

**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 favourable corrosion properties are required. The alloy is available as castings, wire, bar, plate, sheet, forgings, rings, and billet.

**Main uses:** **ASTM B348** **Industrial sector**  
**ASTM F136** **Medical sector**  
**AMS 4928** **Aerospace sector**

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