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

GB/T 7737-2007

Ferroniobium
(English Translation)

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Foreword

The degree of consistency between this Standard and ASTM A550-06 is non-equivalent.

This Standard replaces GB/T 7737-1997 "Ferroniobium".

The revision of this Standard made modifications to the followings.

- adjusted some chemical compositions of GB/T 7737-1997;
- GB/T 7737-1997 has five designations and this Standard has seven;
- added the method for arbitration;
- added Annex A.

Annex A of this Standard is informative.

This Standard was proposed by China Iron and Steel Industry Association.

This Standard shall be under the jurisdiction of Metallurgical Industry Information Standards Institute.

Main drafting organization of this Standard. Conghua Tantalum and Niobium Smelter.

The drafting organizations of this Standard. CITIC Metal, Yingde Jiate New Material Co., Ltd., Metallurgical Industry Information Standards Institute.

Main drafters of this Standard. Liang Yongtai, Wang Weizhe, Wu Lijue, Zhang Ruixiang, Zeng Guozhong, Li Huichao, Zhong Yuelian, Huang Shuang, Lin

Shaoping.

Versions of standard substituted by this Standard are.

- GB/T 7737-1987, GB/T 7737-1997.

Ferroniobium

1 Scope

This Standard specifies technical requirements, test methods, inspection rules, packaging, storage, marks and quality certificate of ferroniobium.

This Standard is applicable to ferroniobium that is made from niobium pentoxide and niobium concentrate and is used for steelmaking or casting as an additive, for electrode as alloying agent, magnetic material.

2 Normative references

The provisions in following documents become the provisions of this Standard through reference in this Standard. For dated references, the subsequent amendments (excluding corrigendum) or revisions do not apply to this Standard, however, parties who reach an agreement based on this Standard are encouraged to study if the latest versions of these documents are applicable. For undated references, the latest edition of the referenced document applies.

GB/ T 3650, The general rules for inspection packing storing transportation marking and certification of ferroalloy

GB/T 3654.1, Methods for chemical analysis of ferroniobium. The paper chromatographic gravimetric method for the determination of niobium and tantalum content

GB/T 3654.3, Ferroniobium - Determination of silicon content - Gravimetric method

GB/T 3654.4, Methods for chemical analysis of ferroniobium. The combustion gravimetric method for the determination of carbon content

GB/ T 3654.5, Methods for chemical analysis of ferroniobium. The molybdenum blue photometric method for the determination of the

phosphorus content

GB/T 3654.6, Ferroniobium - Determination of sulfur content - Combustion-iodate titrimetric method, methylene blue photometric method and infrared absorption method

GB/T 3654.7, Methods for chemical analysis of ferroniobium - The methylene blue photometric method for the determination of sulfur content

3.1.1 Ferroniobium is divided into seven designations according to different

niobium and impurity content. The chemical composition shall comply with the provisions of Table 1. According to the requirements of the purchaser, the supplier can provide the chemical composition of other elements in Table 1.

3.2.1 Ferroniobium is supplied in bulks or powders.

The maximum block weight of a bulk ferroniobium does not exceed 8kg. The number of pieces less than 10mm x 10mm must not exceed 5% of the total weight. The powdered ferroniobium is supplied in -0.45mm, of which the ones in -0.098mm is not allowed to exceed 30% of the total weight.

4.1 Sampling and preparation

The sampling and preparation for the sample of ferroniobium chemical analysis shall be in accordance with the provisions of GB/T 4010.

4.3 Granularity inspection

The granularity inspection of ferroniobium shall comply with the provisions of GB/T 13247.

5.1 Inspection and acceptance

The quality inspection and acceptance of ferroniobium shall comply with the provisions of GB/T 3650.

5.2 Batch

Ferroniobium shall be delivered in batches according to one of the following

methods.

5.3 Arbitration

When the supplier and the purchaser have objections to the results of the chemical analysis, an arbitration test shall be conducted by the arbitration authority agreed upon by the supplier and the purchaser. The arbitration test results shall be the final inspection results.

No. Element Analysis method

6 Packaging, storage, marks and quality certificate

The packaging, storage, marks and quality certificate of ferroniobium shall comply with the provisions of GB/T 3650.

Annex A

(informative)

Determination of arsenic, antimony, lead, tin, bismuth and manganese in ferroniobium - Inductively coupled plasma emission spectroscopy

A.1 Scope

This annex specifies the method that uses inductively coupled plasma emission spectroscopy to determine arsenic, antimony, lead, tin, bismuth, manganese in ferroniobium.

This Annex is applicable to the determination of arsenic, antimony, lead, tin, bismuth, manganese in ferroniobium. Determination range. the mass fraction of arsenic, antimony, lead, tin, bismuth is 0.001%~1.0%; the mass fraction of manganese is from 0.001%~2.0%.

A.2 Method summary

Use hydrofluoric acid and nitric acid to decompose the sample and dilute to a certain volume. Through matrix matching, eliminate spectral interference.

Introduce atomized solution into the inductively coupled plasma emission spectrometer. Determine the luminous intensity values of arsenic, antimony, lead, tin, bismuth, manganese and other elemental analysis lines. Determine