



AEROSPACE MATERIAL SPECIFICATION

AMS5924™

Issued

2019-01

Nickel Alloy, Corrosion and Heat-Resistant,
47.5Ni - 22Cr - 1.5Co - 9.0Mo - 0.60W - 18.5Fe
Powder for General Applications including Metal Injection Molding and Additive
Manufacturing without Special Powder Manufacturing Controls
(Composition similar to EN NiCr22FeMo, NC22FeD, or UNS N06002)

RATIONALE

AMS5924 is a new specification for a corrosion and heat-resistant nickel-chromium-iron-molybdenum-alloy in the form of pre-alloyed powder.

1. SCOPE

1.1 Form

This specification covers a corrosion and heat-resistant nickel-chromium-iron-molybdenum-alloy in the form of pre-alloyed powder manufactured by atomization in an inert gas.

1.2 Application

This powder is intended to be used for the manufacturing of aero-engine components such as swirlers, fuel injectors or vane cooling inserts, but usage is not limited to such applications.

1.3 Safety - Hazardous Materials

While the materials, methods, applications, and processes described or referenced in this specification may involve the use of hazardous materials, this specification does not address the hazards that may be involved in such use. It is the sole responsibility of the user to ensure familiarity with the safe and proper use of any hazardous materials and to take necessary precautionary measures to ensure the health and safety of all personnel involved.

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.

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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.

ARP1917 Clarification of 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 B212 Apparent Density of Free-Flowing Metal Powders Using the Hall Flowmeter

ASTM B822 Particle Size Determination of Metal Powders by Light Scattering

ASTM E1019 Determination of Carbon, Sulfur, Nitrogen and Oxygen in Steel, Iron, Nickel, and Cobalt Alloys by Various Combustion and Fusion Techniques

ASTM E2465 Analysis of Ni-Base Alloys by Wavelength Dispersive X-Ray Fluorescence Spectrometry

ASTM E2594 Analysis of Nickel Alloys by Inductively Coupled Plasma Atomic Emission Spectrometry

ASTM E2823 Analysis of Nickel Alloys by Inductively Coupled Plasma Mass Spectrometry

2.3 ISO Publications

Copies of these documents are available online at <http://webstore.ansi.org/>.

ISO 13320 Particle Size Analysis - Laser Diffraction Methods

3. TECHNICAL REQUIREMENTS

3.1 Composition

Shall conform to the percentages by weight shown in Table 1, determined by chemical analysis in accordance with ASTM E2465, ASTM E2594, ASTM E2823, or by other analytical methods acceptable to the purchaser. Carbon, sulfur, oxygen, and nitrogen content shall be determined by ASTM E1019.