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**Microscopic testing method for the  
non-metallic inclusions in steel**

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## Foreword

This Japanese Industrial Standard has been revised by the Minister of Economy, Trade and Industry based on the provision of Article 14, paragraph (1) of the Industrial Standardization Act applied mutatis mutandis pursuant to the provision of Article 16 of the said Act in response to a proposal for revision of Japanese Industrial Standard with a draft being attached, submitted by The Japan Iron and Steel Federation (JISF), an accredited standards development organization. This edition replaces the previous edition (**JIS G 0555** : 2020), which has been technically revised.

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# Microscopic testing method for the non-metallic inclusions in steel

## Introduction

This Japanese Industrial Standard has been prepared based on **ISO 4967** : 2013, Edition 3, with some modifications of the technical contents.

In this Standard, Annex JA, and those clauses and subclauses whose numbers are followed by capitalized Latin letters (A, B, C...) contain requirements not included in the corresponding International Standard. The vertical lines on both sides and dotted underlines indicate changes from the corresponding International Standard. A list of modifications with the explanations is given in Annex JB.

## 1 Scope

This Standard specifies micrographic methods of determining the non-metallic inclusions (hereafter referred to as inclusions) in rolled or forged steel products having a reduction ratio of at least 3 through comparison with standard diagrams (hereafter referred to as the standard diagram method), measurement of shape of inclusions (hereafter referred to as direct measurement method) and point counting method.

This Standard also specifies the method for determination of non-metallic inclusions by image analysis technologies (Annex D).

NOTE 1 These methods are widely used to assess the suitability of a steel for a given use. However, since it is difficult to achieve reproducible results owing to the influence of the test operator, even with a large number of test pieces, precautions should be taken when using these methods.

NOTE 2 For certain types of steel (e.g. free cutting steels), the standardized diagrams described in this Standard may not be applicable.

This Standard also provides in Annex JA the method for assessing the cleanliness of steel by determining the type and number of inclusions in steel by means of a microscope.

NOTE 3 The International Standard corresponding to this Standard and the symbol of degree of correspondence are as follows.

ISO 4967 : 2013 *Steel — Determination of content of nonmetallic inclusions — Micrographic method using standard diagrams* (MOD)

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

## 2 Normative references

Part or all of the provisions of the following standards, through reference in this text,