



ASM Aerospace Specification Metals Inc.

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Titanium Ti-6Al-6V-2Sn (Ti-6-6-2) Annealed

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

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

Component Wt. %

Al	6
Sn	2
Ti	86
V	6

Material Notes:

Information provided by Allvac and the references. Annealed 730°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 ³	

Mechanical Properties

Hardness, Brinell	351	351	Estimated from Rockwell C.
Hardness, Knoop	382	382	Estimated from Rockwell C.
Hardness, Rockwell C	38	38	
Hardness, Vickers	367	367	Estimated from Rockwell C.
Tensile Strength, Ultimate	<u>1050 MPa</u>	152000 psi	
Tensile Strength, Yield	<u>980 MPa</u>	142000 psi	
Elongation at Break	<u>14 %</u>	14 %	
Modulus of Elasticity	<u>110.3 GPa</u>	16000 ksi	
Ultimate Bearing Strength	<u>2100 MPa</u>	305000 psi	e/D = 2
Bearing Yield Strength	<u>1350 MPa</u>	196000 psi	e/D = 2
Poisson's Ratio	0.32	0.32	

Charpy Impact	<u>16 J</u>	11.8 ft-lb	V-notch
Fatigue Strength	<u>140 MPa</u>	20300 psi	Notched 10,000,000 Cycles
Fatigue Strength	<u>190 MPa</u>	27600 psi	100,000 cycles. K_t (stress concentration factor) = 3
Fracture Toughness	<u>60 MPa-m^{1/2}</u>	54.6 ksi-in ^{1/2}	K_{Ic}
Shear Modulus	<u>45 GPa</u>	6530 ksi	Aged sample.

Electrical Properties

Electrical Resistivity	<u>0.000157 ohm-cm</u>	0.000157 ohm-cm
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Thermal Properties

CTE, linear 20°C	<u>9 μm/m-°C</u>	5 μ in/in-°F	20-100°C
CTE, linear 250°C	<u>9.4 μm/m-°C</u>	5.22 μ in/in-°F	Average over the range 20-315°C
CTE, linear 500°C	<u>9.5 μm/m-°C</u>	5.28 μ in/in-°F	Average over the range 20-540°C
Specific Heat Capacity	<u>0.67 J/g-°C</u>	0.16 BTU/lb-°F	
Thermal Conductivity	<u>6.6 W/m-K</u>	45.8 BTU-in/hr-ft ² -°F	
Melting Point	1627 - 1649 °C	2960 - 3000 °F	
Solidus	<u>1627 °C</u>	2960 °F	
Liquidus	<u>1649 °C</u>	3000 °F	
Maximum Service Temperature, Air	<u>315 °C</u>	599 °F	Subject to tensile embrittlement above 315°C
Beta Transus	<u>945 °C</u>	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.