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INDUSTRY STANDARD OF THE PEOPLE'S REPUBLIC OF CHINA

SN/T 3708-2013

Determination of silicon and phosphorus content in ferrochromium. Microwave digestion-inductively coupled plasma atomic emission spectrometric method

铬铁中硅和磷含量的测定 微波消解-电感耦合等离子体原子发射光谱法

(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 Hunan Exit Inspection and Quarantine, People's Republic of China Guangdong Entry-Exit Inspection and Quarantine Bureau.

1 Scope

This standard specifies the microwave digestion - inductively coupled plasma atomic emission spectrometry (ICP-AES) Determination of ferrochrome silicon (Si) and phosphorus (P) method content.

This standard applies to the determination of ferrochrome silicon and phosphorus content. Determination of the mass fraction range. Si. 0.10% - 7.50%; P. 0.0050% ~ 0.50%.

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.

Preparation of standard solution of GB/T 602 Determination of impurities in chemical reagents GB/T 4010 alloy chemical analysis and preparation of samples Laboratory use specifications and test methods GB/T 6682 Analysis JJG768 Emission Spectrometer

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3 Method summary

Sample in microwave digestion with hydrochloric acid, nitric acid, hydrofluoric acid dissolved, boric acid complexation excess hydrofluoric acid, the digestion was treated with Inductively coupled plasma atomic emission spectrometer to determine the content of each element according to the working curve.

4 Reagents and materials

Unless otherwise indicated, the use of reagents of recognized analytical grade and above in the analysis only and in accordance with GB/T 6682 specified secondary water.

4.1
HCl. rho = 1.19g/mL.

Nitrate 4.2. rho = 1.42g/mL.

4.3
Hydrofluoric acid. rho = 1.15g/mL.

4.4
boric acid. pure spectrum.

4.5
chromium. content >=99.99%.

4.6
high purity iron. iron content >=99.988%.

4.7
hydrochloric acid. 11.

4.8
mixed acid. hydrochloric acid. nitric acid. water = 3.3.94.

4.9
boric acid solution (5%). Weigh 5g boric acid (4.4) were dissolved in 100mL water.

4.10
chromium matrix solution (20mg/mL). Weigh 2.00g ± 0.01g chromium (4.5), add 20mL of hydrochloric acid (4.1), low heat to dissolve, Cooled and transferred to 100mL volumetric flask, dilute to the mark with water, and mix stored in a plastic bottle.

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4.11

iron matrix solution (10mg/mL). Weigh 1.00g ± 0.01g high iron (4.6), add water, moist, added in small sub-total 15mL Hydrochloric acid (4.1), low-temperature heating, dissolved completely transferred to 100mL volumetric flask, dilute with water to volume, and mix.

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