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AEROSPACE MATERIAL SPECIFICATION

AMS 7813

Issued 7-15-63
Revised 10-1-82

MOLYBDENUM ALLOY BARS 0.5Ti Arc Cast, Stress Relieved

This specification has been declared "NONCURRENT" by the Aerospace Materials Division, SAE, as of 3-28-73. It is recommended, therefore, that this specification not be specified for new designs.

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

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This specification has been declared "CANCELLED" by the Aerospace Materials Division, SAE, as of 10-1-82. By this action, subject specification number and title will be deleted from the active specification index of Aerospace Material Specifications.

This specification is under the jurisdiction of AMS Committee "G".

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AEROSPACE MATERIAL SPECIFICATIONS

AMS 7813

SOCIETY OF AUTOMOTIVE ENGINEERS, Inc. Two Pennsylvania Plaza, New York, N. Y. 10001

Issued 7-15-63
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MOLYBDENUM ALLOY BARS 0.5Ti Arc Cast, Stress Relieved

1. **ACKNOWLEDGMENT:** A vendor shall mention this specification number in all quotations and when acknowledging purchase orders.
2. **APPLICATION:** Primarily for parts requiring high modulus and uniform strength characteristics up to at least 2000 F (1095 C). Because of its excessive oxidation rate, this material is not recommended for use in oxidizing atmospheres at 1000 F (540 C) and above unless protected by a suitable coating.

3. COMPOSITION:

		Check Analysis	
		Under Min	Over Max
Molybdenum	99.35 min (1)		
Titanium	0.40 - 0.55	0.05	0.05
Carbon	0.010 - 0.030	0.005	0.005
Iron	0.020 max	-	0.002
Silicon	0.010 max	-	0.002
Nickel	0.010 max	-	0.001
Oxygen	0.0030 (30 ppm) max (2)	-	-
Nitrogen	0.0010 (10 ppm) max (2)	-	0.0005 (5 ppm)

- (1) Determination not required for routine acceptance.
- (2) Pending establishment of approved methods of analysis, deviation from these limits alone shall not be cause for rejection.

4. **CONDITION:** Hot-cold worked, descaled, and stress relieved or, if so specified, hot-cold worked, descaled, centerless ground, and stress relieved.
- 4.1 The surface finish of centerless ground bars shall be 90 microinches or smoother.

5. TECHNICAL REQUIREMENTS:

- 5.1 The product shall conform to the following requirements, and shall be capable of meeting these requirements after being heated to 2000 F $\pm$ 25 (1093.3 C $\pm$ 14), held at heat for 30 min. in a suitable, controlled atmosphere, and cooled rapidly.

5.1.1 Hardness:

Nominal Diameter Inches	Hardness, Vickers (10 kg) max
0.188 to 0.875, incl	310
Over 0.875 to 1.125, incl	290
Over 1.125 to 1.875, incl	285
Over 1.875 to 2.875, incl	280
Over 2.875 to 3.500, incl	275
Over 3.500 to 4.500, incl	270

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