

TECHNICAL DATASHEET

[Titanium Grade 23]

Datasheet No. SX-0023 · Version 260723

► GENERAL DESCRIPTION

Ti-6Al-4V ELI (Grade 23) is an $\alpha+\beta$ titanium alloy developed from the classic Ti-6Al-4V (Grade 5) by reducing the content of interstitial elements such as oxygen, nitrogen, and carbon. This results in higher purity and improved toughness. The material combines high strength, excellent corrosion resistance, and outstanding biocompatibility, while also offering good fatigue performance and fracture toughness. It is suitable for applications requiring extremely high reliability and safety.

► DESIGNATIONS & STANDARDS

DIN	ASTM	UNS
3.7165	F136/ISO5832-3	R56401

► PRODUCT FORMS & APPLICABLE STANDARDS

Product Form	Applicable Standards
Plate / Sheet	ASTM B265 Grade 23; ASTM F136; ISO 5832-3; AMS 4907
Bar / Rod	ASTM B348 Grade 23; ASTM F136; ISO 5832-3; AMS 4930
Wire	ASTM B863 Grade 23; ASTM F136; ISO 5832-3

► CHEMICAL COMPOSITION (MASS %) *In accordance with: [ASTM F136]*

Element	N	C	H	Fe	O	Al	V	Co	Ti
Content (%)	≤0.05	≤0.08	≤0.012	≤0.25	≤0.13	5.5-6.50	3.5-4.5	< 0.1	Balance

► HEAT TREATMENT

Diameter (mm)	Tensile Strength (MPa)	Yield Strength (MPa)	Elongation (4D)	Reduction of Area (%)	Hardness (HV10)
< 4.75	≥860	795	10	/	≥260
4.75-44.45	≥860	795	10	25	
44.45-63.5	≥825	760	8	20	
63.5-101.6	≥825	760	8	15	

► APPLICATIONS

Condition	Dimension
Medical	Dental implants / Orthopedic implants / Spinal cages / Trauma fixation plates / Bone screws / Artificial joint components
Aerospace	High-reliability lightweight structural parts / Precision fasteners / Special high-toughness titanium alloy parts
Industrial	High-end corrosion-resistant fasteners / High-strength shafts / Precision chemical equipment parts / Marine equipment components
Mechanical engineering	Surgical robot instrument parts / Lightweight joints / Precision grippers / Medical robot end-effectors

► AVAILABLE FORMS

Available Form	Size Range	Surface Finish	Length (Customizable)	Tolerance (Customizable)	Delivery Condition
Plate	T0.5-T200.0mm	Milled / Bright	L:200/250/300 W:200/300/500/1000	-0.0/+1.0mm	Annealed
Bar	φ1.0-φ200.0mm	Ground / Precision Polished	3M/PCS	h6-h9	Annealed
Wire	φ1.0-φ3.0mm	Ground / Precision Polished	1M/PCS	h6-h9	Annealed

Available Form	Diameter(mm)	Thickness(mm)	Surface
Titanium disc	φ98.0*T	10.0/12.0/14.0/16.0/18.0/20.0/22.0/25.0	Milling+Vacuum packaging
Titanium square plate	150*140*T; 205*145*T; 250*155*T	10.0/12.0/14.0/16.0/18.0/20.0/22.0/25.0	Milling+Vacuum packaging

Materials, specifications or special requirements not shown in the table can all be customized. Please contact our sales team.

► TESTING & CERTIFICATION

TESTING CAPABILITIES	QUALITY & TRACEABILITY
- Chemical: OES · O/N/H analyzer - Mechanical: tensile · Rockwell/Vickers · impact - NDT: ultrasonic testing (UT) - Metallography: optical & electron microscope - Dimensional: straightness / roundness / coaxiality	- ERP full-process traceability · heat-number control - Batch consistency control - Third-party testing: on request, at extra cost - Standards: ASTM · ISO · EN · AMS · DIN - MTC with each shipment

CERTIFICATION: ISO 13485 · ISO 9001

THIRD-PARTY TESTING: SGS



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