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

GB/T 7731.2-2007

Replacing GB/T 7731.16-1999; GB/T 7731.2-1987

**Ferrotungsten -- Determination of manganese content -- The
periodate spectrophotometric method and the flame atomic
absorption spectrometric method**

(English Translation)

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Foreword

This section GB/T 7731 instead of GB/T 7731.2-1987 "spectrophotometric determination of tungsten chemical analysis of iron and manganese, sodium periodate amount" and GB/T 7731.16-1999 "Methods for chemical analysis of tungsten iron flame atomic absorption spectrometric method for the determination of manganese content." this portion of the GB/T 7731.2-1987 and GB/T 7731.16-1999 comparison, in addition to editorial changes, the right GB/T 7731.2-1987 mainly for the following technical modifications.

- The measuring range of less than 0.50%, - 0.70% to 0.05%;
- Dissolving the nitric acid - hydrofluoric acid decomposition, sulfuric smoke flooding fluorine instead of oxalic acid - hydrogen peroxide decomposition;
- Chromogenic assay medium by a single phosphate to parathion mixed acid medium;
- Oxidising agent instead of sodium periodate and potassium periodate or sodium periodate;
- By the 530nm wavelength was measured to 525nm.

This part is proposed by the China Iron and Steel Association.

This section is under the jurisdiction of Metallurgical Industry Information Standards Institute.

This section is drafted. Sichuan Investment Emei Ferroalloy (Group) Co., Ltd.

1 Scope

GB/T 7731 provisions of this part of the determination of manganese content by periodate spectrophotometric method and the flame atomic absorption spectrometry.

This section applies to the determination of tungsten content of iron and manganese, including periodate spectrophotometric method and the flame atomic absorption spectrometry. Measurement range (Mass fraction). 0.05% to 0.70%.

2 Normative references

The following documents contain provisions which, through reference to GB/T 7731 to the present, constitute provisions of this section. For dated reference documents Member, all subsequent amendments (not including errata content) or revisions do not apply to this section, however, encouraged to reach under this section Parties to research agreement to use the latest versions of these documents. For undated reference documents, the latest versions apply to this section.

GB/T 4010 alloy chemical analysis and preparation of samples

3.1 Principle

Sample with oxalic acid - hydrogen peroxide decomposition, to get rid of phosphoric acid micro smoke and hydrogen peroxide. In dilute phosphoric acid medium, or high potassium iodate Sodium periodate oxidation of manganese to permanganate, 525nm wavelength measured absorbance on a spectrophotometer.

3.2 Reagents and materials

Unless otherwise indicated in the analysis using only recognized as analytical grade reagents and distilled water or its equivalent purity water.

3.2.1

High potassium iodate (or sodium periodate), a solid.

3.2.2

oxalic acid, solid.

3.2.3

hydrogen peroxide, rho1.10g/mL.

3.2.4

phosphoric acid, rho1.70g/mL.

3.2.5

does not contain water reducing substance. in 1000mL of water were added 20mL sulfuric acid (1 + 1), under the micro-boiling state adding a small amount (about 2g) and potassium periodate or sodium periodate (3.2.1), and held for about 10min. Cooling spare.

3.2.6

Manganese standard solution.

Weigh 0.1000g Jinzhumeng [mass fraction is greater than 99.9%, pre-washed to remove surface oxides in sulfuric acid (5 + 95), remove, Now clean, washed with water, and washed 2 or 3 times with ethanol, and air-dried to use] placed in 300mL beaker, add 20mL Hydrochloric acid (1 + 1), 20 mL of sulfuric acid (1 + 1), dissolved by heating, and evaporated to take the drive out white smoke of sulfuric acid, hydrochloric acid, cooled to room temperature. Moved to 1000mL Volumetric flask, dilute with water to volume, and mix. This solution 1mL manganese 100μg.

3.3 Instrument

Analysis using common laboratory instruments.

3.4 Sampling and Preparation

In accordance with the provisions of GB/T 4010 will be sampling and sample preparation. Specimens shall be by 0.088mm sieve.