SPECIALTY METALS

Common Name: Ti-6Al-4V Titanium Grade 5
Ti-6-4

UNS Number: R56400

General Information: Ti-6Al-4V alloy is the most widely used titanium alloy of the alpha-plus-beta class, and is also the most common of all titanium alloys. The alloy is castable and is utilized "as cast" in sporting goods. The wrought material is used in aerospace, medical, and other applications where moderate strength, good strength to weight, and favorable corrosion properties are required. The alloy is available as castings, wire, bar, plate, sheet, forgings, rings, and billet.

Common Specifications:

Specification:	Product Form:
AMS 4911	Strip, Sheet, and Plate, Annealed
AMS 4920	Forgings, Alpha-Beta or Beta Processed, Annealed
AMS 4928	Bar, Wire, Forgings, Ring, Annealed
AMS 4965, AMS 4963, and AMS 4967 (Capable of)	Bar, Wire, Forgings, Ring, Solution Treated & Aged
AMS-T-9047	
ASTM B348 (Grade 5)	Bar and Billet, Annealed
ASTM B367 (Grade 5)	Castings
ASTM F1472	Wrought Alloy for Surgical Implants
AWS A5.16 (ERTi-5)	Weld Wire

Chemistry Requirements: % Maximum unless given as a range.

N	C	H	Fe	O	Al	V	Y	Ti
0.05	0.08	0.125	0.40	0.2	5.5-6.75	3.5-4.5	0.005	Balance

Note: Chemical requirements are not consistent between specifications. Check referenced specifications.

Minimum Tensile Properties:

Condition	UTS ksi (Mpa)	0.2%YS ksi (MPA)	% El.	% RA*
As specified (shape)	130 (895)	120 (828)	10	25
Solution Treated and Aged	160 (1103)	150 (1034)	10	20
Castings	130 (895)	120 (828)	6	10

Note: Mechanical properties vary with diameter. Check referenced specifications.

Typical Tensile Properties:

Condition	UTS ksi (Mpa)	0.2%YS ksi (MPA)	% El.	% RA
Annealed	145 (1000)	132 (910)	18	40
Solution Treated and Aged	161 (1110)	141 (970)	15	45
Castings	145 (1000)	130 (895)	5	15

Note: Typical properties are not to be utilized as a requirement, but are only listed for guidance. These properties may or may not be attainable in all circumstances.

** %Ra not required by all specification*

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