



400 Commonwealth Drive, Warrendale, PA 15096-0001

AEROSPACE MATERIAL SPECIFICATION



AMS 5852D

Issued	SEP 1977
Revised	JUL 1989
Noncurrent	APR 1994
Cancelled	OCT 2001
Superseding	AMS 5852C

Nickel Alloy, Corrosion and Heat Resistant, Billets and Preforms

55Ni - 15Cr - 17Co - 5.0Mo - 3.5Ti - 4.0Al - 0.025B

Power Metallurgy Product, Hot Isostatically Pressed

(Composition similar to UNS N13017)

CANCELLATION NOTICE

This specification has been "CANCELLED" by the Aerospace Materials Division, SAE, as of October 2001. By this action, this document will remain listed in the Numerical Section of the Index of Aerospace Material Specifications.

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Documents

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1. SCOPE:

1.1 Form:

This specification covers a corrosion and heat resistant nickel alloy powder-metallurgy product in the form of billets and preforms.

1.2 Application:

Primarily for highly-stressed parts, such as rotating parts of gas turbine engines, requiring high strength and corrosion and oxidation resistance up to 1400°F (760°C).

2. APPLICABLE DOCUMENTS:

The following publications form a part of this specification to the extent specified herein. The latest issue of SAE publications 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 2374	Quality Assurance Sampling of Corrosion and Heat Resistant Steels and Alloys, Forgings and Forging Stock
AMS 2630	Ultrasonic Inspection, Product Over 0.5 In. (12.5 mm) Thick
AMS 5851	Alloy Powder, Corrosion and Heat Resistant, 55Ni - 15Cr - 17Co - 5.0Mo - 3.5Ti - 4.0Al - 0.025B, as Fabricated

2.1.2 Aerospace Recommended Practices:

ARP1313	Determination of Trace Elements in High Temperature Alloys
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2.2 ASTM Publications:

Available from ASTM, 1916 Race Street, Philadelphia PA 19103.

ASTM E8	Tension Testing of Metallic Materials
ASTM E8M	Tension Testing of Metallic Materials (Metric)
ASTM E10	Brinell Hardness of Metallic Materials
ASTM E21	Elevated Temperature Tension Tests of Metallic Materials
ASTM E112	Determining Average Grain Size
ASTM E139	Conducting Creep, Creep-Rupture, and Stress-Rupture Tests of Metallic Materials
ASTM E292	Conducting Time-for-Rupture Notch Tension Tests of Materials
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 Standards:

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

3. TECHNICAL REQUIREMENTS:

3.1 Material:

Billets and preforms shall be produced by compaction of AMS 5851 powder by hot isostatic pressing (HIP) to produce products meeting the requirements of 3.5 and 3.6.

3.2 Composition:

Shall conform to the following percentages by weight, determined by wet chemical methods in accordance with ASTM E354, by spectrochemical methods, or by other analytical methods acceptable to purchaser except that lead and bismuth shall be determined in accordance with ARP 1313 and oxygen and nitrogen shall be determined by Leco gas analyzer or equivalent: