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

SN/T 2413-2010

**Determination of total carbon and sulfur contents of silicon
metal for import and export. Infrared absorption spectrometry**

进出口金属硅中总碳和硫含量测定 高频燃烧红外吸收光谱法

(English Translation)

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Foreword

The Standard Appendix A and Appendix B is an informative annex.

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

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

Drafters of this standard. Chen Ping, Zhang Zhenkun, Static, horse Ice.

This standard is the first release of the entry-exit inspection and quarantine industry standards.

Import and export of silicon metal in the determination of total carbon and sulfur content
High frequency combustion infrared absorption spectroscopy

1 Scope

This standard specifies the method of infrared absorption spectrometry of total carbon and sulfur content of the import and export of silicon metal in the high-frequency combustion.

This standard applies to the determination of total import and export of silicon metal in the carbon and sulfur content. Measuring range. C. 0.010% ~ 0.50%; S. 0.002% ~ 0.02%.

2 Normative references

The following documents contain provisions which, through reference in this standard and become the standard terms. For dated references, subsequent Amendments (not including errata content) or revisions do not apply to this standard, however, encourage the parties to the agreement are based on research Whether the latest versions of these documents. For undated reference documents, the latest versions apply to this standard.

GB/T 2881 industrial silicon GB/T 4010 alloy chemical analysis and preparation of samples

3 Method summary

Sample in a high frequency induction furnace combustion heating large stream of oxygen, carbon conversion to carbon dioxide (or carbon monoxide), transformed into sulfur dioxide. Oxygen introduced by the infrared detector measures the room, the detection of carbon dioxide (or carbon monoxide) and sulfur dioxide absorption of specific wavelengths of infrared energy, Concentration can be absorbed carbon and sulfur and is proportional to the measured total carbon and sulfur content.

4 Reagents

Unless otherwise stated, use only approved analytical reagent and distilled water or equivalent purity.

4.1

Water boil 30min, cooled to room temperature, pass oxygen (4.5) enables blistering 15min, prepared using.

4.2

sodium carbonate (reference material). dried over anhydrous sodium carbonate. Before use in 285 °C drying 2h, placed in a desiccator to cool.

4.3

Potassium (excellent pure). Before use to bake at 105 °C ~ 110 °C to constant weight, placed in a desiccator to cool.

4.4

magnesium perchlorate. particle size 0.7mm ~ 1.2mm.

4.5

Oxygen (99.5%).

4.6

iron flux. carbon content less than 0.001% (mass fraction).

4.7

tungsten tin flux. pure tungsten tin powder 6-4 mixing. Carbon content less than 0.001% (mass fraction).

4.8

Standard stock solution of sodium carbonate (25g/L). Weigh 55.152g sodium carbonate (4.2), was dissolved in 200mL of water, 250mL capacity moved Volumetric flask, dilute to volume, and mix. This solution 1mL containing 25mg carbon.

4.9

Potassium standard solution. Weigh potassium in Table 2 (4.3), were placed in six 100mL beaker, dissolved in water and transferred to 100mL Volumetric flask, dilute to volume, and mix.

4.10

silicon metal standard material.

5 Apparatus

5.1

frequency induction infrared carbon and sulfur analyzer. (Sensitivity 0.1×10^{-6}).

5.2

micro pipettes. 100 μ L, the error should be less than 1 μ L.

5.3

tin capsules. volume about 0.4mL, carbon content less than 0.001% (mass fraction).