



## ASM Aerospace Specification Metals Inc.

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### Titanium Ti-8Al-1Mo-1V (Ti-8-1-1)

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

**Key Words:** Ti8Al1Mo1V, UNS R54810; Ti-811

#### Component Wt. %

Al	8
Mo	1
Ti	90
V	1

#### Material Notes:

Information provided by Allvac and the references.

**Applications:** Fan & compressor blades, discs, spacers, seals, rings. Excellent creep resistance.

Physical Properties	Metric	English	Comments
Density	<u>4.37 g/cc</u>	0.158 lb/in <sup>3</sup>	
<b>Mechanical Properties</b>			
Hardness, Brinell	334	334	Estimated from Rockwell C.
Hardness, Knoop	363	363	Estimated from Rockwell C.
Hardness, Rockwell C	36	36	
Hardness, Vickers	349	349	Estimated from Rockwell C.
Tensile Strength, Ultimate	<u>937 MPa</u>	136000 psi	
Tensile Strength, Yield	<u>910 MPa</u>	132000 psi	
Elongation at Break	<u>18 %</u>	18 %	
Reduction of Area	<u>47 %</u>	47 %	
Modulus of Elasticity	<u>120 GPa</u>	17400 ksi	
Poisson's Ratio	0.32	0.32	duplex annealed
Fatigue Strength	<u>689 MPa</u>	99900 psi	50,000 Cycles

Fracture Toughness	<u>151 MPa-m<sup>1/2</sup></u>	137 ksi-in <sup>1/2</sup>	K(C)
Fracture Toughness	<u>82 MPa-m<sup>1/2</sup></u>	74.6 ksi-in <sup>1/2</sup>	K(IC)
Shear Modulus	<u>46 GPa</u>	6670 ksi	

### Electrical Properties

Electrical Resistivity	<u>0.000197 ohm-cm</u>	0.000197 ohm-cm	
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### Thermal Properties

CTE, linear 20°C	<u>8.5 μm/m-°C</u>	4.72 μin/in-°F	
CTE, linear 250°C	<u>9.2 μm/m-°C</u>	5.11 μin/in-°F	
CTE, linear 500°C	<u>10.1 μm/m-°C</u>	5.61 μin/in-°F	
Specific Heat Capacity	<u>0.502 J/g-°C</u>	0.12 BTU/lb-°F	
Thermal Conductivity	<u>6 W/m-K</u>	41.6 BTU-in/hr-ft <sup>2</sup> -°F	
Melting Point	<u>Max 1540 °C</u>	Max 2800 °F	Liquidus
Liquidus	<u>1540 °C</u>	2800 °F	
Beta Transus	<u>1040 °C</u>	1900 °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.