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

SN/T 2737-2010

**Determination of low aluminum content in ferroalloy. The
oxygen-rich flame atomic absorption spectrometry**

铁合金中低铝含量的测定 富氧火焰原子吸收光谱法

(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 Ningxia Exit Inspection and Quarantine.

Introduction

With the development of foreign trade, ferroalloy products from high consumption of low-quality low-power steering high value-added products, domestic high-tech iron Alloy growing product categories, low aluminum content of the alloy class are the main products, especially the aluminum content of less than 0.1% (0.01% to 0.1%) analytical standards difficult to find, upon inquiry, at home and abroad is currently no standard detection methods such Content. Western Region China is currently one of the main origin of ferroalloy export trade due to the content of the parties involved in controversial issues have occurred, on behalf of other ways for cause significant errors. In addition, according to the level of domestic production enterprises instrumentation and related testing organizations, not more expensive imported equipment Popularize, but most equipment companies and testing organizations able to apply this standard is applied, the standard upon the promotion and application in the development of production and import and export trade plays a very important role. Therefore, in order to adapt to the development of foreign trade and domestic ferroalloy production needs, the development of this standard can be solved as soon as possible a low aluminum content ferroalloy product testing standards no problem.

Determination of low aluminum content in ferroalloys Enriched by Flame Atomic Absorption

Spectrometry

1 Scope

This standard specifies low alloy aluminum content of oxygen-enriched flame atomic absorption spectrometric method.

This standard applies to the determination of low-alloy aluminum content measurement range (mass fraction). 0.01% to 0.10%.

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.

GB/T 4010 alloy chemical analysis and preparation of samples Laboratory use specifications and test methods GB/T 6682 Analysis

3 Method summary

Samples with nitric acid, hydrofluoric acid, perchloric acid was dissolved, and evaporated to dryness smoke perchlorate, dissolved salts with hydrochloric acid, and the solution intake air - ethynyl -Oxygen flame, the aluminum hollow cathode lamp as the light source at 309.3nm place, with oxygen enrichment means using atomic absorption determination of aluminum content.

4 Reagents and materials

Unless otherwise specified, the reagents were of analytical grade, water, deionized water (in line with GB/T 6682 stipulated two of water).

4.1

nitric acid ($\rho = 1.42\text{g/mL}$).

4.2

Hydrofluoric acid ($\rho = 1.15\text{g/mL}$).

4.3

perchloric acid ($\rho = 1.68\text{g/mL}$).

4.4

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

4.5

HCl. hydrochloric acid solution 11. 1 volume hydrochloric acid plus one volume of water.

4.6

Ascorbic acid (20g/L). the time is now equipped with.

4.7

sulfosalicylic acid, potassium chloride mixture. Weigh Sulfosalicyl add 10g potassium chloride 0.5g, diluted with water to 100mL.

4.8

aluminum standard solution (0.1mg/mL). Weigh accurately 0.1000g pure aluminum (99.99%) were placed in 50mL beaker, 15mL hydrochloric acid (4.5) dissolved and transferred to 100mL volumetric flask, and mix. This solution was an aluminum concentration of 1mg/mL. Pipette 10mL standard solution to the above 100mL volumetric flask, dilute to 100mL, and mix. This solution was an aluminum concentration of 0.1mg/mL.

4.9

high purity oxygen. 99.99%.

4.10

acetylene gas. 99.99%.

5 Equipment

5.1

Atomic absorption spectrometer. shall be equipped with an acetylene - air - oxygen enrichment device, or the completion of this test atomic absorption spectrometer must reach Measurement range of technical and performance requirements.