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**SN**

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

**SN/T 2297.7-2015**

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**Analysis method for gypsum and gysum products. Part 7:  
Determination of arsenic and mercury content. Atomic  
fluorescence spectrum**

石膏及石膏制品分析方法 第7部分：砷、汞含量的测定 原子荧光光谱法  
(English Translation)

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### Foreword

SN/T 2297 "gypsum and gypsum products analysis" is divided into eight sections.

- Part 1. Determination of strontium content;
- Part 2. Determination of organic matter;
- Part 3. Determination of sulfide content;
- Part 4. Determination of volatile sulfur compounds;
- Part 5. Determination of sulfur content by gas chromatography - mass spectrometry;
- Part 6. Determination of elemental sulfur;
- Part 7. arsenic, mercury content by atomic fluorescence spectrometry;
- Part 8. Water-soluble fluoride, chloride content by ion chromatography.

This section SN/T 2297 Part 7.

This section drafted in accordance with GB/T 1.1-2009 given rules.

This section proposed and managed by the National Certification and Accreditation Administration Committee.

### 1 Scope

This section SN/T 2297 provisions of the gypsum and gypsum products, arsenic, mercury content by atomic fluorescence spectrometry (AFS) measurement method.

This section applies to the determination of gypsum and gypsum products, arsenic, mercury content.

## 2 Normative references

The following documents for the application of this document is essential. For dated references, only the dated version suitable for use herein Member. For undated references, the latest edition (including any modifications thereto) are applicable to this document.

Preparation of standard solution of GB/T 602 Determination of impurities in chemical reagents GB/T 2007.1 bulk minerals sampling and sample preparation General manual sampling methods Laboratory use specifications and test methods GB/T 6682 Analysis

## 3 Method summary

After sample digestion with thiourea - ascorbic acid will be converted to pentavalent arsenic trivalent arsenic, at a certain acidity, test solution and potassium borohydride by hydrogenation Was produced hydride generator, with the carrier gas into the quartz tube atomizer, measured at arsenic (193.7nm), mercury (253.7nm) characteristic fluorescence wavelength its fluorescence, the fluorescence intensity of the measured fluorescence intensity of test solution and standard solution phase comparison, the content of the test solution of arsenic and mercury.

## 4 Reagents and materials

In addition to the provisions use the gifted class pure reagents, test water should be consistent with a water GB/T 6682 regulations.

### 4.1

nitric acid ( $\rho = 1.42\text{g/mL}$ ).

### 4.2

hydrochloric acid ( $\rho = 1.19\text{g/mL}$ ).

### 4.3

Hydrogen peroxide ( $\rho = 1.44\text{g/mL}$ ).

### 4.4

mercury standard solution ( $1000\mu\text{g/mL}$ ). according to GB/T 602 formulated or direct purchase of certified reference materials.

### 4.5

arsenic standard solution ( $100\mu\text{g/mL}$ ). according to GB/T 602 formulated or direct purchase of certified reference materials.

**4.6**

hydrochloric acid solution (119).

**4.7**

thiourea (5%) and ascorbic acid (5%) mixed solution. Weigh 5.0g thiourea and 5.0g of ascorbic acid, dissolved in an appropriate amount of water, set the volume to 100mL. Now with the current.

**4.8**

Potassium hydroxide (5g/L). Weigh 5.0 potassium hydroxide dissolved in an appropriate amount of water and dilute to 1000mL.

**4.9**

solution of potassium borohydride (10g/L). Weigh 10g potassium borohydride, dissolved in sodium hydroxide solution (4.8) and dilute to 1000mL. Present Service is used.

**4.10**

arsenic and mercury standard solution. draw the right amount of mercury standard solution (4.4) and arsenic standard solution (4.5), respectively, with hydrochloric acid solution (4.6) dilute Diluted to 1µg/mL (arsenic) and 0.1µg/mL (Hg), and then were to learn of the arsenic, mercury standard solution 0mL, 0.2mL, 0.4mL, 0.8mL,