



ASM Aerospace Specification Metals Inc.



Contact Us

## Titanium Ti-6Al-6V-2Sn (Ti-6-6-2) STA 870°C/565°C

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

**Key Words:** Ti-662; Ti-6-6-2; UNS R56620

### Component Wt. %

Sn	2
Ti	86
V	6

### Material Notes:

Information provided by Allvac and the references. Solution Treated 870°C, Aged 565°C. Alpha-Beta alloy.

**Applications:** Airframes, jet engines, rocket engine cases, nuclear reactor components, ordnance components.

Physical Properties	Metric	English	Comments
Density	<u>4.54 g/cc</u>	0.164 lb/in <sup>3</sup>	

### Mechanical Properties

Hardness, Brinell	389	389	Estimated from Rockwell C.
Hardness, Knoop	425	425	Estimated from Rockwell C.
Hardness, Rockwell C	42	42	
Hardness, Vickers	407	407	Estimated from Rockwell C.
Tensile Strength, Ultimate	<u>1100 MPa</u>	160000 psi	
Tensile Strength, Yield	<u>1035 MPa</u>	150000 psi	
Elongation at Break	<u>12 %</u>	12 %	
Modulus of Elasticity	<u>112 GPa</u>	16200 ksi	
Poisson's Ratio	0.32	0.32	
Fatigue Strength	<u>1070 MPa</u>	155000 psi	10,000 cycles, Unnotched
Fatigue Strength	<u>190 MPa</u>	27600 psi	1E+7 cycles, Notched

Fatigue Strength	<a href="#">540 MPa</a>	78300 psi	10,000 cycles. $K_t$ (stress concentration factor) = 3.9
Fatigue Strength	<a href="#">680 MPa</a>	98600 psi	Unnotched Sample 10,000,000 Cycles
Fracture Toughness	<a href="#">60 MPa-m<sup>1/2</sup></a>	54.6 ksi-in <sup>1/2</sup>	Plane-Strain
Shear Modulus	<a href="#">45 GPa</a>	6530 ksi	

### Electrical Properties

Electrical Resistivity	<a href="#">0.000157 ohm-cm</a>	0.000157 ohm-cm
------------------------	---------------------------------	-----------------

### Thermal Properties

CTE, linear 20°C	<a href="#">9 μm/m-°C</a>	5 μin/in-°F	
CTE, linear 250°C	<a href="#">9.4 μm/m-°C</a>	5.22 μin/in-°F	Average over the range 20-315°C
CTE, linear 500°C	<a href="#">9.5 μm/m-°C</a>	5.28 μin/in-°F	Average over the range 20-540°C
Specific Heat Capacity	<a href="#">0.67 J/g-°C</a>	0.16 BTU/lb-°F	
Thermal Conductivity	<a href="#">6.6 W/m-K</a>	45.8 BTU-in/hr-ft <sup>2</sup> -°F	
Melting Point	1627 - 1649 °C	2960 - 3000 °F	
Solidus	<a href="#">1627 °C</a>	2960 °F	
Liquidus	<a href="#">1649 °C</a>	3000 °F	
Maximum Service Temperature, Air	<a href="#">315 °C</a>	599 °F	Subject to Tensile Embrittlement
Beta Transus	<a href="#">945 °C</a>	1730 °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.