

AEROSPACE MATERIAL SPECIFICATION



AMS 4997B

Issued SEP 1977
Revised JAN 2003

Superseding AMS 4997A

Titanium Alloy Powder
5Al - 2Sn - 2Zr - 4Cr - 4Mo - 0.100
Premium Quality

(Composition similar to UNS R58650)

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1. SCOPE:

1.1 Form:

This specification covers a premium-quality titanium alloy in the form of prealloyed powder.

1.2 Application:

This product has been used typically for compaction into net or near net shapes and into forging stock in the form of billets or preforms for use in highly-stressed parts such as rotating parts of gas turbine engines.

2. APPLICABLE DOCUMENTS:

The following publications form a part of this specification to the extent specified herein. The latest issue of Aerospace Material Specifications (AMS) shall apply. The applicable issue of other documents shall be as specified in AMS 2350.

2.1 SAE Publications:

Available from Society of Automotive Engineers, Inc., 400 Commonwealth Drive, Warrendale, PA 15096.

2.1.1 Aerospace Material Specifications:

AMS 2249 Chemical Check Analysis Limits, Titanium and Titanium Alloys
AMS 2350 Standards and Test Methods
AMS 2635 Radiographic Inspection

2.2 ASTM Publications:

Available from American Society for Testing and Materials, 1916 Race Street, Philadelphia, PA 19103.

ASTM B214 Sieve Analysis for Granular Metal Powders
ASTM B215 Sampling Finished Lots of Metal Powders
ASTM B311 Density of Cemented Carbides
ASTM B527 Tap Density of Refractory Metals and Compounds by Tap-Pak Volumeter
ASTM E120 Chemical Analysis of Titanium and Titanium-Base Alloys

2.3 Government Publications:

Available from Commanding Officer, Naval Publications and Forms Center, 5801 Tabor Avenue, Philadelphia, PA 19120.

2.3.1 Federal Standards:

Federal Test Method Standard No. 151 - Metals; Test Methods

2.3.2 Military Standards:

MIL-STD-2073-1 Standard Practice for Military Packaging

3. TECHNICAL REQUIREMENTS:

3.1 Composition:

Shall conform to the following percentages by weight, determined by wet chemical methods in accordance with ASTM E120, by spectrographic methods in accordance with Federal Test Method Standard No. 151, Method 112, or by other analytical methods approved by purchaser, except that oxygen and hydrogen shall be determined on the panels of 3.4.3 by a vacuum or inert fusion method:

	min	max
Aluminum	4.50	5.50
Zirconium	1.50	2.50
Tin	1.50	2.50
Molybdenum	3.50	4.50
Chromium	3.50	4.50
Oxygen	0.08	0.12
Iron	--	0.30
Copper	--	0.10
Manganese	--	0.10
Carbon	--	0.05
Nitrogen	--	0.04 (400 ppm)
Hydrogen	--	0.0125 (125 ppm)
Yttrium	--	0.0050 (50 ppm)
Residual Elements, each (3.1.1)	--	0.10
Residual Elements, total (3.1.1)	--	0.30
Titanium	remainder	

3.1.1 Determination not required for routine acceptance.

3.1.2 Check Analysis: Composition variations shall meet the requirements of AMS 2249; no variation over maximum for yttrium will be permitted, unless otherwise agreed upon by purchaser and vendor.