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Method for chemical analysis of chromium metal—Part 3: Determination of phosphorus content

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In the event of any doubts arising as to the contents,
the original JIS is to be the final authority.

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Foreword

This translation has been made based on the original Japanese Industrial Standard established by the Minister of Economy, Trade and Industry through deliberations at the Japanese Industrial Standards Committee according to the proposal for establishment of Japanese Industrial Standard submitted by Japan Ferroalloy Association (JFA)/ Japanese Standards Association (JSA) with the draft being attached, based on the provision of Article 12 Clause 1 of the Industrial Standardization Law.

Consequently **JIS G 1323**:1989 has been withdrawn and partially replaced with this Standard.

Attention is drawn to the possibility that some parts of this Standard may conflict with patent rights, applications for a patent after opening to the public or utility model rights. The relevant Minister and the Japanese Industrial Standards Committee are not responsible for identifying any of such patent rights, applications for a patent after opening to the public or utility model rights.

JIS G 1323 series consists of the following 7 parts under the general title "*Method for chemical analysis of chromium metal*":

Part 1: Determination of carbon content

Part 2: Determination of silicon content

Part 3: Determination of phosphorus content

Part 4: Determination of sulfur content

Part 5: Determination of iron content

Part 6: Determination of aluminium content

Part 7: Determination of various elements—ICP atomic emission spectrometric method

Method for chemical analysis of chromium metal—Part 3: Determination of phosphorus content

1 Scope

This Japanese Industrial Standard specifies the method for determination of phosphorus content in chromium metal.

2 Normative reference

The following standard contains provisions which, through reference in this text, constitute provisions of this Standard. The most recent edition of the standard (including amendments) indicated below shall be applied.

JIS G 1301 *Ferroalloys—General rules for chemical analysis*

3 General

General matters of chemical analysis shall be in accordance with **JIS G 1301**.

4 Classification of determination methods

The determination method of phosphorus content shall be in accordance with either of the following.

a) **Molybdophosphoric acid blue absorptiometry** This method is applicable to samples with phosphorus content of 0.005 % (mass fraction) or over up to and including 0.08 % (mass fraction).

b) **Molybdophosphoric acid extraction separation molybdophosphoric acid blue absorptiometry** This method is applicable to samples with phosphorus content of 0.001 % (mass fraction) or over up to and including 0.03 % (mass fraction).

5 Molybdophosphoric acid blue absorptiometry

5.1 Summary

Sample is decomposed with perchloric acid and heated until white fumes of perchloric acid form. After reduction of chromium and iron with sodium hydrogen sulfite, hexaammonium heptamolybdate is added to turn phosphate into molybdophosphoric acid, which is then reduced with hidrazinium sulfate to generate molybdophosphoric acid blue. The absorption of the generated molybdophosphoric acid blue is measured by spectral photometer.

5.2 Reagents

The reagents shall be as follows.

5.2.1 Perchloric acid

5.2.2 Sodium hydrogen sulfite solution (100 g/L)