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INTERNATIONAL
400 Commonwealth Drive, Warrendale, PA 15096-0001

AEROSPACE MATERIAL SPECIFICATION

SAE AMS 5690K

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Superseding AMS 5690J

Submitted for recognition as an American National Standard

STEEL, CORROSION AND HEAT RESISTANT, WIRE
17Cr - 12Ni - 2.5Mo (SAE 30316)
Solution Heat Treated

UNS S31600

1. SCOPE:

1.1 Form:

This specification covers a corrosion and heat resistant steel in the form of wire.

1.2 Application:

This wire has been used typically in woven wire screening, but usage is not limited to such application.

1.2.1 The former requirements of this specification for use as welding wire are embodied in AMS 5692. When AMS 5690 is specified for welding wire, use AMS 5692.

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 publications shall be the issue in effect on the date of the purchase order.

2.1 SAE Publications:

Available from SAE, 400 Commonwealth Drive, Warrendale, PA 15096-0001.

AMS 2241 Tolerances, Corrosion and Heat Resistant Steel, Iron Alloy, Titanium, and Titanium Alloy Bars and Wire
MAM 2241 Tolerances, Metric, Corrosion and Heat Resistant Steel, Iron Alloy, Titanium, and Titanium Alloy Bars and Wire
AMS 2248 Chemical Check Analysis Limits, Wrought Corrosion and Heat Resistant Steels and Alloys, Maraging and Other Highly-Alloyed Steels, and Iron Alloys
AMS 2371 Quality Assurance Sampling and Testing, Corrosion and Heat Resistant Steels and Alloys, Wrought Products and Forging Stock

2.2 ASTM Publications:

Available from ASTM, 1916 Race Street, Philadelphia, PA 19103-1187.

ASTM E 353 Chemical Analysis of Stainless, Heat-Resisting, Maraging, and Other Similar Chromium-Nickel-Iron Alloys

2.3 U.S. Government Publications:

Available from Standardization Documents Order Desk, Building 4D, 700 Robbins Avenue, Philadelphia, PA 19111-5094.

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

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 E 353, by spectrochemical methods, or by other analytical methods acceptable to purchaser.

TABLE 1 - Composition

Element	min	max
Carbon	--	0.08
Manganese	--	2.00
Silicon	--	1.00
Phosphorus	--	0.040
Sulfur	--	0.030
Chromium	16.00	18.00
Nickel	10.00	14.00
Molybdenum	2.00	3.00
Copper	--	0.75

3.1.1 Check Analysis: Composition variations shall meet the requirements of AMS 2248.

3.2 Condition:

Solution heat treated free from continuous carbide network and bright finished.

3.3 Properties:

Wire shall conform to the following requirements:

3.3.1 Bending: Wire shall withstand, without cracking, bending at room temperature flat on itself.

3.4 Quality:

Wire, as received by purchaser, shall be uniform in quality and condition, cylindrical, smooth, and free from kinks, twists, scrapes, splits, cold shuts, pits, and other imperfections detrimental to usage of the wire.

3.5 Tolerances:

Shall conform to all applicable requirements of AMS 2241 or MAM 2241.

4. QUALITY ASSURANCE PROVISIONS:

4.1 Responsibility for Inspection:
(R)

The vendor of wire shall supply all samples for vendor's tests and shall be responsible for performing all required tests. Purchaser reserves the right to sample and to perform any confirmatory testing deemed necessary to ensure that the wire conforms to the requirements of this specification.

4.2 Classification of Tests:

Tests for all technical requirements are acceptance tests and shall be performed on each heat or lot as applicable.

4.3 Sampling and Testing:
(R)

Shall be in accordance with AMS 2371.

4.4 Reports:

The vendor of wire shall furnish with each shipment a report showing the results of tests for chemical composition of each heat and stating that the wire conforms to the other technical requirements. This report shall include the purchase order number, heat and lot number, AMS 5690K, nominal size, and quantity.

4.5 Resampling and Retesting:

Shall be in accordance with AMS 2371.

5. PREPARATION FOR DELIVERY:

5.1 Wire shall be supplied in coils, on reels, or in straight lengths, as ordered.

5.2 Identification:

Coils or reels of wire shall be identified by a durable tag legibly marked with the purchase order number, AMS 5690K, lot number, nominal size, quantity, and manufacturer's identification. Straight lengths shall be bundled or boxed and shall have attached to each bundle or box a tag marked as above.