

Nickel Base Alloy 718 (UNS N07718) for Oil and Gas Drilling and Production Equipment

Upstream Segment

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Foreword

This Standard for Nickel Base Alloy 718 (UNS N07718) was formulated by the API Exploration and Production Subcommittee on Valves and Wellheads (Subcommittee 6) Materials Task Group. It is based on the conclusions of a task group evaluation of requirements needed for Nickel Base Alloy 718 to supplement the existing requirements of API 6A and ISO 10423.

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Nickel Base Alloy 718 (UNS N07718) for Oil and Gas Drilling and Production Equipment

1 Scope

1.1 Purpose

This document provides requirements for Nickel Base Alloy 718 (UNS N07718) that are intended to supplement the existing requirements of API 6A and ISO 10423.

These additional requirements include detailed process control requirements and detailed testing requirements. The purpose of these additional requirements is to ensure that the Nickel Base Alloy 718 used in the manufacture of API 6A or ISO 10423 pressure-containing and pressure-controlling components is not embrittled by the presence of an excessive level of deleterious phases.

1.2 Applicability

This standard is intended to apply to pressure containing and pressure controlling components covered by API 6A and ISO 10423, but is not invoked by API 6A and ISO 10423. This standard is applicable when invoked by the equipment manufacturer or the equipment purchaser.

2 Normative References

The following normative documents contain provisions that, through reference in this text, constitute provisions of this standard. For dated references, subsequent amendments to, or revisions of, any of these publications do not apply. However, parties to agreements based on this standard are encouraged to investigate the possibility of applying the most recent editions of the normative documents indicated below. For undated references, the latest edition of the normative document applies. Members of ISO and IEC maintain registers of currently valid standards.

API Specification 6A, *Specification for Wellhead and Christmas Tree Equipment*

ASTM A370 ¹, *Standard Test Methods and Definitions for Mechanical Testing of Steel Products*

ASTM A604, *Standard Test Method for Macroetch Testing of Consumable Electrode Remelted Steel Bars and Billets*

ASTM B880, *General Requirements for Chemical Check Analysis Limits for Nickel, Nickel Alloys and Cobalt Alloys*

ASTM E10, *Standard Test Method for Brinell Hardness Test of Metallic Materials*

ASTM E18, *Standard Test Methods for Rockwell Hardness and Rockwell Superficial Hardness of Metallic Materials*

ASTM E112, *Standard Test Methods for Determining Average Grain Size*

ASTM E354, *Test Methods for Chemical Analysis of High-Temperature Electrical, Magnetic, and Other Similar Iron, Nickel and Cobalt Alloys*

ASTM E1181, *Standard Test Methods for Characterizing Duplex Grain Sizes*

ASTM E1473, *Test Methods for Chemical Analysis of Nickel, Cobalt, and High-Temperature Alloys*

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