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400 COMMONWEALTH DRIVE, WARRENDALE, PA 15096

AEROSPACE MATERIAL SPECIFICATION

Submitted for recognition as an American National Standard

AMS 5682C

Issued 3-1-42
Revised 4-1-87

Superseding AMS 5682B

COATING ALLOY, CORROSION AND HEAT RESISTANT
78Ni - 20Cr

UNS N06003

1. SCOPE:

1.1 Form: This specification covers a corrosion and heat resistant nickel alloy in the form of rods and wire.

1.2 Application: Primarily for use as a heat and corrosion resistant coating.

2. APPLICABLE DOCUMENTS: The following publications form a part of this specification to the extent specified herein. The latest issue of Aerospace Material Specifications shall apply. The applicable issue of other documents shall be as specified in AMS 2350.

2.1 SAE Publications: Available from SAE, 400 Commonwealth Drive, Warrendale, PA 15096.

2.1.1 Aerospace Material Specifications:

AMS 2261 - Tolerances, Nickel, Nickel Alloy, and Cobalt Alloy Bars and Forging Stock
MAM 2261 - Tolerances, Metric, Nickel, Nickel Alloy, and Cobalt Alloy Bars and Forging stock
AMS 2269 - Chemical Check Analysis Limits, Wrought Nickel Alloys and Cobalt Alloys
AMS 2350 - Standards and Test Methods
AMS 2371 - Quality Assurance Sampling of Corrosion and Heat Resistant Steels and Alloys, Wrought Products Except Forgings and Forging Stock

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2.2 ASTM Publications: Available from American Society for Testing and Materials, 1916 Race Street, Philadelphia, PA 19103.

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

2.3 U.S. Government Publications: Available from Commanding Officer, Naval Publications and Forms Center, 5801 Tabor Avenue, Philadelphia, PA 19120.

2.3.1 Military Specifications:

MIL-STD-163 - Steel Mill Products, Preparation for Shipment and Storage

3. TECHNICAL REQUIREMENTS:

3.1 Composition: Shall conform to the following percentages by weight, Ø determined by wet chemical methods in accordance with ASTM E354 or by spectrographic or other analytical methods approved by purchaser:

	min	max
Carbon	0.15	0.30
Manganese	0.60	1.00
Silicon	--	0.30
Chromium	19.0	21.0
Cobalt (3.1.1)	--	1.0
Iron	--	1.0
Nickel + Cobalt	remainder	

3.1.1 Determination not required for routine acceptance.

3.1.2 Check Analysis: Composition variations shall meet the requirements of AMS 2269.

3.2 Condition: Cold drawn, or hot rolled and descaled.

3.3 Properties: The product shall melt quickly and flow freely without bubbling or boiling and shall produce an adherent deposit free from porosity due to blowholes, gas cavities, or slag inclusions.

3.4 Quality: The product, as received by purchaser, shall be uniform in quality and condition, sound, and free from foreign materials and from imperfections detrimental to usage of the product.

3.5 Tolerances: Shall conform to all applicable requirements of AMS 2261 or MAM 2261.

4. QUALITY ASSURANCE PROVISIONS:

4.1 Responsibility for Inspection: The vendor of the product shall supply all samples for vendor's tests and shall be responsible for performing all required tests. Results of such tests shall be reported to the purchaser as required by 4.4. Purchaser reserves the right to sample and to perform any confirmatory testing deemed necessary to ensure that the product conforms to the requirements of this specification.

4.2 Classification of Tests: Tests to determine conformance to all technical Ø requirements of this specification are classified as acceptance tests and shall be performed on each heat or lot as applicable.

4.3 Sampling: Shall be in accordance with AMS 2371.

4.4 Reports:

4.4.1 The vendor of the product shall furnish with each shipment a report Ø showing the results of tests for chemical composition of each heat and stating that the product conforms to the other technical requirements of this specification. This report shall include the purchase order number, heat number, AMS 5682C, size, and quantity.

4.4.2 When parts made of this coating alloy or parts or assemblies requiring use of this coating alloy are supplied, the part or assembly manufacturer shall inspect each lot of alloy to determine conformance to the technical requirements of this specification and shall furnish with each shipment a report stating that the product conforms. This report shall include the purchase order number, AMS 5682C, part or assembly number, and quantity.

4.5 Resampling and Retesting: Shall be in accordance with AMS 2371.

5. PREPARATION FOR DELIVERY:

5.1 Identification: The product shall be identified as follows:

5.1.1 Spools and Coils: Each spool and coil shall be marked with a durable label or tag showing not less than the manufacturer's identification, purchase order number, AMS 5682C, nominal size, and quantity; boxes or drums shall be marked with the same information.

5.1.2 Cut Lengths: Shall have attached to each bundle or enclosed in each box a durable tag marked with the information of 5.1.1; when boxed, the box shall be marked with the same information.

5.2 Packaging:

5.2.1 The product shall be prepared for shipment in accordance with commercial practice and in compliance with applicable rules and regulations pertaining to the handling, packaging, and transportation of the product to ensure carrier acceptance and safe delivery. Packaging shall conform to carrier rules and regulations applicable to the mode of transportation.