

# AEROSPACE MATERIAL SPECIFICATIONS

## AMS 5743C

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

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STEEL BARS AND FORGINGS, CORROSION AND MODERATE HEAT RESISTANT  
15.5Cr - 4.5Ni - 2.9Mo - 0.10N

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 high strength and oxidation resistance up to 800 F (427 C) and where parts require welding during fabrication.
4. **COMPOSITION:**

	min	max
Carbon	0.10	0.15
Manganese	0.50	1.25
Silicon	--	0.50
Phosphorus	--	0.040
Sulfur	--	0.030
Chromium	15.00	16.00
Nickel	4.00	5.00
Molybdenum	2.50	3.25
Nitrogen	0.07	0.13

- 4.1 **Check Analysis:** Composition variations shall meet the requirements of the latest issue of AMS 2248.
5. **CONDITION:** Unless otherwise specified, material shall be supplied in the following condition:
  - 5.1 **Bars and Forgings:** Solution heat treated, sub-zero cooled, equalized, over-tempered, and descaled,  $\emptyset$  except as specified below.
    - 5.1.1 **Round Bars:** Shall be ground, turned, or polished after heat treatment.
    - 5.1.2 **Squares, Hexagons, and Octagons:** Shall be cold finished prior to heat treatment.
    - 5.1.3 **Flats:** Shall be hot finished prior to heat treatment.
  - 5.2 **Forging Stock:** As ordered by the forging manufacturer.
6. **TECHNICAL REQUIREMENTS:**
  - 6.1 **Heat Treatment:** Unless otherwise specified, the product shall be solution treated by heating to 1900 F  $\pm$  25 (1037.8 C  $\pm$  14), holding at heat for 1 - 3 hr, and quenching in water; cooled to not higher than -100 F (-73 C), held at this temperature for not less than 3 hr, and warmed in air to room temperature; equalized by heating to 1425 F  $\pm$  50 (773.9 C  $\pm$  28), holding at heat for not less than 3 hr, and cooling in air to not higher than 80 F (27 C); and overtempered by heating to 1075 F  $\pm$  25 (579.4 C  $\pm$  14) holding at heat for not less than 3 hr, and cooling in air.
  - 6.2 **Hardness:** Shall be not higher than Brinell 363 or equivalent.

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