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NATIONAL STANDARD OF THE PEOPLE'S REPUBLIC OF CHINA

GB/T 16477.3-2010

Replacing GB/T 16477.3-1996

Chemical analysis methods of rare earth ferrosilicon alloy and rare earth ferrosilicon magnesium alloy - Part 3: Determination of magnesia content - Inductively coupled plasma atomic emission spectrometry

稀土硅铁合金及镁硅铁合金化学分析方法 第3部分：氧化镁含量的测定 电感耦合等离子体发射光谱法

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Foreword

GB/T 16477 "rare earth ferrosilicon alloy and silicon magnesium alloy chemical analysis method" is divided into five parts.

--- Part 1. Determination of total rare earth;

--- Part 2. calcium, magnesium, manganese content - Inductively coupled plasma atomic emission spectrometry;

--- Part 3. magnesium oxide content - Inductively coupled plasma atomic emission spectrometry;

--- Part 4. Determination of silicon content;

--- Part 5. Determination of titanium content by inductively coupled plasma emission spectrometry. This is Part 3. This part is the "determination of rare earth ferrosilicon alloy and silicon magnesium alloy of magnesium oxide amount" of GB/T 16477.3-1996 Amendments. This section compared with the GB/T 16477.3-1996, have the following main changes.

--- By inductively coupled plasma spectrometry instead of magnesium oxide content - Flame atomic absorption spectrometry;

--- Increasing the precision of the terms;

--- Increased quality assurance and control provisions. National Standardization Technical Committee rare in this section (SAC/TC229) centralized. This section is Baotou Rare Earth Research Institute, China Nonferrous Metals Industry Institute of Standards Metrology and Quality is responsible for drafting. This section was drafted by the Baotou Rare Earth Research Institute. This in part by China North Industries Group, Institute of fifty two, Baotou SAIEC IQ participate in the drafting. The main drafters of this section. Liu Xiaojie, gold Siqin, love Cui end. The drafters of some of the participants. Tian Tian,

\u200b\u200bDonghai Cheng, Tian Xiaoting, para Dongsheng, Wang Yue, Xu Ren flowers. This part of the standard replaces the previous editions are.

--- GB/T 16477.3-1996. Rare earth ferrosilicon alloy and silicon magnesium alloy Methods for chemical analysis Part 3. Determination of magnesium oxide content Inductively Coupled Plasma Atomic Emission Spectrometry

1 Scope

GB/T 16477.3-2010 is the Chinese national standard on chemical analysis methods of rare earth ferrosilicon alloy and rare earth ferrosilicon magnesium alloy - part 3: determination of magnesia content - inductively coupled plasma atomic emission spectrometry, in the field of metallurgy. 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 14 January 2011 by the General Administration of Quality Supervision, Inspection and Quarantine of the People's Republic of China; Standardization Administration of China, and has been in force since 1 November 2011. Classification: ICS 77.120.99, CCS H14. 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.

GB/T 16477 provisions of this part of the rare earth ferrosilicon alloy, determination of rare earth magnesium ferrosilicon alloy magnesium oxide content. This section applies to rare earth ferrosilicon alloy, magnesium measured amount of rare earth magnesium ferrosilicon alloy. Measuring range. 0.30% to 3.00%.

2 Principle of the method

Sample with potassium dichromate solution leaching separation in dilute hydrochloric acid medium, using inductively coupled plasma atomic emission spectrometry, wavelength 280.270nm at the determination of magnesium oxide content.

3 Reagents and materials

3.1 hydrochloride (11).

3.2 potassium dichromate solution (40g/L). Weigh 40g potassium dichromate, placed in 250mL beaker and transferred to 1000mL dissolved in water capacity Flask, dilute to volume, and mix.

3.3 magnesium oxide standard stock solution. Weigh 0.2500g pre-ignition at 850 °C to constant weight and cooled to room temperature in the dryer oxide Magnesium (purity >

99.99%) were placed in 150mL beaker, add 10mL of hydrochloric acid (3.1) were dissolved by heating, cooled to room temperature, transferred to 250mL volume Volumetric flask, dilute with water to volume, and mix. This solution 1mL 1mg containing magnesium oxide.

3.4 magnesium standard solution. Pipette 5.00mL magnesium oxide standard stock solution (3.3) in 100mL flask, add 2mL of hydrochloric acid (3.1), dilute to the mark with water, mix this solution 1mL containing 50μg magnesia.

4 Instrument

4.1 Full Spectrum Direct Reading plasma emission spectrometer with a resolution of < 0.006nm (200nm office).

4.2 source. argon plasma light source, power is not less than 1.0kW.

5 Sample

Alloy samples made from powder, over 0.125mm sieve. Step

6 Analysis

6.1 Sample Weigh 0.2g sample (5), accurate to 0.0001g.