TIMETAL® 75A CP Titanium (ASTM Grade 4)

Subcategory: Metal; Nonferrous Metal; Titanium Alloy; Unalloyed/Modified Titanium

Key Words: UNS R50700

Component	Wt. %
C	Max 0.08
Fe	Max 0.5
H	Max 0.015
N	Max 0.05
O	Max 0.4
Ti	Min 98.6

Material Notes:

Titanium content above is calculated as the remainder and may not reflect the actual range.

Commercially Pure Titanium.

Industry Specifications: USA Aerospace: AMS 4901. Germany Engineering: 3.7065. Germany Aerospace: 3.7064. France: T-60. UK Aerospace Specification BS TA. 6.

Features: The mechanical properties of CP titanium are influenced by small additions of oxygen and iron. By careful control of these additions, the various grades of commercially pure titanium are produced to give properties suited to different applications. TIMETAL 75A is equivalent to ASTM Grade 4. It has the highest strength of the four ASTM commercially pure titanium grades in addition to good ductility and moderate formability. The benefits of the good strength to weight ratio of TIMETAL 75A are retained at moderate temperatures. It has good impact properties at low temperatures. It can be satisfactorily welded, machined, cold worked, hot worked, and cast. It is nonmagnetic.

Typical heat treatment for this alloy: Anneal at 700°C for 1 hour and air cool. Stress Relieve at 500°C for 30 mins and air cool.

Data provided by TIMET.

Physical Properties	Metric	English	Comments
Density	4.51 g/cc	0.163 lb/in^3	Typical
Mechanical Properties			

Tensile Strength, Ultimate	680 MPa	98600 psi	Typical
Tensile Strength, Yield	560 MPa	81200 psi	Typical 0.2% Proof Stress
Elongation at Break	23 %	23 %	Typical
Reduction of Area	46 %	46 %	Typical
Modulus of Elasticity	105 - 120 GPa	15200 - 17400 ksi	Typical
Fatigue Strength	376 MPa	54500 psi	Smooth, Kt=1

Electrical Properties

Electrical Resistivity	6e-005 ohm-cm	6e-005 ohm-cm	

Thermal Properties

CTE, linear 20°C	8.6 µm/m-°C	4.78 µin/in-°F	20-100°C
CTE, linear 250°C	9.5 µm/m-°C	5.28 µin/in-°F	20-300°C
CTE, linear 500°C	9.7 µm/m-°C	5.39 µin/in-°F	20-425°C
Thermal Conductivity	16.95 W/m-K	118 BTU-in/hr-ft²-°F	
Maximum Service Temperature, Air	425 °C	797 °F	Continuous
Maximum Service Temperature, Air	540 °C	1000 °F	Intermittant
Beta Transus	950 °C	1740 °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 consistant 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.