

A near-alpha alloy, primarily used for high strength and toughness, with good creep resistance up to 1000°F. Forging and machining characteristics similar to those of Ti 6Al-4V. Applications include compressor components, hot airframe skin, and engine afterburner structures. The weldability of Ti 6-2-4-2 is fair, using AMS 4952 weld wire. Several different treatments are available.

**Sheet & Strip under 0.1875" thickness:** Duplex anneal: 1650±25°F, 30±3 minutes, air cool, followed by 1450±25°F 15±2 minutes, air cool. Triplex anneal: 1650°F ½ hour, air cool, followed by 1450°F ¼ hour, air cool, 1100°F 2 hours air cool.

**Plate 0.1875 inch thickness and over:** Duplex anneal: 650±25°F 60±5 minutes, air cool, followed by 1100±25°F 8 hours ±15 minutes, air cool. Triplex anneal: 1650°F ½ hour, air cool, followed by 1450°F ¼, air cool, 1100°F 2 hours air cool.

**Bar and Forgings:** Duplex anneal: Solution anneal 25-50°F below. Beta transus 1 hour, air cool or faster, 1100°F 8 hours air cool.

### Specifications

UNS: UNS R54620 W. Nr./EN: 3.7145 AMS: 4919, 4975, 4976, T-9046 MIL: T-9047, T-81556, F-82142

### Chemical Composition, %

	Al	Sn	Zr	Mo	C	N	H	O	Si	Fe	Y	Others, Each	Others, total	Ti
MIN	5.5	1.8	3.6	1.8	—	—	—	—	0.06	—	—	—	—	—
MAX	6.5	2.2	4.4	2.2	0.05	0.05	0.015	0.12	0.1	0.25	0.005	0.1	0.3	balance

### Features

- Machinability similar to austenitic stainless steels
- Easily welded if proper precautions are taken to prevent oxygen, nitrogen and hydrogen contaminations
- Long term stability for temperatures up to 800°F

### Applications

- Compressor discs, blades
- Airframe structure, skin
- Engine afterburner components
- Hush kits

### Physical Properties

Density: 0.160 lb/in<sup>3</sup> Beta Transus: 1825±25°F Thermal Conductivity: 4.00 Btu • hr/ft<sup>2</sup> • hr°F  
Coefficient of Thermal Expansion: 32-212°F 4.3 x10<sup>-6</sup> in/in°F Modulus of Elasticity: 16.5x10<sup>6</sup> psi

### Mechanical Properties

#### Minimum Tensile Properties, AMS 4919, Duplex Annealed

Thickness, in	0.025≤0.062	>0.062≤1.000	>1.000≤3.000
Tensile Strength, ksi	135,000	135,000	135,000
0.2% offset Yield Strength, ksi	125,000	125,000	125,000
Elongation, %	8	10	10

#### Bend Factors, Duplex Annealed, AMS 4919

Nominal Thickness, in	≤0.070	>0.070<0.1875
Factor, 105° Bend	9	10



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