

# AERONAUTICAL MATERIAL SPECIFICATION

Society of Automotive Engineers, Inc.  
29 West 39th Street  
New York City

## AMS 5628

Issued 5-1-48  
Revised

### STEEL, CORROSION RESISTANT 16Cr - 2Ni

1. **ACKNOWLEDGMENT:** A vendor shall mention this specification number in all quotations and when acknowledging purchase orders.
2. **FORM:** Bars, billets, and forgings.
3. **APPLICATION:** Primarily parts requiring corrosion resistance at operating temperatures up to 800 F.
4. **COMPOSITION:**

|            |               | Check Analysis |             |
|------------|---------------|----------------|-------------|
|            |               | Under Min      | or Over Max |
| Carbon     | 0.14 - 0.18   | 0.01           | 0.01        |
| Manganese  | 0.30 - 0.80   | 0.03           | 0.03        |
| Silicon    | 0.20 - 0.60   | 0.05           | 0.05        |
| Phosphorus | 0.040 max     | --             | 0.005       |
| Sulfur     | 0.030 max     | --             | 0.005       |
| Chromium   | 15.50 - 17.00 | 0.20           | 0.20        |
| Nickel     | 1.75 - 2.50   | 0.07           | 0.07        |

#### 5. **CONDITION:**

- 5.1 **Bars and Forgings:** Unless otherwise specified, bars and forgings shall be supplied in a machinable condition, essentially free from segregated ferrite when examined at 100X magnification, and as follows:
  - 5.1.1 **Bars 2.75 in. and less in diameter or distance between parallel sides:** Cold finished and having hardness of Brinell 228-285 or equivalent.
  - 5.1.2 **Hot-Finished Bars:** Having hardness of Brinell 228-277 or equivalent.
  - 5.1.3 **Forgings:** Having hardness of Brinell 228-277 or equivalent.
- 5.2 **Forging Stock:** Shall be supplied as ordered by the forging manufacturer.

#### 6. **TECHNICAL REQUIREMENT:**

- 6.1 **Hardenability:** Specimens with sections 1 in. in thickness, cut from a bar or forging, shall be placed in a furnace which is at 1800 F + 10, allowed to heat to 1800 F + 10, held at heat 25 min, and quenched in paraffin oil (100 S.U.S. at 100 F) at room temperature. Specimens shall have hardness not lower than Rockwell C40.
7. **QUALITY:** The material shall be uniform in quality and condition, clean, sound, and free from foreign materials and from internal and external defects detrimental to fabrication or to performance of parts.