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SAE-AMS5697, "STEEL, CORROSION RESISTANT, WIRE 19CR - 9.5NI (SAE 30304) SOLUTION HEAT TREATED", was adopted on 07-JUL-93 for use by the Department of Defense (DoD). Proposed changes by DoD activities must be submitted to the DoD Adopting Activity: ASC/ENOI, Building 560, 2530 Loop Road West, Wright-Patterson AFB, OH 45433-7101. Copies of this document may be purchased from the Society of Automotive Engineers 400 Commonwealth Drive Warrendale, Pennsylvania, United States, 15096-0001. http://www.sae.org/

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FSC 9505

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400 Commonwealth Drive, Warrendale, PA 15096-0001

AEROSPACE MATERIAL SPECIFICATION

SAE AMS 5697D

Issued 1 NOV 1954
Revised 1 OCT 1991

An American National Standard

Superseeding AMS 5697C

STEEL, CORROSION RESISTANT, WIRE 19Cr – 9.5Ni (SAE 30304) Solution Heat Treated

UNS S30400

1. SCOPE:

1.1 Form:

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

1.2 Application:

This product has been used typically for braiding wire, but usage is not limited to such applications.

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 A 370 Mechanical Testing of Steel Products
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:

(R)

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	18.00	20.00
Nickel	8.00	11.00
Molybdenum	--	0.75
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 Tensile Properties: Shall be as follows shown in Table 2, determined in accordance with ASTM A 370:

TABLE 2 - Tensile Properties

Property	Value
Tensile Strength	90.0 – 125 ksi (621 – 862 MPa)
Elongation in 2 Inches (50.8 mm), Minimum	35%

3.3.2 Wrapping: Wire shall withstand, without cracking, wrapping at room temperature five full, closely-spaced turns around a diameter equal to the nominal diameter of the wire.

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, 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.