

**SN**

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

**SN/T 3349-2012**

---

**Determination of mercury content in gold ores. Atomic  
fluorescence spectrometry  
(English Translation)**

**Issued on: December 12, 2012**

**Implemented on: July 1, 2013**

---

**Issued by: General Administration of Customs**

## Table of Contents

|                        |
|------------------------|
| Foreword               |
| 1 Scope                |
| 2 Normative references |
| 3 Method summary       |
| 4 Reagents             |

### Foreword

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

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

This standard was drafted. People's Republic of China Shandong CIQ.

### 1 Scope

This standard specifies the atomic fluorescence spectrometric method mercury in gold ore.

This standard applies to the determination of mercury in gold ore. Measurement range. mercury content greater than or equal 0.01mg/kg.

### 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. Who does not note date reference documents, the latest edition (including any amendments) applies to this document.

Laboratory use specifications and test methods GB/T 6682 Analysis GB/T 14505 method for chemical analysis of rocks and ores General rules and regulations

### 3 Method summary

After the sample by digestion in acidic medium, mercury test solution is potassium borohydride reduction of mercury atoms by a carrier gas (argon) into the atomizer, Under a special mercury hollow cathode lamp illumination, the ground state mercury atoms are excited to high energy state, returning to the ground state, emitting a characteristic wavelength of fluorescence, the fluorescence intensity is proportional to the mercury content, compared with standard series quantitation.

## 4 Reagents

Unless otherwise indicated, the reagents used were of analytical grade, water as a secondary water GB/T 6682 regulations.

### 4.1

nitric acid ( $\rho = 1.40\text{g/mL}$ ). pure class distinctions.

### 4.2

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

### 4.3

potassium hydroxide.

### 4.4

potassium borohydride.

### 4.5

aqua regia solution (11 volume fraction). Measure 25mL of nitric acid (4.1) and 75mL of hydrochloric acid (4.2) after mixing added 100mL of water, stir Uniform, using now.

### 4.6

nitric acid solution (595, volume fraction). amount of 5mL nitric acid (4.1) with water to 100mL.

### 4.7

Potassium hydroxide solution (0.5% concentration). Weigh 5g of potassium hydroxide (4.3) dissolved in 1000mL of water.

### 4.8

solution of potassium borohydride (0.05 percent, concentration by mass). weigh 0.50g of potassium borohydride (4.4), a solution of potassium hydroxide was dissolved in 1000mL (4.7), and we are using now.

### 4.9

Protection of mercury standard solution. Weigh 0.05g excellent pure potassium dichromate, nitric acid solution (4.6) and diluted to 100mL.

### 4.10

Mercury standard stock solution.  $\rho(\text{Hg}) = 1.00\text{mg/mL}$  (commercially available).