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CCS H 11



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

GB/T 21931.3-2008

**Nickel, ferronickel and nickel alloys -- Determination of
phosphorus content -- Phosphovanomolybdate molecular
absorption spectrometric method**

镍、镍铁和镍合金 磷含量的测定 磷钒钼黄分光光度法

(English Translation)

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Table of Contents

Foreword

1 Scope

2 Normative references

4 Reagents

Foreword

This section GB/T 21931 equivalent international standard ISO 11400:1992 "nickel, ferronickel and nickel alloys - Determination of phosphorus content of phosphorus Vanadium molybdenum yellow spectrophotometry. " this part of ISO 11400:1992 technical content is identical, for ease of use, this section was amended as follows.

- a) "this International Standard" be replaced by "this section";
- b) use a decimal point instead of a decimal comma " , " . " , " ;
- c) Remove the preface to international standards;
- d) Normative references national standards.

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. Shanxi Taigang Stainless Steel.

1 Scope

This section GB/T 21931 specifies the spectrophotometric determination of phosphorus - vanadium - molybdenum yellow spectrophotometry nickel, ferronickel and nickel alloys phosphorus content.

This section applies to nickel, ferronickel and nickel alloys - Determination of phosphorus content. Measurement range (mass fraction). 0.0005% to 0.05%.

Available complexing effect and volatile (eg, chromium) eliminate interference arsenic, chromium, hafnium, niobium, silicon, tantalum, titanium, tungsten, and other elements. Interference element content Low, the lowest measured phosphorus content reaches 0.0005% (mass fraction).

2 Normative references

The following documents contain provisions which, through reference GB/T 21931 in this section 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 6379.1 measurement methods and results of Accuracy (trueness and precision) - Part 1. General principles and definitions (GB/T 6379.1-2004, ISO 5725-1:1994, IDT) GB/T 6379.2 measurement methods and results of Accuracy (trueness and precision) - Part 2. Determine the standard measurement method to repeat of the basic methods of reproduction (GB/T 6379.2-2004, ISO 5725-2:1994, IDT) Principle 3 Mixing the sample with hydrochloric acid and nitric acid soluble kind, smoke perchloric acid, hydrochloric acid volatile chromium. High silicon compounds and insoluble fluoride was added solubilization in Perchloric acid and nitric acid medium, will be converted into the phosphorus vanadium molybdenum yellow phosphorus heteropolyacid. Phosphovanadomolybdate yellow with methyl isobutyl ketone extraction, arsenic compounds Citrate complex.

4 Reagents

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

4.1

nitric acid, rho1.42g/mL.

4.2

hydrochloride, rho1.19g/mL.

4.3

perchloric acid, rho1.62g/mL.

4.4

hydrofluoric acid, rho1.15g/mL.

Nitrate 4.5, 1 + 4.

4.6

citric acid solution, 500g/L. He said 500g of citric acid dissolved in water and diluted to 1000mL, and mix.

4.7

methyl isobutyl ketone (also known as 4-methyl-2-pentanone).

4.8

ammonium molybdate solution, 150g/L. He said 150g of ammonium molybdate was dissolved in water and diluted to 1000mL, and mix. Using now. If the blank Value is high or unstable, the need to replace another batch of reagents.

4.9

metavanadate solution, 2.5g/L. He said 2.5g ammonium metavanadate dissolved in water and diluted to 1000mL, and mix.

4.10

sodium nitrite solution, 50g/L. He said 50g of sodium nitrite dissolved in water and diluted to 1000mL, and mix.

GB/T 21931.3-2008/ISO 11400:1992