TIMET TIMETAL® 550 (Ti-4Al-4Mo-2Sn) Titanium Alloy Solution Treated

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

Material Notes:

High-Strength Forging AlloyIndustry Specifications: Germany Aerospace: 3.7184. France: T-A4DE. UK Aerospace Specifications BS TA. 45, 46, 47, 48,49, 50, 51, 57.Features: TIMETAL 550, like TIMETAL 6-4, is readily forgeable and is generally used in a heat treated condition. It has superior room and elevated temperature tensile strength and fatigue strength compared to TIMETAL 6-4, and is creep resistant up to 400°C. It has applications in the aerospace industry, both as aeroengine and airframe components. Typical applications include compressor discs and flap tracks. The alloy has also found applications in high performance automotive engines. The alloy may be welded using controlled electron beam or laser welding techniques. Slow welding speeds and low cooling rates are necessary to achieve adequate weld properties. In sheet form, the alloy has good superplastic properties and excellent balance of strength and toughness.Typical heat treatment for this alloy: Solution heat treatment: 900°C for 1 hr per 25 mm section, air cool. Aging 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-550-Ti-4Al-4Mo-2Sn-Titanium-Alloy-Solution-Treated.php

Physical Properties	Metric	English	Comments
Density	4.60 g/cc	0.166 lb/in³	Typical

Mechanical Properties	Metric	English	Comments
Tensile Strength, Ultimate	1080 MPa	157000 psi	Typical
Tensile Strength, Yield	930 MPa @Strain 0.200 %	135000 psi @Strain 0.200 %	Typical
Elongation at Break	12 %	12 %	Typical
Reduction of Area	20 %	20 %	
Modulus of Elasticity	110 - 120 GPa	16000 - 17400 ksi	Typical
Fatigue Strength	540 - 650 MPa	78300 - 94300 psi	Limit; test specifics not reported
Fracture Toughness	57.0 - 70.0 MPa-m½	51.9 - 63.7 ksi-in½	K(IC); Typical Forging (heat treatment unspecified); Tangential
	65.0 - 69.0 MPa-m½	59.2 - 62.8 ksi-in½	K(IC); Typical Bar (heat treatment unspecified); Longitudinal

Thermal Properties	Metric	English	Comments
CTE, linear	8.80 µm/m-°C @Temperature 20.0 - 100 °C	4.89 µin/in-°F @Temperature 68.0 - 212 °F	
	9.70 µm/m-°C	5.39 µin/in-°F	

Thermal Properties	Metric	English	Comments
	@Temperature 20.0 - 500 °C	@ Temperature 68.0 - 932 °F	
Specific Heat Capacity	0.634 J/g-°C	0.152 BTU/lb-°F	
Thermal Conductivity	7.52 W/m-K	52.2 BTU-in/hr-ft²-°F	
Maximum Service Temperature, Air	400 °C	752 °F	Good tensile and creep to 400°C
Beta Transus	975 °C	1790 °F	

Component Elements Properties	Metric	English	Comments
Aluminum, Al	3.0 - 5.0 %	3.0 - 5.0 %	
Hydrogen, H	<= 0.0125 %	<= 0.0125 %	
Iron, Fe	<= 0.20 %	<= 0.20 %	
Molybdenum, Mo	3.0 - 5.0 %	3.0 - 5.0 %	
O + 2N	<= 0.27 %	<= 0.27 %	
Silicon, Si	0.30 - 0.70 %	0.30 - 0.70 %	
Tin, Sn	1.5 - 2.5 %	1.5 - 2.5 %	
Titanium, Ti	85.9 - 92.2 %	85.9 - 92.2 %	Calculated as remainder

Contact Songhan Plastic Technology Co.,Ltd.

Website : www.lookpolymers.com
Email : sales@lookpolymers.com
Tel : +86 021-51131842
Mobile : +86 13061808058
Skype : lookpolymers
Address : United North Road 215,Fengxian District, Shanghai City,China