

TIMET TIMETAL® 679 (Ti-11Sn-5Zr-2.25Al-1Mo-0.2Si) Titanium Alloy; Quenched & Aged

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

Material Notes:

High-Temperature, High-Strength Creep Resistant Alloy Industry Specifications: USA Aerospace: AMS 4974. Features: TIMETAL 679 has excellent tensile strength and is creep resistant up to 450°C. It is a three-phase alloy at room temperature, having an alpha + beta + compound field and a maximum temperature of 925°C is recommended. It is nonmagnetic. Typical heat treatment for this alloy: Solution heat treatment: 900°C for 30 min, air cool. Aging heat treatment: 500°C for 24 hrs, air cool. Data provided by TIMET.

Order this product through the following link:

http://www.lookpolymers.com/polymer_TIMET-TIMETAL-679-Ti-11Sn-5Zr-225Al-1Mo-02Si-Titanium-Alloy-Quenched-Aged.php

Physical Properties	Metric	English	Comments
Density	4.84 g/cc	0.175 lb/in ³	Typical

Mechanical Properties	Metric	English	Comments
Tensile Strength, Ultimate	>= 1110 MPa	>= 161000 psi	
Tensile Strength, Yield	>= 970 MPa @Strain 0.200 %	>= 141000 psi @Strain 0.200 %	
Elongation at Break	>= 8.0 %	>= 8.0 %	
Reduction of Area	43 %	43 %	
Modulus of Elasticity	105 - 110 GPa	15200 - 16000 ksi	Typical
Fatigue Strength	610 - 670 MPa	88500 - 97200 psi	Limit; test specifics not reported
Shear Modulus	46.0 GPa	6670 ksi	

Thermal Properties	Metric	English	Comments
CTE, linear	8.30 µm/m-°C @Temperature 20.0 °C	4.61 µin/in-°F @Temperature 68.0 °F	
Thermal Conductivity	8.30 W/m-K	57.6 BTU-in/hr-ft ² -°F	
Beta Transus	950 °C	1740 °F	

Component Elements Properties	Metric	English	Comments
Aluminum, Al	2.0 - 2.5 %	2.0 - 2.5 %	
Hydrogen, H	<= 0.0125 %	<= 0.0125 %	

Component Elements Properties	Metric	English	Comments
Molybdenum, Mo	0.80 - 1.2 %	0.80 - 1.2 %	
Oxygen, O	<= 0.20 %	<= 0.20 %	
Silicon, Si	0.10 - 0.50 %	0.10 - 0.50 %	
Tin, Sn	10.5 - 11.5 %	10.5 - 11.5 %	
Titanium, Ti	77.9 - 82.6 %	77.9 - 82.6 %	Calculated as remainder
Zirconium, Zr	4.0 - 6.0 %	4.0 - 6.0 %	

Electrical Properties	Metric	English	Comments
Electrical Resistivity	0.000160 ohm-cm	0.000160 ohm-cm	

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