan, on a hot plate heated to dissolve, heating was continued 10min, remove cooling, with a little water Purge watch glass and Beibi, add 100mL of water on a hot plate heated to boiling. Move to a magnetic stirrer, remove the surface of the pan, stirring constantly Added 5mL nitric acid (3.4), 5mL urea solution (3.5), potassium bromate standard titration solution dropped from 100mL fat belly burette until drops to about 95mL, add 2 drops to 3 drops of methyl orange indicator, titrated slowly until close to the end, then slowly drop to the end of the red disappears, Volume 1 is Vp. Meanwhile blank calibration, volume V0.

According to equation (1) calculate the standard volumetric solution of potassium bromate arsenic Titration factor.

0.7574 (1)

Where.

K --- titration factor per unit volume of potassium bromate standard titration solution equivalent to arsenic in grams per milliliter (g/mL);

Volume 1 Vp consumed --- calibration standard potassium bromate titration solution in milliliters (mL);

Volume consumed V0 --- blank calibration standard potassium bromate titration solution in milliliters (mL);

.7574 --- Conversion factor calculated as trioxide arsenic.

The results of the calibration poor value greater than 0.000006g/mL, to be re-weighed three trioxide calibration.

3.7 Indicator

A saturated aqueous solution of methyl orange, filtered use.