

Ti6Al4V-ELI (Grade 23 & Grade 5-ELI)

Smiths Advanced Metals

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Ti6Al4V-ELI Titanium Alloy

Ti6Al4V-ELI is a premium titanium alloy specifically developed for demanding medical and dental implant applications.

Based on the well-known Grade 5 titanium composition, this Extra Low Interstitial (ELI) version offers enhanced purity and improved biocompatibility, making it highly suitable for long-term implantation within the human body.

The alloy combines exceptional mechanical strength with outstanding resistance to corrosion and fatigue, ensuring reliable performance in critical surgical and dental environments. Its refined chemical composition helps minimise impurities, supporting superior biological compatibility and excellent material integrity.

Ti6Al4V-ELI is widely used in the manufacture of orthopaedic and dental components, including bone screws, trauma plates, surgical fixation devices, and dental implant abutments. Its excellent machinability and precision tolerances also make it ideal for high-accuracy CNC and sliding head machining operations.

Benefits

- Biocompatible chemical analysis
- Excellent corrosion resistance
- High strength-to-weight ratio
- Tight diameter tolerances (h6 and h7)



Grades/Specifications

- ASTM F136 Grade 23 (Grade 5-ELI)
- ISO 5832-3
- UNS R56401
- 3.7165

Applications

- Medical bone screws
- Orthopaedic fixation devices
- Surgical plates and fasteners
- Spinal and trauma implants
- Dental implant abutments

*Chemical Composition (weight, %)

	Ti	Al	V	Fe	O	C	N	H
Min	Bal	5.50	3.5					
Max		6.50	4.5	0.25	0.13	0.08	0.05	0.012

*As per ASTM F136

Annealed Mechanical Properties (bars up to 44.45mm dia.)

Tensile Strength min MPa	860
0.2% Proof Strength min MPa	795
Elongation min 4D %	10
R of A min % (bars 4.75mm dia to 44.45mm dia.)	25

Stock Availability

We stock Ti6Al4V-ELI titanium bars in diameters ranging from 4mm to 20mm, supplied in 3 metre straight lengths. These bars are particularly suitable for use on sliding head lathes and precision milling machines, supporting efficient production of medical and dental components.

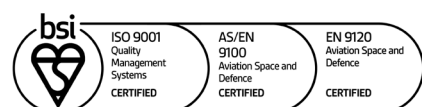
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