

# AEROSPACE

# AMS 7900

## MATERIAL SPECIFICATIONS

SOCIETY OF AUTOMOTIVE ENGINEERS, Inc. 485 Lexington Ave., New York 17, N.Y.

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Revised

### VIRGIN BERYLLIUM BARS, RODS, AND SHAPES

1. **ACKNOWLEDGMENT:** A vendor shall mention this specification number in all quotations and when acknowledging purchase orders.
2. **FORM:** Bars, rods, and shapes.
3. **APPLICATION:** Primarily for parts requiring high strength-to-weight ratio and high modulus of elasticity.
4. **COMPOSITION:**

Beryllium Oxide	1.50 max
Iron	0.20 max
Aluminum	0.18 max
Carbon	0.15 max
Silicon	0.10 max
Magnesium	0.08 max
Other Impurities, each	0.04 max
Beryllium	98.20 min

5. **CONDITION:**

- 5.1 As hot pressed.

- 5.1.1 Unless otherwise specified, material shall be pressed from minus 200 mesh size virgin powder.

6. **TECHNICAL REQUIREMENTS:**

- 6.1 **Tensile Properties:**

Tensile Strength, psi	35,000 min
Yield Strength at 0.2% Offset, psi	27,000 min
Elongation, % in 4D	1 min

- 6.1.1 Tensile test specimens shall have gage diameter of 0.250 in. or as agreed upon. A strain rate of 0.003 to 0.007 in. per in. per min. shall be used.

- 6.2 **Density:** Shall be not less than 1.84 g per cu centimeter.

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 following:

- 8.1 **Bars:**

**REAFFIRMED** 10/91

Section 8.3 of the SAE Technical Board rules provides that: "All technical reports including standards approved and practices recommended, are advisory only. Their use by anyone engaged in industry or trade is entirely voluntary. There is no obligation to conform to or be guided by any technical report in formulating and applying technical reports, the Board and its Committees will not investigate or consider patents which may apply to the subject matter. Prospective users of the report are responsible for protecting themselves against liability for infringement of patents."

8.1.1 Thickness:

Nominal Thickness Inches	Tolerance, Inch Plus Only
1 and under	1/32 (See Note 1)
Over 1 to 2, incl	1/16
Over 2 to 6, incl	3/32
Over 6 to 8, incl	1/8
Over 8 to 36, incl	1/4

Note 1. If width or length exceeds 10 in., tolerance is 1/16.

8.1.2 Width and Length:

Nominal Width or Length Inches	Tolerance, Inch Plus Only
20 and under	1/8
Over 20 to 50, incl	1/4

8.2 Rods:8.2.1 Diameter:

Nominal Diameter Inches	Tolerance, Inch Plus Only
1 and under	1/64
Over 1 to 3, incl	1/32
Over 3 to 8, incl	1/16
Over 8 to 20, incl	3/32
Over 20 to 30, incl	3/16

8.2.2 Length (See Note 2):

Nominal Length Inches	Tolerance, Inch Plus Only
20 and under	1/8
Over 20 to 50, incl	1/4

Note 2. If length exceeds 30 times the diameter, tolerances shall be as agreed upon by purchaser and vendor.

8.3 Shapes: Tolerances shall be as agreed upon by purchaser and vendor.