



AEROSPACE MATERIAL SPECIFICATION

AMS5676™

REV. G

Issued 1953-06
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Revised 2022-11

Superseding AMS5676F

Nickel Alloy, Corrosion- and Heat-Resistant, Welding Wire
80Ni - 20Cr

(Composition similar to UNS N06003)

RATIONALE

AMS5676G is the result of a Five-Year Review and update of the specification. The revision updates composition and reporting requirements (3.1, 3.1.3), prohibits unauthorized exceptions (3.7, 4.4.1, 5.3.1, 8.4), adds country of origin (4.4), and allows prior revisions (8.3).

1. SCOPE

1.1 Form

This specification covers a corrosion- and heat-resistant nickel alloy in the form of welding wire.

1.2 Application

This wire has been used typically as filler metal for gas-tungsten-arc or gas-metal-arc welding of parts, fabricated from similar or dissimilar corrosion- and heat-resistant alloys, requiring joints with strength and corrosion resistance comparable to those of the base metal, 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.

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

AMS2813 Packaging and Marking of Packages of Welding Wire, Standard Method

AMS2814 Packaging and Marking of Packages of Welding Wire, Premium Quality

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For more information on this standard, visit
<https://www.sae.org/standards/content/AMS5676G/>

AMS2816	Identification, Welding Wire, Tab Marking Method
AMS2819	Identification, Welding Wire, Direct Color Code System
ARP1876	Weldability Test for Weld Filler Metal Wire
ARP4926	Alloy Verification and Chemical Composition, Inspection of Welding Wire
AS7766	Terms Used in Aerospace Metals Specifications

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 E354	Chemical Analysis of High-Temperature, Electrical, Magnetic, and Other Similar Iron, Nickel, and Cobalt Alloys
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2.3 Definitions

Terms used in AMS are defined in AS7766.

3. TECHNICAL REQUIREMENTS

3.1 Composition

Wire 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 (3.1.2.1)	0.08	0.26
Manganese	--	1.00
Silicon	--	0.50
Phosphorus	--	0.025
Sulfur	--	0.015
Chromium	19.00	21.00
Nickel	75.00	--
Cobalt	--	1.00
Iron	--	0.50
Copper	--	0.20

3.1.1 Check Analysis

Composition variations shall meet the applicable requirements of AMS2269.

3.1.2 Chemical analysis of initial ingot, bar, or rod stock before drawing, is acceptable provided the processes used for drawing or rolling, annealing, and cleaning, are controlled to ensure continued conformance to chemical composition requirements.

3.1.2.1 Carbon shall also be determined periodically on finished wire (see 4.2.2).

3.1.3 Producer may test for any element not listed in Table 1 and include this analysis in the report of 4.4. Reporting of any element not listed in the composition table is not a basis for rejection, unless limits of acceptability are specified by the purchaser.