



ASM Aerospace Specification Metals Inc.



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

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 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 ³	Typical
Mechanical Properties			
Tensile Strength, Ultimate	<u>1000 MPa</u>	145000 psi	Typical Transverse
Tensile Strength, Ultimate	<u>986 MPa</u>	143000 psi	Typical Longitudinal

Tensile Strength, Yield	945 MPa	137000 psi	Typical 0.2% Yield Stress, Longitudinal
Tensile Strength, Yield	952 MPa	138000 psi	Typical 0.2% Yield Stress, Transverse
Elongation at Break	11 %	11 %	Typical Transverse in 2 in (50 mm)
Elongation at Break	15 %	15 %	Typical Longitudinal in 2 in (50 mm)
Reduction of Area	16 %	16 %	Longitudinal
Reduction of Area	20 %	20 %	Transverse
Modulus of Elasticity	128 GPa	18600 ksi	Typical
Fracture Toughness	64 MPa-m^{1/2}	58.2 ksi-in ^{1/2}	K(IC); T-L Orientation
Fracture Toughness	67 MPa-m^{1/2}	61 ksi-in ^{1/2}	K(IC); L-T Orientation

Electrical Properties

Electrical Resistivity	0.000163 ohm-cm	0.000163 ohm-cm
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Thermal Properties

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