



# AEROSPACE MATERIAL SPECIFICATION

**AMS5879™****REV. E**

Issued 1991-01  
Reaffirmed 2007-08  
Revised 2021-08

Superseding AMS5879D

Nickel Alloy, Corrosion and Heat-Resistant, Sheet, Strip, and Foil  
62Ni - 21.5Cr - 9.0Mo - 3.7Cb (Nb)  
Cold Rolled and Annealed  
(Composition similar to UNS N06625/N06626)

## RATIONALE

AMS5879 incorporates updated unauthorized exceptions clauses (3.8, 4.4.5, 5.1.1, 8.5, 8.6), updates composition (3.1), standardizes condition (3.3), adds strain rate control (3.5.1.1), allows prior revisions (8.4), and is the result of a Five-Year Review and update of the specification.

### 1. SCOPE

#### 1.1 Form

This specification covers a corrosion and heat-resistant nickel alloy in the form of sheet, strip, and foil 0.100 inch (2.54 mm) and under in nominal thickness.

#### 1.2 Application

These products have been used typically for the fabrication of high-quality bellows and other applications requiring low-cycle fatigue life, high strength, resistance to corrosion, and excellent formability and weldability, but usage is not limited to such applications.

### 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](http://www.sae.org).

AMS2262 Tolerances, Nickel, Nickel Alloy, and Cobalt Alloy Sheet, Strip, and Plate

AMS2269 Chemical Check Analysis Limits, Nickel, Nickel Alloys, and Cobalt Alloys

AMS2371 Quality Assurance Sampling and Testing, Corrosion and Heat-Resistant Steels and Alloys, Wrought Products and Forging Stock

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Full document details: [SAE AMS5879E](http://www.sae.org/standards/content/AMS5879E)

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Documents

Document Sharing Hub

|         |                                                                                                                                       |
|---------|---------------------------------------------------------------------------------------------------------------------------------------|
| AMS2750 | Pyrometry                                                                                                                             |
| AMS2807 | Identification, Carbon and Low-Alloy Steels, Corrosion and Heat-Resistant Steels and Alloys, Sheet, Strip, Plate, and Aircraft Tubing |
| ARP1917 | Clarification of Terms Used in Aerospace Metals Specifications                                                                        |
| AS4194  | Sheet and Strip Surface Finish Nomenclature                                                                                           |

## 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](http://www.astm.org).

|                 |                                                                                                                |
|-----------------|----------------------------------------------------------------------------------------------------------------|
| ASTM A480/A480M | Flat-Rolled Stainless and Heat-Resisting Steel Plate, Sheet, and Strip                                         |
| ASTM E8/E8M     | Tension Testing of Metallic Materials                                                                          |
| ASTM E112       | Determining Average Grain Size                                                                                 |
| ASTM E290       | Bend Test of Material for Ductility                                                                            |
| ASTM E354       | Chemical Analysis of High-Temperature, Electrical, Magnetic, and Other Similar Iron, Nickel, and Cobalt Alloys |

## 3. TECHNICAL REQUIREMENTS

### 3.1 Composition

Shall conform to the percentages by weight shown in Table 1, determined in accordance with ASTM E354 or by other analytical methods acceptable to purchaser.

**Table 1 - Composition**

| Element             | Min       | Max   |
|---------------------|-----------|-------|
| Carbon              | --        | 0.03  |
| Manganese           | --        | 0.50  |
| Silicon             | --        | 0.15  |
| Phosphorus          | --        | 0.015 |
| Sulfur              | --        | 0.015 |
| Chromium            | 20.00     | 23.00 |
| Molybdenum          | 8.00      | 10.00 |
| Columbium (Niobium) | 3.15      | 4.15  |
| Cobalt              | --        | 1.00  |
| Titanium            | --        | 0.40  |
| Aluminum            | --        | 0.40  |
| Iron                | --        | 5.00  |
| Nitrogen            | --        | 0.02  |
| Nickel              | remainder |       |

#### 3.1.1 Check Analysis

Composition variations shall meet the applicable requirements of AMS2269.

### 3.2 Melting Practice

Alloy shall be multiple melted using consumable electrode practice in the remelt cycle. If consumable electrode remelting is not performed in vacuum, electrodes which have been produced by vacuum induction melting shall be used in the remelt cycle.