

# AERONAUTICAL MATERIAL SPECIFICATION

Society of Automotive Engineers, Inc.  
29 West 39th Street  
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## AMS5665A

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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, billets, and forgings.
3. APPLICATION: 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	1.00 max
Silicon	0.50 max
Chromium	14.00 - 17.00
Nickel + Cobalt	72.00 min
Cobalt, if determined	1.00 max
Iron	6.00 - 10.00
Copper	0.50 max

5. CONDITION: Unless otherwise specified, the product shall be furnished in the following conditions:
  - 5.1 Rounds 2.5 in. and less in diameter: Cold drawn.
  - 5.2 Rounds over 2.5 in. in diameter: Hot Finished. They may be turned and shall be turned when specified.
  - 5.3 Squares and Rectangles: Hot finished.
  - 5.4 Forgings: Stress relieved by heating uniformly to 1925 F  $\pm$  25 and cooling in air.
  - 5.5 Forging Stock: As ordered by the forging manufacturer.
6. TECHNICAL REQUIREMENT:
  - 6.1 Hardness: Bars and forgings shall have hardness as follows:
    - 6.1.1 Rounds 2.5 in. and less in diameter: Brinell 207-286, or equivalent.
    - 6.1.2 Rounds over 2.5 in. in diameter: Brinell 149-217, or equivalent.
    - 6.1.3 Squares and Rectangles: Brinell 149-217, or equivalent.
    - 6.1.4 Forgings: Brinell 170 max, or equivalent.