

Titanium Alloy

TA6V

Ti-6Al-4V

SPECIFICATIONS

UNS: R56400

TYPICAL MECHANICAL PROPERTIES

- Annealed condition:
 - Tensile test at ambient temperature:
 - UTS: 1100 N/mm²
 - 0.2 % Yield strength: 1040 N/mm²
 - Elongation (5d): 10 %

COMPOSITION

| | |
|---------------|-------|
| Aluminum..... | 6.00 |
| Vanadium..... | 4.00 |
| Carbon..... | <0.08 |
| Iron..... | <0.30 |
| Oxygen..... | <0.20 |
| Nitrogen..... | <0.07 |
| Titanium..... | Base |

APPLICATIONS

- Aerospace industry: discs, compressor blades, structural parts, fasteners for low and high temperature environments, etc.
- Chemical industries

CHARACTERISTICS

- This titanium alloy has good resistance to fatigue, crack propagation, corrosion and creep (up to 300°C).
- Alpha-beta titanium alloy.

HEAT TREATMENT

- Anneal (Normally this alloy is used in the annealed condition):
 - Heat to 700/750 °C
 - Hold 2 or 4 hours depending on section
 - Air cool
- Heat treated (for section < 40 mm):
 - Solution treatment
 - Heat to 825/950 °C water cool
 - Ageing
 - In the range 450-590°C, depending on properties required

PHYSICAL PROPERTIES

- Density: 4.43
- Electrical resistivity in $\mu\Omega.cm^2$
 - at 20°C: 170
- Mean coefficient of expansion in m/m.°C:
 - between 20°C and 200°C: 9.0×10^{-6}
- Absolute magnetic permeability in H/m: 1.26×10^{-6}
- Modulus of elasticity in N/mm²:
 - at 20°C: 110×10^3
- Critical points:
 - Beta Transus: 1000°C
- Torsional modulus in N/mm²: 45000
- Thermal conductivity in W.m/m².°C:
 - at 20°C: 6.7

FORGING

- Breakdown temperature: 1050°C - 1100°C
- Finishing temperature: 850°C - 950°C

Contact:

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The data provided in this document represent typical or average values rather than maximum or minimum guaranteed values. The applications indicated for the grades described are given as guidance only in order to help the reader in his personal assessment. Please note that these do not constitute a guarantee whether implicit or explicit as to whether the grade selected is suited to specific requirements. Aubert & Duval's liability shall not under any circumstances extend to product selection or to the consequences of that selection.