

AMS 4928, BS TA11, TITANIUM 6AL4V BAR

BS TA11 TITANIUM 6AL4V BAR

6AL4V, also known as titanium alloy 6-4, is a high-performance material which is known for its exceptional strength to weight ratio, corrosion resistance, and biocompatibility. The typical applications of Titanium 6AL4V are aerospace for structural components, motorsport and medical implants.

At its core, 6AL4V is a titanium alloy, composed of titanium alloyed with 6% aluminium and 4% vanadium, the addition of aluminium enhances the alloy's strength and resistance to creep deformation, while vanadium further bolsters its strength and improves its resistance to corrosion and oxidation.

A notable characteristic of the 6AL4V alloy is its exceptional strength-to-weight ratio. This means that it is particularly well suited for applications where minimizing weight is critical, as is often the case in the aerospace sector. Though relatively lightweight, 6AL4V demonstrates impressive mechanical properties that allow it to endure substantial forces and stresses without any detriment to its structural integrity.

Furthermore, 6AL4V has exceptional corrosion resistance, this characteristic makes it a preferred choice for marine applications, chemical processing equipment, and medical implants, where resistance to bodily fluids and biological environments is essential.

A key attribute of the 6AL4V (AMS 4928) alloy is its notable biocompatibility. When combined with its impressive strength properties and robust corrosion resistance, this biocompatibility makes 6AL4V highly suitable for biomedical applications. As a result, Ti-6Al-4V is used widely in the production of orthopaedic implants, dental implants, and a diverse range of surgical instrumentation.

Specific Gravity	
4.484 g/cm ³	
Typical Applications	Related Specifications
Medical Implants	AMS 2631C
Turbine Blades	AMS 4928
Fasteners	AMS 4965
Motor Racing applications	AMS 4967
Aircraft Structural Components	AMS 6931
	AMS STD 2154
	AMS T 9047
	ASTM B348
	BS TA11
	TA28
	ISO 5832-3
	W.Nr 3.7164/5

ASTM F136
UNS R56400
MSRR 8652
MSRR 8614

Chemical Composition (Wt %)

	C	Al	N	O	Ti	V	Fe	H	Y
Min	–	5.5	–	–	–	3.50	–	–	–
Max	0.08	6.75	0.05	0.2	Bal	4.50	0.25	0.01	0.005

Typical Mechanical Properties in the Annealed condition

0.2% Proof Stress	Tensile Strength	Elongation	Reduction of area	Hardness
MPA	MPA	%	%	HRC
Min	Min	Min	Min	
862	900	10	25	36

* This data has been supplied in good faith and is indicative only. It has been provided for general information purposes only and is not to be relied upon in place of the full specification. Mechanical properties can vary considerably with different supply conditions such as heat treatment or temper and product dimensions.

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