

Low interstitial version of Ti-6Al-4V, for maximum toughness. Preferred for marine and cryogenic applications. This grade is normally used in the annealed condition. Ti-6Al-4V is the preferred choice for the medical implant field.

Stress relief 900-1200°F 1 to 4 hours, air cool. Duplex anneal, bar and forgings: Solution anneal 50-100°F below the beta transus, hold 1 hour minimum, air cool. Then reheat within the range 1300-1400°F, hold 1 hour minimum, air cool. Stress-relief annealing is performed after welding.

Specifications

UNS: R56401 W. Nr./EN: 3.7164 AMS: 4907, 4930, 4931, 4956, 6932 ASTM: B 348, F 136 ASME: SB-348 ISO: 5832-3

Chemical Composition, %

	Al	V	Fe	O	C	N	H	Y	Others, Each	Others, total	Ti
MIN	5.5	3.5	—	—	—	—	—	—	—	—	—
MAX	6.5	4.5	0.25	0.13	0.08	0.03	0.0125	0.005	0.1	0.4	balance

Features

- Resistant to bodily fluids
- Resistant to a variety of corrosive environments
- Freedom from chloride stress corrosion cracking
- Good strength and toughness over a wide temperature range
- High resistance to erosion corrosion and corrosion fatigue
- Useful resistance to dry chlorine, fluorine, hydrogen chloride and hydrogen fluoride gases

Applications

- Medical and dental implants
- Cryogenics
- Aerospace
- Chemical processing

Physical Properties

Density: 0.160 lb/in³ Melting Range: 2370-2460°F Beta Transus: 1790+25°F

Temperature, °F	68-212	68-600	68-1000	68-1200	68-1500
Coefficient* of Thermal Expansion, in/in°F x 10 ⁻⁶	9.18	9.54	10.08	10.44	10.8

Mechanical Properties

Typical hardness Rockwell: C 30-34 Specific minimums, AMS 4931, bar and forging

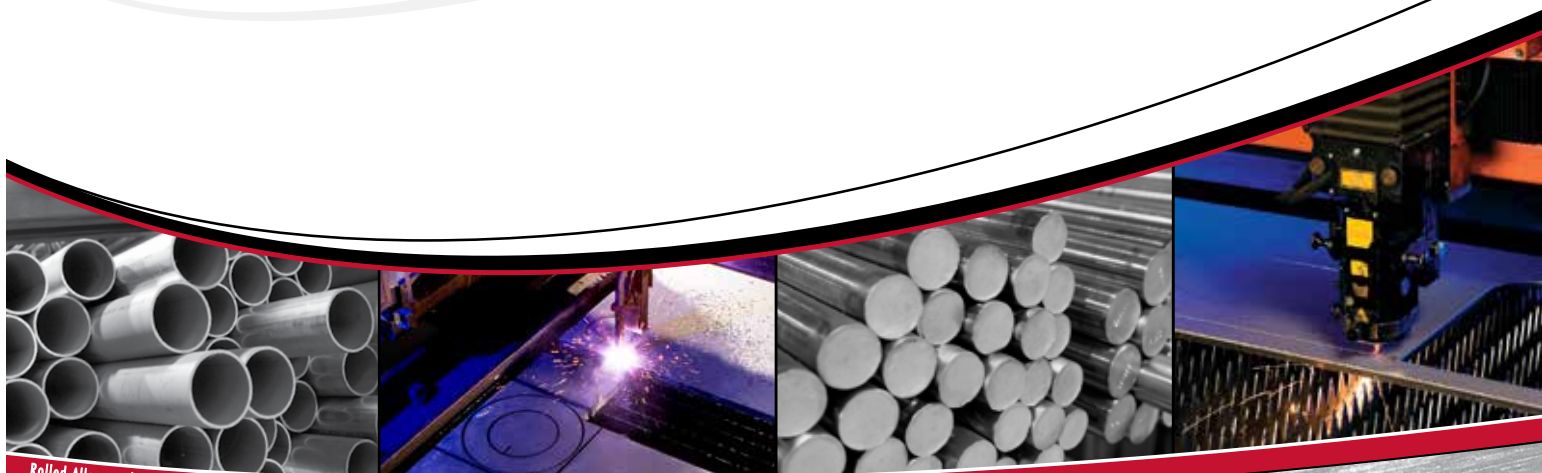
Representative Tensile Properties, Sheet

Diameter, in	< 3.0	< 3.0 < 4.0	< 4.0 < 6.0
Tensile Strength, ksi	125	123	120
0.2 % Yield Strength, ksi	115	110	110
Elongation, % *L (**ST)	10 (8)	10 (8)	8 (8)
Reduction of Area, % *L (**ST)	25 (-)	20 (15)	15 (15)

* Longitudinal ** Short Transverse

Typical Elevated Temperature Properties

Temperature, °F	93 (200)	149 (300)	204 (400)	260 (500)
Ultimate Tensile Strength, ksi	843.3 (121)	772.2 (112)	723.9 (105)	657.7 (98)
0.2 % Yield Strength, ksi	710.2 (103)	641.2 (93)	586.1 (85)	531.0 (77)
Elongation, %	13	15	16	16



Rolled Alloys and RA are registered trademarks of Rolled Alloys



The Global Leader in Specialty Metals