

AEROSPACE MATERIAL SPECIFICATIONS

SOCIETY OF AUTOMOTIVE ENGINEERS, Inc.

485 Lexington Ave., New York, N.Y. 10017

AMS 7847

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Revised

TANTALUM ALLOY SHEET, STRIP, AND PLATE 10W

1. **ACKNOWLEDGMENT:** A vendor shall mention this specification number in all quotations and when acknowledging purchase orders.
2. **APPLICATION:** Primarily for parts and assemblies requiring exposure to ultra high temperatures. Applications in oxidizing atmospheres necessitate a protective coating.
3. **COMPOSITION:** The product shall conform to the following:

	min	max
Tungsten	8.5	- 11.0
Columbium	--	0.10
Molybdenum	--	0.030
Nickel	--	0.010
Iron	--	0.010
Oxygen	--	0.010 (100 ppm)
Carbon	--	0.010
Nitrogen	--	0.005 (50 ppm)
Hydrogen	--	0.001 (10 ppm)
Tantalum		remainder

- 3.1 Unless otherwise specified, metallic elements shall be determined spectrographically, carbon shall be determined conductometrically, oxygen shall be determined by the inert gas or vacuum fusion method, nitrogen shall be determined by the Kjeldahl method or by vacuum fusion, and hydrogen shall be determined by the vacuum fusion or vacuum extraction method.
4. **CONDITION:** Unless otherwise specified, material shall be cold rolled and fully annealed, having a surface appearance comparable to a corrosion resistant steel No. 2D finish.

5. **TECHNICAL REQUIREMENTS:**

- 5.1 **Tensile Properties:** These properties apply when the rate of strain is maintained at 0.003 - 0.007 in. per in. per in. per min. through the yield strength and at a rate of 0.05 in. per in. per min. above the yield strength. These properties apply to material 0.010 to 0.250, incl, in thickness.

Tensile Strength, psi	70,000 min
Yield Strength at 0.2% Offset or at 0.0083 in.	
in 2 in. Extension Under Load (E = 28,000,000), psi	60,000 min
Elongation, % in 1 in.	15 min

- 5.1.1 For widths 9 in. and over, tensile test specimens shall be taken with the axis perpendicular to the direction of rolling. For widths less than 9 in., tensile test specimens shall be taken with the axis parallel to the direction of rolling.
- 5.2 **Hardness:** Shall not be higher than Vickers 260 or equivalent.