



AEROSPACE MATERIAL SPECIFICATION

AMS5659™/H900**REV. A**Issued 2022-09
Stabilized 2023-01

Superseding AMS5659/H900

Steel, Corrosion-Resistant, Bars, Wire, Forgings, Rings, and Extrusions
15Cr - 4.5Ni - 0.30Cb (Nb) - 3.5Cu
Solution and Precipitation Heat Treated (H900)
(Composition similar to UNS S15500)

RATIONALE

AMS5659/H900A has been declared "STABILIZED" by AMS Committee F. This document will no longer be updated and may no longer represent standard industry practice. This document was stabilized because certain design and processing procedures may cause these products to become susceptible to stress-corrosion cracking.

NOTE: Previously, this document was issued in September 2022. The last technical update of this document occurred in September 2022. Users of this document should refer to the cognizant engineering organization for disposition of any issues with reports/certifications to this specification, including exceptions listed on the certification. In many cases, the purchaser may represent a sub-tier supplier and not the cognizant engineering organization.

STABILIZED NOTICE

AMS5659/H900A has been declared "STABILIZED" by SAE AMS Committee F, Corrosion and Heat Resistant Alloys Committee, and will no longer be subjected to periodic reviews for currency. Users are responsible for verifying references and continued suitability of technical requirements. Newer technology may exist.

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Full document details: SAE AMS5659_H900A

For more information on this standard, visit
<https://www.sae.org/standards/content/AMS5659/H900A/>

Documents

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1. SCOPE

1.1 Form

This specification covers a corrosion-resistant steel product 12 inches (305 mm) and under in nominal diameter, thickness or, for hexagons, least distance between parallel sides, and having a maximum cross-sectional area of 144 in² (930 cm²) in the solution and precipitation heat treated (H900) condition.

- 1.1.1 The aged product may be supplied directly by a producer or by another entity performing the functions of a producer as defined in AS6279. The latter would be accomplished by precipitation heat treatment of solution treated material previously certified to AMS5659. The entity assuming responsibility for the aging operation is designated the producer of AMS5659/H900A.

1.2 Application

These products have been used typically for parts requiring corrosion resistance and high strength up to 600 °F (316 °C) with good ductility and strength in the transverse direction in large section sizes, but usage is not limited to such applications (see 8.1).

1.3 Classification

Melting practice classification shall be in accordance with AMS5659.

2. APPLICABLE DOCUMENTS

The issue of the following documents in effect on the date of the purchase order forms a part of this specification to the extent specified herein. The supplier may work to a subsequent revision of a document unless a specific document issue is specified. When the referenced document has been cancelled and no superseding document has been specified, the last published issue of that document shall apply.

2.1 SAE Publications

Available from SAE International, 400 Commonwealth Drive, Warrendale, PA 15096-0001, Tel: 877-606-7323 (inside USA and Canada) or +1 724-776-4970 (outside USA), www.sae.org.

AMS2241	Tolerances, Corrosion- and Heat-Resistant Steel, Iron Alloy, Titanium, and Titanium Alloy Bars and Wire
AMS2759/3	Heat Treatment, Precipitation-Hardening Corrosion-Resistant, Maraging, and Secondary Hardening Steel Parts
AMS2761	Heat Treatment of Steel Raw Materials
AMS5659	Steel, Corrosion Resistant, Bars, Wire, Forgings, Rings, and Extrusions, 15Cr - 4.5Ni - 0.30Cb (Nb) - 3.5Cu, Consumable Electrode Remelted, Solution Heat Treated, Precipitation Hardenable
AS6279	Standard Practice for Production, Distribution, and Procurement of Metal Stock

2.2 ASTM Publications

Available from ASTM International, 100 Barr Harbor Drive, P.O. Box C700, West Conshohocken, PA 19428-2959, Tel: 610-832-9585, www.astm.org.

ASTM A370 Mechanical Testing of Steel Products

3. TECHNICAL REQUIREMENTS

3.1 Composition

Shall be in accordance with AMS5659.

3.2 Melting Practice

Shall be in accordance with AMS5659.

3.3 Condition

Shall be in accordance with AMS5659 and the following.

3.3.1 The product shall be supplied in the precipitation hardened (H900) heat treat condition.

3.3.2 Bar shall not be cut from plate (see also 4.3.3).

3.4 Heat Treatment

Shall be in accordance with AMS5659 and the following.

3.4.1 Precipitation Heat Treatment

3.4.1.1 Shall be in accordance with the requirements applicable to either AMS2761 or AMS2759/3 at the producer's option, except acceptance testing and criteria shall be as specified in 3.5.3.1.

3.4.1.2 When product certified as AMS5659 (solution treated material) is precipitation heat treated to meet AMS5659/H900A by an entity other than the producer of the original product, the heat treatment source shall be accredited by a recognized industry agency for stainless steel heat treatment acceptable to the purchaser.