AERONAUTICAL
MATERIAL SPECIFICATIONS

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AMS 7849

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Revised

TANTALUM SHEET AND STRIP

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

2. FORM: Sheet, strip, plate, and foil.

3. APPLICATION: Primarily for parts and assemblies requiring exposures at ultra high temperatures. Applications in oxidizing atmospheres necessitate a protective coating.

4. COMPOSITION:

Columbium	0.10 max
Iron	0.05 max
Carbon	0.04 max
Titanium	0.02 max
Zirconium	0.02 max
Silicon	0.02 max
Tungsten	0.01 max
Nickel	0.01 max
Oxygen	0.08 (800 ppm) max
Nitrogen	0.02 (200 ppm) max
Hydrogen	0.01 (100 ppm) max
Tantalum	remainder

5. CONDITION: Unless otherwise specified, material shall be supplied in the following conditions:

5.1 Sheet, Strip, and Foil: Cold rolled.

5.2 Plate: Cold rolled or hot-cold rolled, and descaled.

6. TECHNICAL REQUIREMENTS:

6.1 As Received: Tensile properties and hardness shall be as agreed upon by purchaser and vendor.

6.2 Properties after Heat Treatment: Material annealed under vacuum (less than 0.1 micron mercury) or inert atmosphere or with suitable protective coating shall conform to the following requirements.

Printed in U. S. A.

6.2.1 Tensile Properties: These properties apply to tensile test specimens taken from sheet, strip, and plate with the axis parallel to direction of rolling. Rate of strain shall be maintained at 0.003 - 0.007 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.

Tensile Strength, psi	30,000 min
Elongation, % in 2 in.	18 min

Note. These properties apply to material 0.010 in. or more in thickness.

6.2.2 Hardness: Shall be not higher than Vickers 150 or equivalent.

6.2.3 Bending: Material shall withstand, without cracking, bending at room temperature through the angle indicated below around a diameter equal to the nominal thickness of the material, with axis of bend parallel to the direction of rolling.

Nominal Thickness Inch	Angle deg, min
0.249 and under	180
Over 0.249 to 0.749, incl	90

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 latest issue of AMS 2242 as applicable.

9. REPORTS:

9.1 Unless otherwise specified, the vendor of the product shall furnish with each shipment three copies of a report of the results of tests for chemical composition of each heat (or batch if made by powder compacting) in the shipment and the results of tests on each thickness from each heat or batch to determine conformance to the technical requirements of this specification. This report shall include the purchase order number, heat or batch number, material specification number, thickness, size, and quantity from each heat or batch.

9.2 Unless otherwise specified, the vendor of finished or semi-finished parts shall furnish with each shipment three copies of a report showing the purchase order number, material specification number, contractor or other direct supplier of material, part number, and quantity. When material for making parts is produced or purchased by the parts vendor, that vendor shall inspect each lot of material to determine conformance to the requirements of this specification, and shall include in the report a statement that the material conforms, or shall include copies of laboratory reports showing the results of tests to determine conformance.