

TECHNICAL DATASHEET

[316 LVM]

Datasheet No. SX-0010 · Version 260723

► GENERAL DESCRIPTION

316LVM (UNS S31673) is a vacuum-melted, ultra-low-carbon austenitic stainless steel specifically designed for medical implants and high-purity applications. Through vacuum induction melting (VIM) and/or vacuum arc remelting (VAR), the inclusion and impurity content is significantly reduced, improving material cleanliness, corrosion resistance, and biocompatibility. It offers excellent corrosion resistance, good mechanical properties, and outstanding surface polishing performance, and is widely used in surgical implants and high-end medical device applications.

► DESIGNATIONS & STANDARDS

DIN	ASTM	UNS	EN 10088
1.4441	F138/F139/ISO5832-1	S31673	X2CrNiMo18-14-3

► PRODUCT FORMS & APPLICABLE STANDARDS

Product Form	Applicable Standards
Plate / Sheet	ASTM F139; ISO 5832-1; ASTM A240; EN 10088-2
Bar / Rod	ASTM F138; ISO 5832-1; ASTM A276; ASTM A479; EN 10088-3
Wire	ASTM F138; ISO 5832-1; ASTM A580; EN 10088-3

► CHEMICAL COMPOSITION (MASS %) *In accordance with: [ISO 5832-1]*

Element	C	Mn	P	S	N	Si	Cu	Cr	Ni	Mo	Co	Fe
Content (%)	≤0.03	≤2.00	≤0.025	≤0.01	≤0.10	≤1.00	≤0.5	17.00-19.00	13.00-15.00	2.25-3.00	≤0.10	Balance

► HEAT TREATMENT

Condition	Tensile Strength (MPa)	Yield Strength (MPa)	Elongation (4D)	Reduction of Area (%)	Hardness (HRB)
Bars	Annealed	All	490≤Rm≤690	190	40
	Cold-worked	≤22	860≤Rm≤1100	690	12
	Extra-hard	≤8	≥1400	/	/
Plates	Annealed	490≤Rm≤690	/	190	40
	Cold worked	860≤Rm≤1100	/	690	10
Wires	Annealed	0,025≤d≤0,13	≤1000	/	30
		0,13<d≤0,23	≤930	/	30
		0,23<d≤0,38	≤890	/	35
		0,38<d≤0,5	≤860	/	40
		0,5<d≤0,65	≤820	/	40
		d>0,65	≤800	/	40
	Cold drawna	0,2≤d≤0,7	1600≤Rm≤1850	/	/
		0,7<d≤1	1500≤Rm≤1750	/	/
		1<d≤1,5	1400≤Rm≤1650	/	/
		1,5<d≤2	1350≤Rm≤1600	/	/

► APPLICATIONS

Condition	Dimension
Medical	Orthopedic plates / Bone screws / K-wires / Intramedullary nails / Surgical guide wires / Dental/orthodontic wires / Implant-grade rods and wires
Aerospace	High-cleanliness precision springs / Corrosion-resistant micro shafts / Instrument parts / Special-environment connectors
Industrial	High-purity equipment parts / Pharmaceutical equipment components / Precision springs / Small parts for corrosive environments
Mechanical engineering	Surgical robot instrument rods / Micro springs / Precision guide parts / Corrosion-resistant gripper components

► AVAILABLE FORMS

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

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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