

TECHNICAL DATASHEET

[Ti-6Al-7Nb]

Datasheet No. SX-0024 · Version 260723

► GENERAL DESCRIPTION

TC20 (Ti-6Al-7Nb) is a high-strength titanium alloy with excellent strength-to-weight ratio, good elevated-temperature performance, and outstanding creep resistance. It also provides good fracture toughness and fatigue resistance. With its lightweight characteristics and stable long-term performance under complex loading and elevated-temperature conditions, this material is widely used in advanced structural components and critical load-bearing applications.

► DESIGNATIONS & STANDARDS

DIN	ASTM	UNS
3.7235	F1295/ISO5832-11	R56700

► PRODUCT FORMS & APPLICABLE STANDARDS

Product Form	Applicable Standards
Plate / Sheet	ISO 5832-11
Bar / Rod	ASTM F1295; ISO 5832-11
Wire	ASTM F1295; ISO 5832-11

► CHEMICAL COMPOSITION (MASS %) *In accordance with: [ISO 5832-11]*

Element	Al	Nb	Ta	Fe	O	C	N	H	Ti
Content (%)	5.50-6.50	6.5-7.5	≤0.50	≤0.25	≤0.20	≤0.08	≤0.05	≤0.009	Balance

► HEAT TREATMENT

Condition	Tensile Strength (MPa)	Yield Strength (MPa)	Elongation (4D)	Reduction of Area (%)	Hardness (HV10)
Rod	≥900	≥800	≥10	≥25	≥260

► APPLICATIONS

Condition	Dimension
Medical	Dental implants / Artificial joint stems / Orthopedic screws / Bone plates / Spinal implants / Trauma fixation parts
Aerospace	High-strength titanium alloy structural parts / Fasteners / Lightweight load-bearing parts / Corrosion-resistant connectors
Industrial	High-strength corrosion-resistant shafts / Chemical equipment parts / Marine fasteners / Precision structural parts
Mechanical engineering	Medical robot instrument parts / Lightweight connectors / Joint structural parts / Precision gripping components

► 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

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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