AERONAUTICAL MATERIAL SPECIFICATION

Society of Automotive Engineers, Inc.
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AMS 6442

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S T E E L
0.5Cr (0.95 - 1.10C)

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

2. FORM: Bars, billets, and forgings.

3. APPLICATION: Parts of small cross section, such as needle bearings, which require a through-hardening steel usually with hardness of approximately Rockwell C 60.

4. COMPOSITION:

		Check Analysis	
		Under Min or	Over Max
Carbon	0.95 - 1.10	0.03	0.03
Manganese	0.25 - 0.45	0.03	0.03
Silicon	0.20 - 0.35	0.02	0.02
Phosphorus	0.025 max	—	0.005
Sulfur	0.025 max	—	0.005
Chromium	0.40 - 0.60	0.03	0.03

5. CONDITION:

5.1 Bars: Unless otherwise specified, bars shall be supplied in a machinable condition, with microstructure of spheroidized cementite in ferrite matrix, and having hardness not higher than Brinell 207, except that if cold finished stock is ordered, hardness as high as Brinell 248 is permissible.

5.2 Forging Stock: Shall be supplied as ordered by the forging manufacturer.

5.3 Forgings: Shall be supplied as ordered.

6. DECARBURIZATION:

6.1 Bars ordered ground, turned or polished shall not be decarburized.

6.2 Allowable decarburization of bars ordered for redrawing, or for forging, or to definite microstructural requirements shall be as agreed upon by purchaser and vendor.

6.3 Decarburization of all bars to which 6.1 or 6.2 is not applicable shall be not greater than the following:

Nominal Diameter or Distance Between Parallel Sides Inches	Maximum Depth of Decarburization Inch
0.500 and under	0.015
Over 0.500 to 1.000, incl	0.020
Over 1.000 to 1.500, incl	0.025
Over 1.500 to 2.000, incl	0.030
Over 2.000 to 2.500, incl	0.035
Over 2.500 to 3.000, incl	0.040