

AEROSPACE MATERIAL SPECIFICATIONS

AMS 5610F

SOCIETY OF AUTOMOTIVE ENGINEERS, Inc.

485 Lexington Ave., New York, N.Y. 10017

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STEEL, CORROSION AND MODERATE HEAT RESISTANT
13Cr - Low Carbon (SAE 51416F)
Free Machining

- 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 requiring hardness up to Rockwell C 35 with corrosion resistance and oxidation resistance up to 1000 F (538 C), but useful at the higher temperatures only when stresses are low.
- 4. COMPOSITION:**

	min	max
Carbon	--	0.15
Manganese	--	1.25
Silicon	--	1.00
Phosphorus	--	0.040
Sulfur (See 4. 1)	--	0.030
Chromium	11.50 - 13.50	
Nickel	--	0.50
Molybdenum or Zirconium	--	0.60
Selenium (See 4. 1)	0.18 - 0.35	
Copper	--	0.50

- Ø 4.1 Selenium may be absent, but in such case sulfur shall be present in the range of 0.15 - 0.40%.
- 4.2 **Check Analysis:** Composition variations shall meet the requirements of the latest issue of AMS 2248.
- 5. CONDITION:**
 - 5.1 Bars:** Unless otherwise specified, all hexagons and other bars 2.75 in. and under in diameter or distance between parallel sides shall be cold finished. Bars, other than hexagons, over 2.75 in. in diameter or distance between parallel sides shall be hot finished. All bars shall have hardness not higher than Brinell 241 or equivalent.
 - 5.2 Forgings:** As ordered.
 - 5.3 Forging Stock:** As ordered by the forging manufacturer.
 - 6. TECHNICAL REQUIREMENTS:**
 - 6.1 Hardenability:** Material 0.375 in. and less in thickness and 0.375 in. thick specimens cut from larger bars and forgings, when placed in a furnace which is at 1825 F \pm 10 (996.1 C \pm 5.6), allowed to heat to 1825 F \pm 10 (996.1 C \pm 5.6), held at heat for 30 min., and cooled in still air, shall have hardness not lower than Rockwell C 35.
 - 7. QUALITY:** Material shall be uniform in quality and condition, clean, sound, and free from foreign materials and from internal and external imperfections, consistent with the type of steel involved, detrimental to fabrication or to performance of parts.