

Titanium Alloys

Alloy Ti 3Al/2.5V (UNS R56320)

Ti 3Al/2.5V alloy is a near alpha, alpha-beta alloy, sometimes referred to as "half-6-4." It offers 20 to 50% higher tensile strength than the commercially pure titanium at room and elevated temperatures. It is much more amenable to cold working than Ti 6Al/4V alloy and can be cold worked 75 to 85% to result in moderately high strength and good ductility. Furthermore, it is weldable as the commercially pure grades and has excellent resistance to torsion and corrosion.

Therefore, it is used principally as tubing in aircraft hydraulic systems and as foil in aircraft honeycomb panels. Its applications include aerospace parts, sport equipments, medical and dental implants.

Available tube product forms

- STRAIGHT
- COILED
- SEAMLESS
- SEAM WELDED AND COLD REDRAWN
- SEAM WELDED, COLD REDRAWN AND ANNEALED

Typical Applications

- ARCHITECTURE
- MEDICAL
- MARINE
- PROCESSING & CHLORATE MANUFACTURING
- DIMENSIONAL STABLE ANODES
- DESALINATION PLANTS

Typical manufacturing specifications

- AMS 4943
- AMS 4944
- AMS 4945
- AMS 4946
- ASTM B338

Individual customer specifications.

Industries predominantly using this grade

- CHEMICAL PROCESSES
- MEDICAL
- AEROSPACE
- AUTOMOTIVE

Technical Data

Mechanical Properties				
Temper	Annealed		CWSR	
Tensile Rm	90	ksi (min)	125	ksi (min)
Tensile Rm	620	MPa (min)	860	MPa (min)
R.p. 0.2% Yield	70	ksi (min)	105	ksi (min)
R.p. 0.2% Yield	485	MPa (min)	725	MPa (min)
Elongation (2" or 4D gl)	15	% (min)	10	% (min)

Physical Properties (Room Temperature)		
Specific Heat (0-100°C)	427	J.kg ⁻¹ .°K ⁻¹
Thermal Conductivity	7.6	W.m ⁻¹ .°K ⁻¹
Thermal Expansion	7.9	mm/m/°C
Modulus Elasticity	107	GPa
Electrical Resistivity	12.6	μohm/cm
Density	4.48	g/cm ³

Chemical Composition (% by weight)		
Element	Min	Max
Al	2.5	3.5
C	-	0.05
Fe	-	0.3
H	-	0.013
N	-	0.020
O	-	0.120
Ti	Balance	
V	2	3
Y	-	0.005