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**Seamless nickel-chromium-iron alloy heat
exchanger tubes**

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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 4904** : 2017), which has been technically revised.

However, **JIS G 4904** : 2017 may be applied in the **JIS** mark certification based on the relevant provisions of Article 30, paragraph (1), etc. of the Industrial Standardization Act until 21 May 2024.

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Seamless nickel-chromium-iron alloy heat exchanger tubes

1 Scope

This Japanese Industrial Standard specifies requirements for seamless nickel-chromium-iron alloy tubes (hereafter referred to as tubes) to be used for, for example heat exchangers or condensers used in chemical and petroleum industries, and steam generators used in nuclear power plants, where the tube is designed to exchange heat between the inside and outside of its body. However, this Standard is not applicable to steel tubes for fired heater.

NOTE Requirements for steel tubes for fired heaters are specified in **JIS G 3467**.

2 Normative references

Part or all of the provisions of the following standards, 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 0201 *Glossary of terms used in iron and steel (Heat treatment)*
- JIS G 0202 *Glossary of terms used in iron and steel (Testing)*
- JIS G 0203 *Glossary of terms used in iron and steel (Products and quality)*
- JIS G 0321 *Product analysis and its tolerance for wrought steel*
- JIS G 0404 *Steel and steel products — General technical delivery requirements*
- JIS G 0415 *Steel and steel products — Inspection documents*
- JIS G 0551 *Steels — Micrographic determination of the apparent grain size*
- JIS G 0567 *Method of elevated temperature tensile test for steels and heat-resisting alloys*
- JIS G 0582 *Automated ultrasonic examination of steel pipes and tubes*
- JIS G 0583 *Automated eddy current examination of steel pipes and tubes*
- JIS G 1281 *Methods for chemical analysis of nickel-chromium-iron alloys*
- JIS H 1270 *Nickel and nickel alloys — Sampling and general rules for analytical methods*
- JIS Z 2241 *Metallic materials — Tensile testing — Method of test at room temperature*
- JIS Z 2245 *Rockwell hardness test — Test method*
- JIS Z 8401 *Rounding of numbers*