

AERONAUTICAL MATERIAL SPECIFICATION

Society of Automotive Engineers, Inc.
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AMS5022 A

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STEEL - FREE CUTTING Manganese

1. ACKNOWLEDGMENT: A vendor must mention this specification number and its revision letter in all quotations and when acknowledging purchase orders.

2. FORM: Bars, billets, forgings, tubing, or as ordered.

3. COMPOSITION:

		<u>Individual Bar</u> <u>Check Analysis</u> <u>Over or Under</u>
Carbon	0.14 - 0.20	0.01
Manganese	1.00 - 1.30*	0.06
Phosphorus	0.045 max	0.008
Sulphur	0.08 - 0.13	--
Silicon	0.15 max	0.02

*When tubing is supplied, manganese up to 1.50 is permitted.

4. CONDITION: (a) Cold-finished bars and tubing must be suitable for high-speed automatic screw machines and shall have a hardness within the following limits for the size ranges indicated:

<u>Diameter or Thickness, inches</u>	<u>Brinell Hardness</u>
Up to 1	156 - 207
1 to 3	143 - 197
3 and over	116 - 163

(b) Forgings and hot-rolled bars shall be normalized to produce best machining qualities and shall have a hardness within the limits of Brinell 130-179.

(c) Stock ordered for forging must be supplied in the condition and finish ordered by the forging manufacturer.

5. QUALITY: This material shall be of uniform quality and condition, free from any material defects which affect its strength, machinability or use which is consistent with the type of steel involved. Material defects shall not be revealed during machining operations.

6. TOLERANCES: Tolerances for bars shall be in accordance with A.S.T.M. A108-36, unless otherwise ordered.

7. REPORTS: The manufacturer shall furnish three copies of a notarized report of the chemical composition of each heat and size in each shipment. This report shall include the purchase order number, heat number, material specification number, size, and quantity in each heat. If forgings are supplied, the part number and size of steel used to make the forgings shall also be included.