



ASM Aerospace Specification Metals Inc.



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## TIMETAL® 62S Titanium Alloy (Ti-6Al-2Fe-0.1Si); Alpha-Beta Forged, RA

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

Component	Wt. %
Al	5.5 - 6.5
C	Max 0.08
Fe	1.3 - 2
H	Max 0.0125
N	Max 0.04
O	0.15 - 0.2
Si	0.07 - 0.13
Ti	90.7 - 93

### Material Notes:

Titanium content above is calculated as the remainder and may not reflect the actual range.

Low Cost, Multipurpose Alloy. Tensile/toughness property data below for Alpha-Beta Forged, RA material.

**Features:** Properties and processing characteristics equivalent to or better than TIMETAL 6-4, but with significantly higher stiffness (elastic modulus). Due to the use of iron as the beta stabilizer, the alloy has lower formulation costs than TIMETAL 6-4. The combination of reasonable cost and excellent mechanical properties make TIMETAL 62S a practical substitute for many engineering materials.

Typical heat treatment for this alloy: Mill Anneal at 760°C for 1-2 hrs, air cool

Data provided by TIMET.

Physical Properties	Metric	English	Comments
Density	<u>4.44 g/cc</u>	0.16 lb/in <sup>3</sup>	Typical
<b>Mechanical Properties</b>			
Tensile Strength, Ultimate	<u>1014 MPa</u>	147000 psi	Typical Transverse
Tensile Strength, Ultimate	<u>986 MPa</u>	143000 psi	Typical Longitudinal

Tensile Strength, Yield	<a href="#">945 MPa</a>	137000 psi	Typical 0.2% Yield Stress, Longitudinal
Tensile Strength, Yield	<a href="#">972 MPa</a>	141000 psi	Typical 0.2% Yield Stress, Transverse
Elongation at Break	<a href="#">16 %</a>	16 %	Typical Transverse in 2 in (50 mm)
Elongation at Break	<a href="#">18 %</a>	18 %	Typical Longitudinal in 2 in (50 mm)
Reduction of Area	<a href="#">30 %</a>	30 %	Transverse
Reduction of Area	<a href="#">37 %</a>	37 %	Longitudinal
Modulus of Elasticity	<a href="#">128 GPa</a>	18600 ksi	Typical
Fracture Toughness	<a href="#">48 MPa-m<sup>1/2</sup></a>	43.7 ksi-in <sup>1/2</sup>	K(IC); L-T Orientation
Fracture Toughness	<a href="#">52 MPa-m<sup>1/2</sup></a>	47.3 ksi-in <sup>1/2</sup>	K(IC); T-L Orientation

### Electrical Properties

Electrical Resistivity	<a href="#">0.000163 ohm-cm</a>	0.000163 ohm-cm
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### Thermal Properties

CTE, linear 20°C	<a href="#">8.6 µm/m-°C</a>	4.78 µin/in-°F	at 20°C
CTE, linear 250°C	<a href="#">9.7 µm/m-°C</a>	5.39 µin/in-°F	at 250°C
CTE, linear 500°C	<a href="#">10.6 µm/m-°C</a>	5.89 µin/in-°F	at 500°C
Specific Heat Capacity	<a href="#">0.5 J/g-°C</a>	0.12 BTU/lb-°F	
Thermal Conductivity	<a href="#">8.6 W/m-K</a>	59.7 BTU-in/hr-ft <sup>2</sup> -°F	
Beta Transus	<a href="#">1024 °C</a>	1880 °F	

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.