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JIS G 1212-3 : 2023

(JISF)

Iron and steel — Determination of silicon — Part 3: Ascorbic acid reduced molybdosilicate spectrophotometric method

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Mita Avanti, 3-11-28, Mita, Minato-ku, Tokyo, 108-0073 JAPAN

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 Japanese Industrial Standard has been established by the Minister of Economy, Trade and Industry based on the provision of Article 14, paragraph (1) of the Industrial Standardization Act in response to a proposal for establishment of Japanese Industrial Standard with a draft being attached, submitted by The Japan Iron and Steel Federation (JISF), an accredited standards development organization. This Standard partially replaces **JIS G 1212** : 1997, which has been withdrawn.

Attention is drawn to the possibility that some parts of this Standard may conflict with patent rights, published patent application or utility model rights. The relevant Minister is not responsible for identifying any of such patent rights, published patent application or utility model rights.

JIS G 1212 series consists of the following 3 parts under the general title *Iron and steel — Determination of silicon —* :

Part 1 : Gravimetric method as silicon dioxide

Part 2 : Ammonium iron (II) sulfate reduced molybdosilicate spectrophotometric method

Part 3 : Ascorbic acid reduced molybdosilicate spectrophotometric method

Iron and steel — Determination of silicon — Part 3: Ascorbic acid reduced molybdosilicate spectrophotometric method

Introduction

This Japanese Industrial Standard has been prepared based on **ISO 4829-1** : 2018, Edition 2 and **ISO 4829-2** : 2016, Edition 2 with some modifications of the technical contents.

The vertical lines on both sides and dotted underlines indicate changes from the corresponding International Standards. A list of modifications with the explanations is given in Annex JA.

1. Scope

This Standard specifies the spectrophotometric method using ascorbic acid reduced molybdosilicate for the determination of the silicon in iron and steel.

This method is applicable to the determination of silicon in iron whose content is 0.05 % or over up to and including 1 % in mass fraction and the determination of silicon in steel whose content is 0.01 % or over up to and including 1 % in mass fraction.

NOTE 1 Table 1 shows the determination ranges specified in respective standards of **JIS G 1212** series.

Table 1 Determination ranges specified in standards of JIS G 1212 series

Standard No.	Determination range [mass fraction (%)]
JIS G 1212-1	0.1 or over up to and incl. 8
JIS G 1212-2	0.01 or over up to and incl. 1
JIS G 1212-3	0.01 or over up to and incl. 1

NOTE 2 The International Standards corresponding to this Standard and the symbol of degree of correspondence are as follows.

ISO 4829-1 : 2018 *Steel and cast iron — Determination of total silicon contents--Reduced molybdosilicate spectrophotometric method — Part 1: Silicon contents between 0,05 % and 1,0 %*

ISO 4829-2 : 2016 *Steels — Determination of total silicon contents — Reduced molybdosilicate spectrophotometric method — Part 2: Silicon contents between 0,01 % and 0,05 %* (overall evaluation: MOD)

In addition, symbols which denote the degree of correspondence in the contents between the relevant International Standards and **JIS** are IDT (identical), MOD (modified), and NEQ (not equivalent) according to **ISO/IEC Guide 21-1**.

NOTE 3 In this method, the insoluble residue is treated after acid decomposition, and the determination is carried out on both the obtained solution and the