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

YS/T 715.2-2009

**Methods for chemical analysis of selenium dioxide. Part 2:
Determination of arsenic, cadmium, iron, mercury, lead contents.
Inductively coupled plasma-atomic emission spectrometry**

二氧化硒化学分析方法 第2部分：砷、镉、铁、汞、铅量的测定 电感耦合等离子
体原子发射光谱法

(English Translation)

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Foreword

YS/T 715 "selenium dioxide chemical analysis method" is divided into five parts.

- Part 1. Determination of the amount of selenium dioxide, sodium thiosulfate titration;
- Part 2. arsenic, cadmium, iron, mercury, lead content - Inductively coupled plasma atomic emission spectrometry;
- Part 3. Determination of chlorine content of silver chloride turbidimetric method;
- Part 4. residue on ignition - Gravimetric method;
- Part 5. water-insoluble content - Gravimetric method.

This section YS/T Part 2 715.

This section in Appendix A, Appendix B is an informative annex.

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

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1 Scope

YS/T in this part 715 provides for arsenic, cadmium, iron, mercury, lead content determination of selenium dioxide.

This section applies to selenium dioxide (96.00% - 99.99%) measurement of arsenic, cadmium, iron, mercury, lead, and measuring range in Table 1.

Table 1 Measuring range

As	Cd	Fe	Hg	Pb	element	Content /%	0.0010	0.0030	0.0010	0.0050	0.0005	0.0030	0.0010
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0.0050 0.0005 0.0050

2 Method summary

Sample dilute nitric acid dissolved in dilute nitric acid medium, using inductively coupled plasma emission spectrometer to measure selenium dioxide, arsenic, cadmium, Iron, mercury, lead element content.

3 Reagents

Unless otherwise indicated in the analysis using only recognized as analytical grade reagents and distilled or deionized water or equivalent purity.

3.1

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

3.2

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

3.3

nitric acid (1 + 1).

3.4

nitric acid (1 + 9).

3.5

mixed acid. hydrochloric acid + nitric acid (3 + 1).

3.6

arsenic standard stock solution. ($100\mu\text{g/mL}$) Weigh 0.3300g trioxide (mass fraction of not less than 99.9%) in 100mL Beaker, was added 5mL sodium hydroxide solution (200g/L), stirring to dissolve, add 20mL water, 2 drops of phenolphthalein ethanol solution (1g/L) Nitric acid (3.3) and to the red just disappeared, and then excess 2mL, moved with nitric acid (3.4) 250mL volumetric flask and dilute to the mark, Mix well.

3.7

cadmium standard stock solution. ($100\mu\text{g/mL}$) were weighed 0.1000g metal cadmium (mass fraction of not less than 99.99%) in a group 100mL beaker were added 30mL of nitric acid (3.3), cover sheet pan, heated until completely dissolved, boiled to remove nitrogen oxides, respectively, shift Into a 1000mL volumetric flask, dilute with water to volume, and mix.

3.8

lead standard stock solution. (100µg/mL) were weighed 0.1000g metallic lead (mass fraction of not less than 99.99%) in a group 100mL beaker were added 30mL of nitric acid (3.3), cover sheet pan, heated until completely dissolved, boiled to remove nitrogen oxides, respectively, shift Into a 1000mL volumetric flask, dilute with water to volume, and mix.

3.9

iron standard stock solution. (100µg/mL) Weigh 0.1000g metallic iron (mass fraction of not less than 99.99%) in a 100mL Beaker, 10mL of nitric acid (3.3), cover sheet pan, on low heat until completely dissolved, remove the cooling transferred 1000mL volumetric flask, Dilute with water to volume, and mix.

3.10

Mercury standard stock solution. (100µg/mL) Weigh 0.1354g mercury dichloride (mass fraction of not less than 99%) in the 100mL beaker Added 10mL of nitric acid (3.3), was dissolved and transferred to 1000mL volumetric flask and dilute to volume, and mix.

3.11

Cd, Hg, Pb standard solution. Pipette 15.00mL are cadmium, lead, mercury standard storage solution was placed in 100mL volumetric flask.