



ASM Aerospace Specification Metals Inc.

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Titanium Ti-15V-3Cr-3Al-3Sn ST 850°C (1560°F), Aged 545°C

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

**Key Words:** Titanium Ti-15-3

**Component Wt. %**

Al	3
Cr	3
Sn	3
Ti	76
V	15

**Material Notes:**

ST=solution Treated

Physical Properties	Metric	English	Comments
Density	<u>4.76 g/cc</u>	0.172 lb/in <sup>3</sup>	

**Mechanical Properties**

Hardness, Brinell	297	297	Estimated from Rockwell C.
Hardness, Knoop	322	322	Estimated from Rockwell C.
Hardness, Rockwell C	31	31	
Hardness, Vickers	410	410	
Tensile Strength, Ultimate	<u>1110 MPa</u>	161000 psi	
Tensile Strength, Yield	<u>1010 MPa</u>	146000 psi	
Elongation at Break	<u>13 %</u>	13 %	
Modulus of Elasticity	<u>100 GPa</u>	14500 ksi	Sample was ST 790°C, Aged 510°C
Compressive Yield Strength	<u>1130 MPa</u>	164000 psi	
Ultimate Bearing Strength	<u>2240 MPa</u>	325000 psi	e/D = 2
Bearing Yield Strength	<u>1790 MPa</u>	260000 psi	e/D = 2

Poisson's Ratio	0.33	0.33	Typical for beta titanium alloy.
Fatigue Strength	<a href="#">170 MPa</a>	24700 psi	at 1E+7 cycles. $K_t$ (stress concentration factor) = 3.0
Fatigue Strength	<a href="#">690 MPa</a>	100000 psi	1E+7 cycles, Unnotched
Fracture Toughness	<a href="#">105 MPa-m<sup>1/2</sup></a>	95.6 ksi-in <sup>1/2</sup>	K(C)
Shear Modulus	<a href="#">37.6 GPa</a>	5450 ksi	Calculated from typical values.
Shear Strength	<a href="#">720 MPa</a>	104000 psi	Ultimate shear strength

### Electrical Properties

Electrical Resistivity	<a href="#">0.00014 ohm-cm</a>	0.00014 ohm-cm
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### Thermal Properties

CTE, linear 20°C	<a href="#">8.5 μm/m-°C</a>	4.72 μin/in-°F	20-95°C
CTE, linear 250°C	<a href="#">9.1 μm/m-°C</a>	5.06 μin/in-°F	
CTE, linear 500°C	<a href="#">9.8 μm/m-°C</a>	5.44 μin/in-°F	
Specific Heat Capacity	<a href="#">0.5 J/g-°C</a>	0.12 BTU/lb-°F	at 20°C. Value at 400°C is 0.649 J/g-°C
Thermal Conductivity	<a href="#">8.08 W/m-K</a>	56.1 BTU-in/hr-ft <sup>2</sup> -°F	
Beta Transus	<a href="#">760 °C</a>	1400 °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.