



AEROSPACE MATERIAL SPECIFICATION

AMS7849™**REV. F**

Issued 1960-06
Reaffirmed 2018-11
Revised 2026-02

Superseding AMS7849E

Tantalum Sheet, Strip, and Plate,
Annealed

(Composition similar to UNS R05210)

RATIONALE

AMS7849F results from a Five-Year Review and update of this specification with changes to prohibit unauthorized exceptions (see 3.4.1.1, 3.7, 4.4.3, 5.1.1, and 8.6), relocate Definitions (see 2.3), update Applicable Documents (see Section 2), and allow the use of the immediate prior specification revision (see 8.5).

1. SCOPE

1.1 Form

This specification covers tantalum in the form of sheet, strip, plate, and foil up through 0.1875 inch (4.75 mm), inclusive (see 8.7).

1.2 Application

Primarily for parts requiring exposure to ultrahigh temperatures. Applications in oxidizing atmospheres necessitate a protective coating.

2. APPLICABLE DOCUMENTS

The issue of the following documents in effect on the date of the purchase order forms a part of this specification to the extent specified herein. The supplier may work to a subsequent revision of a document unless a specific document issue is specified. When the referenced document has been cancelled and no superseding document has been specified, the last published issue of that document shall apply.

2.1 SAE Publications

Available from SAE International, 400 Commonwealth Drive, Warrendale, PA 15096-0001, Tel: 877-606-7323 (U.S. and Canada only) or +1 724-776-4970 (outside U.S. and Canada), www.sae.org.

AMS2242 Tolerances, Corrosion- and Heat Resistant Steel, Iron Alloy, Titanium, and Titanium Alloy Sheet, Strip, and Plate

AMS2809 Identification, Titanium and Titanium Alloy Wrought Products

AS7766 Terms Used in Aerospace Metals Specifications

SAE Executive Standards Committee Rules provide that: "This report is published by SAE to advance the state of technical and engineering sciences. The use of this report is entirely voluntary, and its applicability and suitability for any particular use, including any patent infringement arising therefrom, is the sole responsibility of the user."

SAE reviews each technical report at least every five years at which time it may be revised, reaffirmed, stabilized, or cancelled. SAE invites your written comments and suggestions.

Copyright © 2026 SAE International

All rights reserved. No part of this publication may be reproduced, stored in a retrieval system, transmitted, in any form or by any means, electronic, mechanical, photocopying, recording, or otherwise, or used for text and data mining, AI training, or similar technologies, without the prior written permission of SAE.

TO PLACE A DOCUMENT ORDER: Tel: 1-877-606-7323 (U.S. and Canada only)
Tel: 1-724-776-4970 (outside U.S. and Canada)
Fax: 724-776-0790
Email: CustomerService@sae.org
<http://www.sae.org>

SAE WEB ADDRESS:

Full document details: SAE AMS7849F

For more information on this standard, visit
<https://www.sae.org/standards/content/AMS7849F/>

Documents

Standard, visit Sharing Hub

2.2 ASTM Publications

Available from ASTM International, 100 Barr Harbor Drive, P.O. Box C700, West Conshohocken, PA 19428-2959, Tel: 610-832-9585, www.astm.org.

ASTM E8/E8M	Tension Testing of Metallic Materials
ASTM E112	Determining Average Grain Size
ASTM E290	Bend Testing of Material for Ductility
ASTM E384	Microindentation Hardness of Materials

2.3 Definitions

Terms used in AMS are defined in AS7766.

3. TECHNICAL REQUIREMENTS

3.1 Composition

Shall conform to the following percentages by weight shown in Table 1, determined by analytical methods approved by the purchaser (see 8.2):

3.1.1 Tantalum

Shall be not less than 99.85%.

3.1.2 Other Elements

Shall be not more than 0.15% (1500 ppm) total. Individual elements shall not exceed the following limits in parts per million (ppm).

Table 1 - Composition

Element	Nominal Thickness Up to 0.010 Inch (0.25 mm), excl	Nominal Thickness 0.010 Inch (0.25 mm) and Over
Columbium	1000	1000
Tungsten	300	300
Oxygen	150	100
Iron	100	100
Zirconium	100	100
Molybdenum	100	100
Carbon	75	50
Nitrogen	75	50
Titanium	50	50
Silicon	50	50
Nickel	50	50
Cobalt	20	20
Hydrogen	10	10

3.2 Condition

Cold rolled and annealed (see 8.3).