

TIMET TIMETAL® 5111 Titanium Alloy (Ti-5Al-1Sn-1Zr-1V-0.8Mo; ASTM Grade 32)

Category : Metal , Nonferrous Metal , Titanium Alloy , Alpha/Near Alpha Titanium Alloy

Material Notes:

High Toughness, Heavy Section Weldable Alloy Features: A near alpha alloy with excellent weldability, seawater stress corrosion cracking resistance and high dynamic toughness. It is ideally suited for applications in marine environments where toughness and corrosion resistance are essential. The alloy has been produced on a commercial scale. It was developed jointly with the Navy, and has been selected as the material of choice for a submarine application. Data provided by TIMET.

Order this product through the following link:

http://www.lookpolymers.com/polymer_TIMET-TIMETAL-5111-Titanium-Alloy-Ti-5Al-1Sn-1Zr-1V-08Mo-ASTM-Grade-32.php

Physical Properties	Metric	English	Comments
Density	4.43 g/cc	0.160 lb/in ³	Typical

Mechanical Properties	Metric	English	Comments
Tensile Strength, Ultimate	862 MPa	125000 psi	Typical
Tensile Strength, Yield	758 MPa @Strain 0.200 %	110000 psi @Strain 0.200 %	Typical
Elongation at Break	15 %	15 %	Typical
Reduction of Area	30 %	30 %	
Modulus of Elasticity	107 - 114 GPa	15500 - 16500 ksi	Typical
Bend Radius, Minimum	5.0 t	5.0 t	Typical; on 0.078 in (2 mm) sheet

Thermal Properties	Metric	English	Comments
CTE, linear	8.20 μm/m-°C	4.56 μin/in-°F	
	@Temperature 50.0 °C	@Temperature 122 °F	
	9.30 μm/m-°C	5.17 μin/in-°F	
	@Temperature 250 °C	@Temperature 482 °F	
Specific Heat Capacity	0.533 J/g-°C	0.127 BTU/lb-°F	
Thermal Conductivity	7.50 W/m-K	52.0 BTU-in/hr-ft ² -°F	
Beta Transus	980 °C	1800 °F	

Component Elements Properties	Metric	English	Comments
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Aluminum, Al Component Elements Properties	4.5 - 5.5 % Metric	4.5 - 5.5 % English	Comments
Carbon, C	<= 0.080 %	<= 0.080 %	
Hydrogen, H	<= 0.015 %	<= 0.015 %	
Iron, Fe	<= 0.25 %	<= 0.25 %	
Molybdenum, Mo	0.60 - 1.2 %	0.60 - 1.2 %	
Nitrogen, N	<= 0.030 %	<= 0.030 %	
Oxygen, O	<= 0.11 %	<= 0.11 %	
Silicon, Si	0.060 - 0.14 %	0.060 - 0.14 %	
Tin, Sn	0.60 - 1.4 %	0.60 - 1.4 %	
Titanium, Ti	88.5 - 93 %	88.5 - 93 %	Calculated as remainder
Vanadium, V	0.60 - 1.4 %	0.60 - 1.4 %	
Zirconium, Zr	0.60 - 1.4 %	0.60 - 1.4 %	

Electrical Properties	Metric	English	Comments
Electrical Resistivity	0.000153 ohm-cm	0.000153 ohm-cm	

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