

## Ti-6Al-4V Extra Low Interstitial (Ti-6Al-4V ELI, low Oxygen & Iron)

The ELI grade of Ti-6Al-4V has been developed for improved fracture toughness and improved ductility over the standard Ti-6-4 alloy. It has lower impurity limits, especially oxygen and iron. It is used in aerospace and medical applications which require excellent fracture toughness and fatigue strength, such as aircraft, structural components, and biomedical implants.

Here are the main components of this type of Ti-6Al-4V:

Component	Wt. %
Ti	90
Al	6
V	4
Fe	Max: 0.14
O	Max: 0.13

The Ti-6Al-4V ELI has superior biocompatibility especially when direct contact with tissues or bones. Its poor shear strength makes it undesirable for bone screws or plates. It also has poor surface wear properties and tends to seize when in sliding contact with itself and other metals. Surface treatments such as nitriding and oxidizing can improve the surface wear properties.

### Chemical Analysis

Al(%)	5.7
V(%)	4.2
Fe(%)	0.025
C(%)	0.03
N(%)	0.015
H(%)	0.007
O(%)	0.1

### Mechanical Properties:

Hardness	36HRC
Tensile Strength Rm (Mpa)	912
Yield Strength Rp0.2 (Mpa)	905
Elongation at Break(%)	15
Reduction of Area(%)	30

### Physical Properties

Density	4.43g/cc
Melting Point	1604-1660°C
Elastic Modulus ( x10 <sup>6</sup> psi )	16.5