

ICS 77.120.99

CCS H14



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

GB/T 16477.5-2010

Replacing GB/T 16477.5-1996

**Chemical analysis methods of rare earth ferrosilicon alloy and rare
earth ferrosilicon magnesium alloy - Part 5: Determination of titanium
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5部分：钛量的测定 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 5. This part is the "determination of rare earth ferrosilicon alloy and silicon magnesium alloy chemical analysis of titanium content" of GB/T 16477.5-1996 of Amendments. This section compared with the GB/T 16477.5-1996, have the following main changes.

--- Instead of the original content of spectrophotometric determination of titanium by inductively coupled plasma spectrometry. Measured by the scope of ~ 0.30% Adjusted to 3.00% - 5.00% 0.30%;

--- Increasing the precision of the terms;

--- Increased quality assurance and control provisions. This part of the National Standardization Technical Committee of rare earth (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 section is Gangliangufen Steel Technology Center, China Ordnance Group Institute participated in the drafting of the fifth two. The main drafters of this section. Yumei, love Cui end. The drafters of some of the participants. Qiao Yu, Li Feng, Tian Xiaoting, para Dongsheng. This part of the alternative criteria previously issued as follows:

--- GB/T 16477.5-1996. Rare earth ferrosilicon alloy and silicon magnesium alloy Methods for chemical analysis Part 5. Determination of titanium content Inductively Coupled Plasma Atomic Emission Spectrometry

1 Scope

GB/T 16477.5-2010 is the Chinese national standard on chemical analysis methods of rare earth ferrosilicon alloy and rare earth ferrosilicon magnesium alloy - part 5: determination of titanium 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 determination of rare earth ferrosilicon alloy and magnesium ferrosilicon alloy titanium content. This section applies to the determination of rare earth ferrosilicon alloy and titanium content of magnesium ferrosilicon alloy. Measuring range. 0.30% to 5.00%. Principle

2 Sample with nitric acid, hydrofluoric acid dissolved fluorine perchlorate smoke flooding, according to the spectral emission characteristics of titanium by inductively coupled plasma line hair Emission spectroscopy measurement.

3 Reagents and materials

3.1 hydrochloride (rho1.19g/mL).

3.2 sulfate (rho1.84g/mL). Nitrate 3.3 (rho1.42g/mL).

3.4 hydrochloride (11).

3.5 sulfuric acid (595).

3.6 Hydrofluoric acid (rho1.15g/mL).

3.7 perchloric acid (rho1.67g/mL).

3.8 Titanium standard stock solution. Weigh 0.1669g by 850 °C burning 1h and cooled to room temperature in the dryer of titanium dioxide (purity > 99.99%) were placed in a platinum crucible, add 3g ~ 4g potassium pyrosulfate melt at 650 °C ~ 700 °C transparent

to red, remove the coolish, will Placed in 400mL beaker, 100mL added sulfuric acid (3.5), leaching temperature heating, washing out the crucible with sulfuric acid (3.5), the solution was cooled to room Wen moved 1000mL volumetric flask, dilute sulfuric acid (3.5) to the mark, and mix the solution 1mL containing 100 μ g titanium. 3.9 .(argon purity > 99.99%).

4 Instrument

4.1 Inductively coupled plasma spectrometer with a resolution of < 0.006nm (200nm office).

4.2 source. argon plasma light source.

5 Sample

Alloy powder, over 0.125mm sieve.