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CCS D21

SN

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

SN/T 3521-2013

**Simultaneous determination of arsenic and mercury content in
coal. Hydride generation-atomic fluorescence spectrometry
(English Translation)**

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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 Shanghai Entry-Exit Inspection and Quarantine Bureau, People's Republic of China Entry-Exit Inspection and Xinjiang Quarantine Bureau.

1 Scope

This standard specifies the imported coal arsenic and mercury content in microwave digestion - atomic fluorescence spectrometry method for the simultaneous determination.

This standard applies to imported coal drying air base arsenic, mercury content was measured to detect arsenic, mercury limit. arsenic 0.16 μ g/g, Mercury 0.01 μ g/g.

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 amendments) applies to this document.

GB 474 coal sample preparation GB 475 coal samples of goods taken by artificial methods
GB/T 19494.1 coal mechanization sampling - Part 1. Sampling GB part/T 19494.2 coal mechanization sampling 2. Preparation of coal sample

3 Method summary

After the sample microwave digestion in nitric acid media, first with thiourea - ascorbic acid pre-reduction of pentavalent arsenic to trivalent arsenic, boron and then use Potassium hydride reducing agent, the sample of arsenic and mercury are reduced to arsine gas and

mercury vapor, with argon as a carrier gas into the atomizer, at a Simultaneous determination of the dual channel atomic fluorescence spectrometer arsenic, mercury atomic fluorescence intensity, analyze the content of arsenic and mercury in coal.

4 Reagents and materials

Unless otherwise indicated, analytical grade and used only to confirm the above reagent, double distilled water or equivalent purity.

4.1

potassium borohydride.

4.2

sodium hydroxide.

Thiourea 4.3.

4.4

ascorbic acid.

4.5

potassium dichromate.

4.6

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

4.7

nitric acid (397).

4.8

nitric acid (19).

4.9

Hydrofluoric acid ($\rho = 1.14\text{g/mL}$).

Hydrogen peroxide 4.10. content of $\geq 30\%$.

4.11

saturated boric acid solution. Weigh 5.0g of boric acid in the beaker, 100mL of water, heated to dissolve, cooled at room temperature and set aside.

4.12

potassium borohydride solution (20g/L). Weigh 2.5g of sodium hydroxide (4.2), 10g potassium borohydride (4.1), dissolved in water and diluted to 500mL, using now.