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TI-6AL-4V ELI

AMS 4907 / 4930 / 6932

Ti -6AL-4V is a general purpose alpha-beta alloy. The ELI variant is available for fracture critical applications.

Nominal Composition

Ti	Titanium – 88-91%
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%

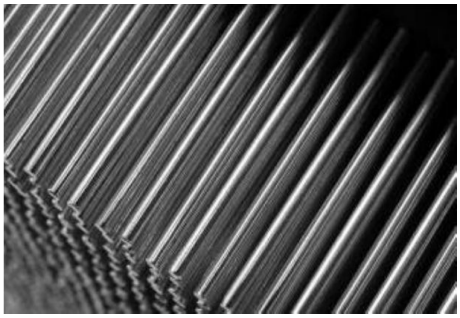
Percent by weight, maximum unless a range is listed.

Standard Inventory Specifications

- AMS: 4907, 4930, 6932
- UNS R56401
- ASTM B 265 GR 23
- ASTM B348 GR 23
- ASTM F 136
- MIL-T-9046
- MIL-T-9047
- ASM/MIL 81200

Features

- Moderately high tensile strength
- Good fatigue strength
- Intermediate fracture toughness
- Highly resistant to general corrosion in sea water
- Reasonable properties are retained up to 350°C (660°F).
- Hardenable in sections up to 1” thick



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Or click here to view our product page and request a quote on Ti-6al-4v-ELI

Industry Applications

- Air frames
- Jet and engine rocket components
- Pressure vessels
- Fasteners
- Prosthetic Implants
- Geothermal-well casings
- Automotive components
- Sports equipment

Mechanical Properties

Product	Condition	Specification	Dir.	Temp°F (°C)	UTS Ksi (MPa)	0.2% YS Ksi (MPa)	%El	%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

Physical Properties

Physical Property	T (°F)	T(°C)	Value	Value
Density	72	22	0.163 lb in^{-3}	4.42 g cm^{-3}
Beta Transus	1825±25	966±14		
Melting Point	3000-3020±25	1650-1660±14		
Thermal Conductivity Mil Annealed	68 600	20 315	3.8 Btu $hr^{-1}°F^{-1}$ 6.1 Btu $hr^{-1}°F^{-1}$	6.6 W m^{-1} K^{-1} 10.6 W m^{-1} K^{-1}
Specific Heat	68 800 1600	20 425 870	0.140 Btu $lb^{-1}°F^{-1}$ 0.160 Btu $lb^{-1}°F^{-1}$ 0.220 Btu $lb^{-1}°F^{-1}$	0.580 J $g^{-1}K^{-1}$ 0.670 J $g^{-1}K^{-1}$ 0.930 J $g^{-1}K^{-1}$
Electrical Resistivity	32 600 1200	0 315 650	66 µΩ·in 73 µΩ·in 74µΩ·in	1.68 µΩ·m 1.86 µΩ·m 1.89 µΩ·m
Magnetic Permeability			1.00005 at 20 oersteds	
Mean Coefficient of Thermal Expansion	32-212 70-800 70-1200	0-100 20-425 20-650	5.0 x 10^{-6}in in $^{-1}°F^{-1}$ 5.2 x 10^{-6}in in $^{-1}°F^{-1}$ 5.4 x 10^{-6}in in $^{-1}°F^{-1}$	9.0x10^{-6}m $m^{-1}°C^{-1}$ 9.4x10^{-6}m $m^{-1}°C^{-1}$ 9.7x10^{-6}m $m^{-1}°C^{-1}$
Young's Modulus	68 450	20 230	15.5-17.7 Msi 13.8-16.2 Msi	107-122 GPa 95-111 GPa
Shear Modulus	68	20	5.9-6.5 Msi	41-45 GPa
Poisson's Ratio	68	20	0.31	0.31