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NATIONAL STANDARD OF THE PEOPLE'S REPUBLIC OF CHINA

GB/T 47403-2026

Ferroniobium - Determination of niobium, tantalum, silicon, phosphorus and aluminium contents - Wavelength dispersive X-ray fluorescence spectrometry (fused bead method)

铌铁 铌、钽、硅、磷、铝含量的测定 波长色散X射线荧光光谱法（熔铸玻璃片法）

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Foreword

This document complies with the provisions of GB/T 1.1-2020 "Standardization Work Guidelines Part

1.Structure and Drafting Rules of Standardization Documents". Drafting. Please note that some content in this document may involve patents. The issuing organization of this document assumes no responsibility for identifying patents. This document was proposed by the China Iron and Steel Association. This document is under the jurisdiction of the National Technical Committee on Standardization of Pig Iron and Ferroalloys (SAC/TC318). This document was drafted by: Shandong Iron & Steel Co., Ltd., Hebei Iron & Steel Co., Ltd. Tangshan Branch, and Shanxi Taiyuan Iron & Steel Stainless Steel Co., Ltd. Limited Liability Company, Guangxi Liuzhou Iron & Steel Group Co., Ltd., Rizhao Iron & Steel Holding Group Co., Ltd., CITIC (Liaoning) New Materials Technology Co., Ltd. Company, Jilin Iron & Steel Ferroalloy Co., Ltd., and Metallurgical Industry Information and Standardization Research Institute. The main drafters of this document are. Dong Bingcheng, Wang Dequan, Wang Gang, Fang Jinlin, Wang Zhaocun, Zhao Yingjie, Sun Xuejiao, Li Yuelin, Chen Hai, and Wang Hangmin. Hao Guowang, Guo Hongtao, Huang Zhimin, Shen Binbin, Li Qijun, Li Xia, Lu Yang, Li Yaguang, Xue Junfeng, Sun Xiaofei, Zheng Haidong, Meng Liangliang, Lu Chunsheng Cheng Zhaoyang. Determination of niobium, iron, niobium, tantalum, silicon, phosphorus, and aluminum content Wavelength dispersive X-ray fluorescence spectroscopy (fused glass slide method) Warning. This document should be used by personnel with formal laboratory work experience. This document does not address all potential safety issues. Those who are responsible for taking appropriate safety and health measures and ensuring compliance with the conditions stipulated in relevant national laws and regulations are responsible for taking appropriate safety and health measures.

1 Scope

GB/T 47403-2026 is the Chinese national standard covering analysing ferroniobium - the alloy through which niobium reaches microalloyed steel, where a few hundredths of a per

cent in the steel transforms its strength, so the assay of the addition has to be exact. First edition, in force since 1 July 2026. It was issued on 31 March 2026 and has been in force since 1 July 2026, as a first edition. The document is under the responsibility of the China Iron and Steel Association. This page is published from the official record of the 2026 edition; the clause text of a standard this recent is not yet in circulation, and the figures, limits and tables it contains are those of the document itself, delivered in full with the English translation.

2.Determining the repeatability of standard measurement methods Basic methods of reproducibility

2 Normative references

The following documents contain essential provisions of this document through normative references. Date-based references are also included. For this document, only the version corresponding to the specified date applies; for undated references, the latest version (including all amendments) applies. In this document.

GB/T 4010 Sample collection and preparation for chemical analysis of ferroalloys

GB/T 6379.1 Accuracy (correctness and precision) of measurement methods and results - Part

GB/T 6379.2 Accuracy (correctness and precision) of measurement methods and results - Part

GB/T 6682 Specifications and test methods for water used in analytical laboratories

GB/T 8170 Rules for rounding off numerical values and the representation and determination of limiting values

GB/T 16597 General Rules for X-ray Fluorescence Spectrometry in Metallurgical Products JJG810 Wavelength Dispersive X-ray Fluorescence Spectrometer

10.00 Phosphorus (P) 0.008~

0.400 Aluminum (Al) 0.500~8.00