

Technical datasheet

Ti Grade 23 / Ti-6Al-4V ELI

A high purity grade of Ti-6Al-4V with lower content of the interstitial elements – ELI (Extra Low Interstitials) for improved ductility and toughness.

Available products

Product form	Size range from	Size range from
Sheet/plate	0.4 mm thickness	38.1 mm thickness
Bar	1.0 mm diameter	100.0 mm diameter

Chemical composition (%)

Ti	Al	V	Fe	O	C
Balance	5.50-6.75	3.5-4.5	0.25 max	0.13 max	0.08 max

Major specifications

ASTM F136 ISO 5832-3	UNS R56401
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Physical properties

Density	4.47 g/cm ³	Beta transus temperature	977 ± 4 °C
Melting point	1649°C		

Mechanical properties – minimum room temperature properties per ASTM F136

Dia up to 4.75 - 44.45mm		Dia 44.45 - 63.50 mm	
Yield strength	795 MPa	Yield strength	760 MPa
Tensile strength	860 MPa	Tensile strength	825 MPa
Elongation	10 %	Elongation	8 %

Key attributes

Ti-6Al-4V ELI (Extra Low Interstitial) is a high purity grade of Ti-6Al-4V with lower content of the interstitial elements oxygen, carbon and iron which results in a product with improved ductility and fracture toughness. This alloy has outstanding biocompatibility and is readily accepted in the human body due to its non-toxic and non-allergic elements. It is used widely in biomedical applications and as its low temperature ductility is improved (compared with Ti Grade 5/Ti-6Al-4V) it finds use in cryogenic applications.

Ti-6Al-4V ELI is highly fabricable and readily formed. It is machinable and can be welded by conventional processes and procedures. Please contact us for further details on forming, fabrication and welding consumables

Applications

Orthopedic implants
Surgical instruments
Medical devices
Cryogenic applications
Some aerospace components

All information is subject to change without notice. The properties correspond to the material in the heading. They may vary for other specifications. Please contact us for more details.