TITANIUM

ALLOY Ti 6AL/4V

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TUBING APPLICATIONS

Alloy Ti 6Al/4V (UNS 56400)

Ti 6Al/4V is the most widely used of all the alpha-beta titanium alloys accounting for more than 50% of total titanium usuage. It is typically used in the annealed condition, at service temperatures through 400°C (750°F). Ti 6Al/4V is welded with matching or with ELI filler wire.

Ti 6Al/4V is significantly stronger than commercially pure titanium while having the same stiffness and thermal properties excluding thermal conductivity, which is about 60% lower in Grade 5 Ti than in CP Ti. Amongst its many advantages, it is heat treatable.

This grade is an excellent combination of strength, corrosion resistance, weld and fabricability. In consequence, its uses are numerous such as for military aircraft or turbines. It is also used in surgical implants. Generally, it is used in applications up to 400°C to improve ductility and toughness in cold-worked condition.

AVAILABLE TUBE PRODUCT FORMS
STRAIGHT
SEAMLESS

TYPICAL MANUFACTURING SPECIFICATIONS
ASTMF1472
ASTM F620
ASTM 543
Also individual customer specifications

TYPICAL APPLICATIONS
SURGICAL IMPLANTS
AEROSPACE TUBING
PRESSURE TUBING

INDUSTRIES PREDOMINANTLY USING THIS GRADE
MEDICAL
AEROSPACE
OIL AND GAS
CHEMICAL PROCESSES

Technical Data

MECHANICAL PROPERTIES				
Temper	Annealed		Cold-worked	
Tensile Rm	116	ksi (min)	150	ksi (min)
Tensile Rm	800	MPa (min)	1034	MPa (min)
R.p. 0.2% Yield	102	ksi (min)	135	ksi(min)
R.p. 0.2% Yield	700	MPa (min)	930	MPa (min)
Elongation (2" or 4D gl)	10	% (min)	8	% (min)

PHYSICAL PROPERTIES (Room Temperature)		
Specific Heat (0-100°C)	565	J.kg-1.°K-1
Thermal Conductivity	6.7	W.m -1.°K-1
Thermal Expansion	8.6	mm/m/°C
Modulus Elasticity	120	GPa
Electrical Resistivity	17.1	µohm/cm
Density	4.43	g/cm3

CHEMICAL COMPOSITION (% by weight)		
Element	Min	Max
Al	5.5	6.5
C	-	0.08
Fe	-	0.25
H	-	0.015
N	-	0.05
Ti	Balance	
O	-	0.2
Y	3.5	4.5

AMETEK® SPECIALTY METAL PRODUCTS