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temperature service**

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In the event of any doubts arising as to the contents,  
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## Foreword

This Japanese Industrial Standard has been revised by the Minister of Economy, Trade and Industry through deliberations at the Japanese Industrial Standards Committee as the result of proposal for revision of Japanese Industrial Standard submitted by The Japan Iron and Steel Federation (JISF) with the draft being attached, based on the provision of Article 12 Clause 1 of the Industrial Standardization Law applicable to the case of revision by the provision of Article 14.

Consequently **JIS G 3464:2013** is replaced with this Standard.

However, **JIS G 3464:2013** may be applied in the **JIS** mark certification based on the relevant provisions of Article 19 Clause 1, etc. of the Industrial Standardization Law until March 19, 2019.

This **JIS** document is protected by the Copyright Law.

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.

# Steel heat exchanger tubes for low temperature service

## Introduction

This Japanese Industrial Standard has been prepared based on ISO 9329-3 : 1997, Edition 1 and ISO 9330-3 : 1997, Edition 1 with some modifications of the technical contents.

Upon agreement with the manufacturer, the purchaser can specify the supplementary quality requirements and U-bent tubes, which are indicated in Annex JA and Annex JB, respectively. 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 JC.

## 1 Scope

This Standard specifies the steel tubes used for the purpose of exchanging the heat between the inside and the outside of tubes at exceptionally low temperatures of freezing point or under, such as heat exchanger tubes and condenser tubes (hereafter referred to as tubes).

This Standard is generally applicable to the tubes of 15.9 mm to 50.8 mm in outside diameter.

NOTE 1 Austenitic stainless steel tubes specified in JIS G 3463 may be used as the steel heat exchanger tubes for low temperature service.

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

ISO 9329-3 : 1997 *Seamless steel tubes for pressure purposes — Technical delivery conditions — Part 3 : Unalloyed and alloyed steels with specified low temperature properties*

ISO 9330-3 : 1997 *Welded steel tubes for pressure purposes — Technical delivery conditions — Part 3 : Electric resistance and induction welded unalloyed and alloyed steel tubes with specified low temperature properties* (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.

## 2 Normative references

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

JIS G 0320 *Standard test method for heat analysis of steel products*