



AEROSPACE MATERIAL SPECIFICATION

AMS4574™**REV. F**

Issued 1948-05
Revised 2017-01
Reaffirmed 2026-06

Superseding AMS4574E

Nickel-Copper Alloy, Corrosion Resistant, Tubing, Seamless
67Ni - 31Cu
Annealed

(Composition similar to UNS N04400)

RATIONALE

AMS4574F revises Composition (3.1), Quality (3.4.2), and Reports (4.4), and is a Five-Year Review and update of this specification.

AMS4574F has been reaffirmed to comply with the SAE Five-Year Review policy.

A reaffirmed status is given to technical reports that have been reviewed by the technical committee and deemed to be current with no need for immediate revision. No changes have been made to this document as a result of this review.

1. SCOPE

1.1 Form

This specification covers a corrosion-resistant nickel-copper alloy in the form of seamless tubing.

1.2 Application

This product has been used typically for fluid lines, such as primer and fuel lines, requiring corrosion resistance with relatively high strength, 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.

AMS2263 Tolerances Nickel, Nickel Alloy, and Cobalt Alloy Tubing

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

ARP1917 Clarification of Terms Used in Aerospace Metals Specifications

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Documents

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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 A1016 General Requirements for Ferritic Alloy Steel, Austenitic Alloy Steel, and Stainless Steel Tubes

ASTM E8/E8M Tension Testing of Metallic Materials

ASTM E1473 Chemical Analysis of Nickel, Cobalt, and High-Temperature Alloys

3. TECHNICAL REQUIREMENTS

3.1 Composition

Shall conform to the percentages by weight shown in Table 1, determined by wet chemical methods in accordance with ASTM E1473 or by spectrochemical or other analytical methods acceptable to purchaser.

Table 1 - Composition

Element	Min	Max
Carbon	--	0.3
Manganese	--	2.0
Silicon	--	0.5
Sulfur	--	0.024
Copper	28.0	34.00
Iron	--	2.5
Nickel	remainder	

3.1.1 Check Analysis

Composition variations shall meet the applicable requirements of AMS2269.

3.2 Condition

Cold drawn and annealed.

3.3 Properties

Tubing shall conform to the following requirements:

3.3.1 Tensile Properties

Shall be as shown in Table 2, determined in accordance with ASTM E8/E8M.

Table 2 - Tensile properties

Property	Value
Tensile Strength, maximum	85 ksi (586 MPa)
Elongation in 2 inches (50.8 mm) or 4D, minimum	32%

3.3.2 Flareability

Tubing shall withstand flaring, without formation of cracks or other visible defects, by being forced, at room temperature, axially with steady pressure over a hardened and polished tapered steel pin having a 74° included angle to produce a flare having a permanent expanded OD not less than shown in Table 3.