



AEROSPACE MATERIAL

Society of Automotive Engineers, Inc.
TWO PENNSYLVANIA PLAZA, NEW YORK, N. Y. 1000

SPECIFICATION

AMS 5022G

Superseding AMS 5022F

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STEEL BARS, FORGINGS, AND TUBING, FREE CUTTING (0.14 - 0.20C) (SAE 1117)

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, forging stock, and mechanical tubing.

3. COMPOSITION:

| | min | max |
|------------|------|-------|
| Carbon | 0.14 | 0.20 |
| Manganese | 1.00 | 1.30 |
| Phosphorus | -- | 0.040 |
| Sulfur | 0.08 | 0.13 |

3.1 When agreed upon by purchaser and vendor, manganese up to 1.60 is permitted.

3.2 Check Analysis: Composition variations shall meet the requirements of the latest issue of \emptyset AMS 2259, paragraph titled "Carbon Steels, Bars, Forgings, and Forging Stock".

4. CONDITION: Unless otherwise ordered, the product shall be supplied in the following condition:

4.1 Bars and Mechanical Tubing 2.50 In. and Under in OD or Distance Between Parallel Sides: Cold drawn, suitable for machining on high speed automatic screw machines.

4.2 Bars and Mechanical Tubing Over 2.50 In. in OD or Distance Between Parallel Sides and Forgings: \emptyset Hot finished, and normalized or otherwise heat treated to produce best machining qualities.

4.3 Forging Stock: As ordered by the forging manufacturer.

5. TECHNICAL REQUIREMENTS:

5.1 Hardness: The product shall have hardness as follows or equivalent, when taken on the surface, except on rounds where a flat as necessary for Brinell accuracy may be made:

5.1.1 Bars:

| Nominal Diameter or Distance Between Parallel Sides Inches | Hardness, Brinell |
|--|-------------------|
| Up to 1.0, excl | 156 - 207 |
| 1.0 to 2.5, incl | 143 - 207 |
| Over 2.5 to 3.0, incl | 130 - 179 |
| 3.0 and over | 110 - 179 |

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