AERONAUTICAL MATERIAL SPECIFICATION

Society of Automotive Engineers, Inc. 29 West 39th Street New York City AMS 5641A

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STEEL, CORROSION RESISTANT 18.5Cr - 10Ni Free Machining, Swaging or Hot Upsetting

- 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 which may be swaged or hot upset during fabrication and on which the amount of machining warrants use of a free machining grade of steel. Corrosion resistance is similar to that of the standard 18-8 type.
- 4. COMPOSITION:

		Under Min	or Over Max
Carbon	0.12 max		0.01
Manganese	2.00 max		0.01
Silicon	0.70 max		0.05
Phosphorus	0.11 - 0.17	0.01	0.01
Sulfur	0.040 max		0.005
Chromium	17.00 - 20.00	0.20	0.20
Nickel	8.00 -12.00	0.15	0.15
Molybdenum	0.50 max		0.03
Selenium	0.15 - 0.30	0.03	0.03

- 5. CONDITION:
- 5.1 Bars and Forgings: Solution heat treated and free from continuous carbide network.
- 5.1.1 All hexagons, and other bars 2.75 in. and less in diameter or distance between parallel sides shall be cold finished.
- 5.1.2 Forgings shall not be supplied except when specified on the drawing or purchase order.
- 5.2 Forging Stock: As ordered by the forging manufacturer.
- 6. TECHNICAL REQUIREMENTS:
- 6.1 Tensile Properties (Bars):

Tensile Strength, psi Elongation, % in 4D 75,000 - 115,000 35 min

Check Analysis

6.2 Hardness (Forgings): Shall be Brinell 149-229, or equivalent.