

**AEROSPACE
MATERIAL
SPECIFICATION**

Submitted for recognition as an American National Standard

AMS 5710D

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Superseding AMS 5710C

STEEL BARS AND FORGINGS, CORROSION AND HEAT RESISTANT
20Cr - 2.2Si - 1.3Ni (0.76 - 0.86C)

UNS S65006

1. SCOPE:

- 1.1 Form: This specification covers a corrosion and heat resistant steel in the form of bars, forgings, and forging stock.
- 1.2 Application: Primarily for parts, such as intake valves and valve seat inserts, requiring strength to 1000°F (540°C), oxidation resistance to 1800°F (980°C), and resistance to attack by lead compounds to 1600°F (870°C).

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 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 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
- AMS 2374 - Quality Assurance Sampling of Corrosion and Heat Resistant Steels and Alloys, Forgings and Forging Stock

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2.1.1 (Cont'd.):

AMS 2806 - Identification, Bars, Wire, Mechanical Tubing, and Extrusions,
Carbon and Alloy Steels and Heat and Corrosion
Resistant Steels and Alloys

AMS 2808 - Identification, Forgings

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

ASTM E10 - Brinell Hardness of Metallic Materials

ASTM E353 - Chemical Analysis of Stainless, Heat-Resisting, Maraging, and
Other Similar Chromium-Nickel-Iron 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 Composition: Shall conform to the following percentages by weight,
determined by wet chemical methods in accordance with ASTM E353 or by
spectrographic or other analytical methods approved by purchaser:

	min	max
Carbon	0.76 -	0.86
Manganese	0.20 -	0.60
Silicon	1.90 -	2.60
Phosphorus	--	0.030
Sulfur	--	0.030
Chromium	19.00 -	21.00
Nickel	1.00 -	1.60

3.1.1 Check Analysis: Composition variations shall meet the requirements of
AMS 2248.3.2 Condition: The product shall be supplied in the following condition:3.2.1 Bars: Shall have hardness not higher than 321 HB, or equivalent, determined
in accordance with ASTM E10.3.2.2 Forgings: As ordered.3.2.3 Forging Stock: As ordered by the forging manufacturer.3.3 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.