

Products & Sizes

Plate	Bar
0.250" - 1.000"	0.125" - 3.000"

Ti-6AL-4V ELI Chemical Composition

	Element	Min	Max
Ti	Titanium	88.0	91.0
Al	Aluminum	5.5	6.5
V	Vanadium	3.5	4.5
N	Nitrogen		0.03
C	Carbon		0.08
O	Oxygen		0.013
Fe	Iron		0.25
H	Hydrogen		0.0125
-	Res. Each		0.1
-	Res. Total		0.4

Industry Standards

- ASM/MIL-81200
- GE Aircraft Engine (GT193)

Industry Applications

- Medical Implants and Instrumentation
- Maxillofacial, dental, spinal, trauma, orthopedic and extremities
- Air frames
- Jet and engine rocket components
- Pressure vessels
- Fasteners
- Prosthetic Implants
- Geothermal-well casings
- Automotive components
- Sports equipment

Related Industries

[Aerospace](#)
[Defense](#)
[Medical](#)
[Space](#)

Physical Properties

Physical Property	T (°F)	T (°C)	Value	Value (SI)
Density	72	22	0.163 lb in ⁻³	4.42 g cm ⁻³
Beta Transus	1825±25	966±14	-	-
Melting (liquidus) Point	3000-3020±25	1650-1660±14	-	-
Thermal Conductivity	68	20	3.8 Btu hr ⁻¹ °F ⁻¹	6.6 W m ⁻¹ K ⁻¹
Mil Annealed	600	315	6.1 Btu hr ⁻¹ °F ⁻¹	10.6 W m ⁻¹ K ⁻¹
Specific Heat	68	20	0.140 Btu lb ⁻¹ °F ⁻¹	0.580 J g ⁻¹ K ⁻¹
	800	425	0.160 Btu lb ⁻¹ °F ⁻¹	0.670 J g ⁻¹ K ⁻¹
	1600	870	0.220 Btu lb ⁻¹ °F ⁻¹	0.930 J g ⁻¹ K ⁻¹
Electrical Resistivity	32	0	66 μΩ·in	1.68 μΩ·m
	600	315	73 μΩ·in	1.86 μΩ·m
	1200	650	74 μΩ·in	1.89 μΩ·m
Magnetic Permeability			1.00005 at 20 oersteds	
Mean Coefficient of Thermal Expansion	32-212	0-100	5.0 x 10 ⁻⁶ in in ⁻¹ °F ⁻¹	9.0x10 ⁻⁶ m m ⁻¹ °C ⁻¹
	70-800	20-425	5.2 x 10 ⁻⁶ in in ⁻¹ °F ⁻¹	9.4x10 ⁻⁶ m m ⁻¹ °C ⁻¹
	70-1200	20-650	5.4 x 10 ⁻⁶ in in ⁻¹ °F ⁻¹	9.7x10 ⁻⁶ m m ⁻¹ °C ⁻¹
Young's Modulus	68	20	15.5-17.7 Msi	107-122 GPa
	450	230	13.8-16.2 Msi	95-111 GPa
Shear Modulus	68	20	5.9-6.5 Msi	41-45 GPa
Poisson's Ratio	68	20	.31	.31

Mechanical Properties

Product	Condition	Specification	Dir.	Temp, °F (°C)	UTS, ksi (MPa)	.02% YS, ksi (MPa)	%EI	%RA
0.025-1.000 Sheet & Plate	St	ASTM B265	L & LT	68 (20)	120 (828)	110 (759)	10	-
≤3.00 RD or Thk.	Annealed	ASTM B348	L	68 (20)	120 (828)	110 (759)	10	25
≥1.75 RD or Thk.	Annealed	ASTM F136	L	68 (20)	120 (828)	115 (759)	10	25
1.75-2.50	Annealed	ASTM F136	L & LT	68 (20)	120 (860)	110 (760)	8	20
2.50-4.00	Annealed	ASTM F136	L, LT & ST	68 (20)	120 (825)	115 (760)	8	15