SAE The Engineering Resource For Advancing Mobility
400 COMMONWEALTH DRIVE WARRENDALE PA 15096

AEROSPACE MATERIAL SPECIFICATION

AMS 5623

Issued 6-15-59
Revised 10-1-81

STEEL BARS AND FORGINGS, HIGH EXPANSION
5.5Mn - 9.5Mi (0.55 - 0.65C)
Annealed

This specification has been declared "NONCURRENT" by the Aerospace Materials Division, SAE, as of 10-1-81. It is recommended that this specification not be specified for new designs.

This cover sheet should be attached to the original issue of the subject specification.

Printed in U.S.A.

AERONAUTICAL
MATERIAL SPECIFICATIONS
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1. ACKNOWLEDGMENT: A vendor shall mention this specification number in all quotations and when acknowledging purchase orders.

2. FORM: Bars, forgings, and forging stock.

3. APPLICATION: Primarily for parts such as bushings and spacers requiring a coefficient of expansion approaching that of aluminum alloys.

4. COMPOSITION:

		Check Analysis Under Min or Over Max	
Carbon	0.55 - 0.65	0.02	0.02
Manganese	5.00 - 6.00	0.04	0.04
Silicon	1.00 max	--	0.05
Phosphorus	0.040 max	--	0.005
Sulfur	0.030 max	--	0.005
Nickel	8.50 - 10.50	0.15	0.15

5. CONDITION:

5.1 Bars and Forgings: Annealed.

5.1.1 Unless otherwise specified, all hexagons, and other bars 2.75 in. and under in diameter or distance between parallel sides shall be cold finished.

5.2 Forging Stock: As ordered by the forging manufacturer.

6. TECHNICAL REQUIREMENTS:

6.1 Hardness: Shall be Brinell 149 - 179, unless otherwise specified.

6.2 Coefficient of Thermal Expansion: Material shall be capable of showing a coefficient of thermal expansion not lower than 11.5×10^{-6} per deg Fahr over the temperature range 72 - 600 F.

7. QUALITY: Material shall be uniform in quality and condition, clean, sound, and free from foreign materials and from internal and external imperfections detrimental to fabrication or to performance of parts.

8. TOLERANCES: Unless otherwise specified, tolerances shall conform to the latest issue of AMS 2241 as applicable and as specified below:

8.1 All hexagons, and other bars 2.75 in. and less in diameter or distance between parallel sides, Table I.