ICS 73.060
CCS D40

NATIONAL STANDARD OF THE PEOPLE'S REPUBLIC OF CHINA

GB/T 14352.21-2021

Methods for chemical analysis of tungsten ores and molybdenum ores - Part 21: Determination of arsenic content - Hydride generation atomic fluorescence spectrometry

钨矿石、钼矿石化学分析方法 第21部分：砷量的测定 氢化物发生-原子荧光光谱法

Issued on: March 9, 2021 **Implemented on: October 1, 2021**

Issued by: State Administration for Market Regulation;
Standardization Administration of China

Table of Contents

Foreword

GB/T 14352 "Methods for Chemical Analysis of Tungsten Ore and Molybdenum Ore" has 22 parts, including 25 chemical analyses of 34 elements method.

1.Determination of tungsten content;

2.Determination of the amount of molybdenum;

3.Determination of copper content;

4.Determination of lead content;

5.Determination of zinc content;

6.Determination of cadmium content;

7.Determination of the amount of cobalt;

8.Determination of nickel content;

9.Determination of Sulfur Content;

10.Determination of arsenic content;

11.Determination of the amount of bismuth;

12.Determination of silver content;

13.Determination of tin content;

1 Scope

GB/T 14352.21-2021 is the Chinese national standard on methods for chemical analysis of tungsten ores and molybdenum ores - part 21: determination of arsenic content - hydride generation atomic fluorescence spectrometry, in the field of mining and minerals. The /T suffix marks it as a recommended standard: it is not compulsory by itself, but it becomes binding as soon as a contract, a tender or a customer specification calls it up - which in practice is how most foreign buyers meet it. It was issued on 9 March 2021 by the State Administration for Market Regulation; Standardization Administration of China, and has been in force since 1 October 2021. Classification: ICS 73.060, CCS D40. This page is published from the official record of the standard held by the Chinese standards administration: the identification, the dates, the classification and the issuing body are taken from there. The clause text, the tables and the numeric limits are in the document itself, which is delivered complete in English translation.

This part of GB/T 14352 specifies the determination of arsenic content in tungsten ores and molybdenum ores by hydride generation-atomic fluorescence spectrometry. This section applies to the determination of arsenic content in tungsten ores and molybdenum ores by hydride generation-atomic fluorescence spectrometry. The detection limit of arsenic in this method is 0.18μg/g. The determination range of arsenic in this method is 0.2μg/g~2000μg/g.

2 Normative references

The following documents are indispensable for the application of this document. For dated reference documents, only the dated version applies to this article Pieces. For undated reference documents, the latest version (including all amendments) is applicable to this document.

GB/T 6682 Analytical laboratory water specifications and test methods

GB/T 14505 General rules and general regulations of rock and ore chemical analysis methods

3 Principle

The sample was decomposed by hydrochloric acid and nitric acid to prepare a sample solution. The pentavalent arsenic in the solution is reduced to trivalent arsenic by the thiourea-ascorbic acid solution. three The valence arsenic ion reacts with potassium borohydride to generate arsine hydrogen, which is introduced into the atomizer by carrier gas (argon), and is illuminated by the high-intensity hollow cathode lamp of arsenic. The generated ground state arsenic atom is excited to a high energy state, and when it is deactivated back to the ground state, it emits fluorescence with a characteristic wavelength, and its fluorescence intensity is the same as that in the sample. The content of arsenic is directly proportional, and the amount of arsenic in the solution is quantitatively determined by the calibration curve method.

4 Reagents

Unless otherwise specified, analytically pure chemical reagents that meet national standards are used in the analysis, and the pure water used is in compliance with GB/T 6682 regulations. Set secondary water.

4.1 Hydrochloric acid [rho(HCl)=1.19g/mL].

4.2 Nitric acid [rho(HNO3)=1.42g/mL].

4.3 Hydrochloric acid solution (11).

4.4 Citric acid-potassium iodide solution. Weigh 20g of citric acid, 5g of potassium iodide and dissolve in water, dilute to 100mL with water, and shake well.

4.5 Thiourea-ascorbic acid solution (rho=100g/L). Weigh 10g thiourea and 10g ascorbic acid, dissolve in water and dilute to 100mL.

4.6 Potassium borohydride solution (rho=20g/L). Weigh 20g of potassium borohydride and dissolve it in 1000mL of water to which 2g of sodium hydroxide has been added.

4.7 Hydrochloric acid solution (1 9).

4.8 Arsenic standard solution.

a) Arsenic standard stock solution [rho(As)=100.0μg/mL] Weigh 0.1320g spectral pure arsenic trioxide, place it in a 100mL beaker, add 10mL sodium hydroxide solution (100g/L)