TIMET TIMETAL® 230 Titanium Alloy (Ti-2.5Cu); Annealed

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

Material Notes:

Cold Formable Medium-Strength AlloyIndustry Specifications: Germany Aerospace: 3.7124. France: T-U2. UK Aerospace Specifications BA TA. 21, 22, 23.Features: This binary, age hardening alloy combines the easy formability and weldability of commercially pure titanium with improved mechanical properties, particularly at temperatures up to 350°C. It is used in the annealed condition as sheet, forgings, and extrusions for fabricating components such as bypass ducts of gas-turbine engines. Its used spread to the airframe industry, following the development of an ageing treatment which raises room-temperature tensile properties by about 25%, and nearly doubles the elevated temperature properties. Such a material is particularly attractive since it can be formed in the soft condition, thus lowering fabrication costs. It is nonmagnetic.Typical heat treatment for this alloy: Anneal at 790°C for 1 hour and air cool. Solution heat treatment at 805°C for 1 hour with a rapid air cool. Aging heat treatment at 400°C for 8-24 hours with an air cool and then for 8 hours at 475°C with air cool.Data provided by TIMET.

Order this product through the following link:
http://www.lookpolymers.com/polymer_TIMET-TIMETAL-230-Titanium-Alloy-Ti-25Cu-Annealed.php

Physical Properties	Metric	English	Comments
Density	4.56 g/cc	0.165 lb/in³	Typical

Mechanical Properties	Metric	English	Comments
Tensile Strength, Ultimate	620 MPa	89900 psi	Typical
Tensile Strength, Yield	510 MPa @Strain 0.200 %	74000 psi @Strain 0.200 %	Typical
Elongation at Break	25 %	25 %	Typical
Reduction of Area	>= 35 %	>= 35 %	
Modulus of Elasticity	105 - 120 GPa	15200 - 17400 ksi	Typical
Fatigue Strength	280 MPa @# of Cycles 1.00e+7	40600 psi @# of Cycles 1.00e+7	Rod, smooth, direct stress
	370 MPa @# of Cycles 1.00e+7	53700 psi @# of Cycles 1.00e+7	Rod, rotating bend
	390 MPa @# of Cycles 1.00e+7	56600 psi @# of Cycles 1.00e+7	Sheet; Reverse Bend; (UTS = 864 MPa)
Bend Radius, Minimum	2.5 t @Thickness 2.00 mm	2.5 t @Thickness 0.0787 in	Typical; sheet

Thermal Properties	Metric	English	Comments
CTE, linear	9.00 µm/m-°C @Temperature 20.0 - 100 °C	5.00 µin/in-°F @Temperature 68.0 - 212 °F	
Thermal Conductivity	12.97 W/m-K	90.01 BTU-in/hr-ft²-°F	
Maximum Service Temperature, Air	350 °C	662 °F	
Beta Transus	895 °C	1640 °F	

Component Elements Properties	Metric	English	Comments
Carbon, C	<= 0.080 %	<= 0.080 %	
Copper, Cu	2.0 - 3.0 %	2.0 - 3.0 %	
Hydrogen, H	<= 0.010 %	<= 0.010 %	
Iron, Fe	<= 0.20 %	<= 0.20 %	
Nitrogen, N	<= 0.030 %	<= 0.030 %	
Oxygen, O	<= 0.20 %	<= 0.20 %	
Titanium, Ti	96.1 - 98 %	96.1 - 98 %	Calculated as remainder

Electrical Properties	Metric	English	Comments
Electrical Resistivity	0.0000650 ohm-cm	0.0000650 ohm-cm	

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