



ASM Aerospace Specification Metals Inc.



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## Titanium Ti-3Al-2.5V, Beta-Anneal 950°C

**Subcategory:** Alpha/Near Alpha Titanium Alloy; Metal; Nonferrous Metal; Titanium Alloy

**Key Words:** Ti3Al2.5V, UNS R56320; ASTM Grade 9; Half 6-4; Tubing Alloy

### Component Wt. %

Al	3
Ti	94.5
V	2.5

### Material Notes:

Information provided by Allvac and the references.

**Applications:** Excellent cold formability, 20-50% higher tensile properties than CP titanium grades. Primarily used in aircraft hydraulic systems.

Physical Properties	Metric	English	Comments
Density	<u>4.48 g/cc</u>	0.162 lb/in <sup>3</sup>	

### Mechanical Properties

Hardness, Vickers	300	300	
Tensile Strength, Ultimate	<u>620 MPa</u>	89900 psi	
Tensile Strength, Yield	<u>540 MPa</u>	78300 psi	
Elongation at Break	<u>17 %</u>	17 %	
Modulus of Elasticity	<u>100 GPa</u>	14500 ksi	Alpha-annealed in tension.
Poisson's Ratio	0.3	0.3	alpha annealed
Charpy Impact	<u>44 J</u>	32.5 ft-lb	V-notch
Fracture Toughness	<u>70 MPa-m<sup>1/2</sup></u>	63.7 ksi-in <sup>1/2</sup>	kJ/m <sup>2</sup> for J(IC)
Shear Modulus	<u>44 GPa</u>	6380 ksi	Alpha-annealed

### Electrical Properties

Electrical Resistivity                      0.000127 ohm-cm                      0.000127 ohm-cm

### Thermal Properties

CTE, linear 20°C	<u>9.61 <math>\mu\text{m/m-}^\circ\text{C}</math></u>	5.34 $\mu\text{in/in-}^\circ\text{F}$	20-95°C
CTE, linear 250°C	<u>9.86 <math>\mu\text{m/m-}^\circ\text{C}</math></u>	5.48 $\mu\text{in/in-}^\circ\text{F}$	20-315°C; 9.67 in range 20-205°C
CTE, linear 500°C	<u>9.97 <math>\mu\text{m/m-}^\circ\text{C}</math></u>	5.54 $\mu\text{in/in-}^\circ\text{F}$	Average over the range 20-540°C
Specific Heat Capacity	<u>0.525 J/g-°C</u>	0.125 BTU/lb-°F	Typical value for titanium alloys.
Thermal Conductivity	<u>11.8 W/m-K</u>	81.9 BTU-in/hr-ft <sup>2</sup> -°F	Value at 315°C is 11.8 W/m-°C
Melting Point	<u>Max 1700 °C</u>	Max 3090 °F	Liquidus
Liquidus	<u>1700 °C</u>	3090 °F	
Beta Transus	<u>935 °C</u>	1720 °F	

### References for this datasheet.

Some of the values displayed above may have been converted from their original units and/or rounded in order to display the information in a consistent format. Users requiring more precise data for scientific or engineering calculations can click on the property value to see the original value as well as raw conversions to equivalent units. We advise that you only use the original value or one of its raw conversions in your calculations to minimize rounding error.