AERONAUTICAL
MATERIAL SPECIFICATIONS
SOCIETY OF AUTOMOTIVE ENGINEERS, Inc. 485 Lexington Ave., New York 17, N.Y.

AMS 5665C

Issued 10-15-40
Revised 8-15-58

ALLOY, CORROSION AND HEAT RESISTANT
Nickel Base - 15.5Cr - 8Fe

1. ACKNOWLEDGMENT: A vendor shall mention this specification number and its revision letter in all quotations and when acknowledging purchase orders.

2. FORM: Bars, forgings, and forging stock.

3. APPLICATION: Primarily for parts and assemblies requiring both corrosion and oxidation resistance, and where such parts may require welding during fabrication. Parts and assemblies requiring oxidation resistance up to approximately 2000 F, but useful at the higher temperatures only when stresses are low. Strength at elevated temperatures is similar to that of the 18-8 type of steel.

4. COMPOSITION:

Carbon	0.15	max
Manganese	1.0	max
Silicon	0.50	max
Sulfur	0.015	max
Chromium	14.0	- 17.0
Nickel + Cobalt	72.0	min
Cobalt, if determined	1.0	max
Iron	6.0	- 10.0
Copper	0.50	max

5. CONDITION:

5.1 Bars:

5.1.1 Rounds 2.5 in. and Less in Diameter: Cold drawn.

5.1.2 Rounds Over 2.5 in. in Diameter: Hot finished. They may be turned, and shall be turned when specified.

5.1.3 Squares and Rectangles: Hot finished.

5.2 Forgings: Annealed by heating uniformly to 1925 F ± 25 and air cooling.

5.3 Forging Stock: As ordered by the forging manufacturer.

6. TECHNICAL REQUIREMENTS:

6.1 Hardness:

6.1.1 Bars: Shall have hardness as follows or equivalent when taken midway between center and surface.

Printed in U. S. A.

Nominal Diameter or Thickness Inches	Hardness, Brinell
Rounds	
1.0 and under	229 - 311
Over 1.0 to 2.5, incl	207 - 285
Over 2.5	134 - 217
Squares and Rectangles	
Under 0.5	134 - 241
0.5 and over	134 - 217

Ø6.1.2 Forgings: Shall have hardness not higher than Brinell 187 or equivalent.

7. QUALITY: Material shall be uniform in quality and condition, clean, sound, and free from foreign materials and from internal and external imperfections detrimental to fabrication or to performance of parts.

8. TOLERANCES: Unless otherwise specified, tolerances shall conform to the latest issue of AMS 2261 as applicable. Diameter, thickness, width, and straightness tolerances shall be as specified below:

8.1 Diameter (Rounds 2.5 in. and Less in Diameter): Table II.

8.2 Diameter (Rounds over 2.5 in. in Diameter): Table IV.

8.3 Thickness and Width (Squares and Rectangles): Table IV.

8.4 Straightness: Section 6 as applicable.

9. REPORTS:

9.1 Unless otherwise specified, the vendor of the product shall furnish with each shipment three copies of a report of the results of tests for chemical composition of each heat in the shipment and results of tests on each size from each heat to determine conformance to the technical requirements of this specification. This report shall include the purchase order number, heat number, material specification number, size, and quantity from each heat. If forgings are supplied, the part number and size of stock used to make the forgings shall also be included.

9.2 Unless otherwise specified, the vendor of finished or semi-finished parts shall furnish with each shipment three copies of a report showing the purchase order number, material specification number, contractor or other direct supplier of material, part number, and quantity. When material for making parts is produced or purchased by the parts vendor, that vendor shall inspect each lot of material to determine conformance to the requirements of this specification, and shall include in the report a statement that the material conforms, or shall include copies of laboratory reports showing the results of tests to determine conformance.