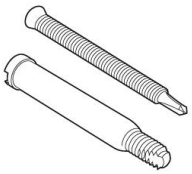
Implant Materials | Titanium Alloys
Medical Alloys

Zapp is Certified According to ISO 9001


Implant Materials – Titanium Alloys

The titanium alloys from Medical Alloys offer good corrosion resistance. They feature high biocompatibility, and because they contain no nickel, they do not induce allergic reactions. As a result of their modulus of elasticity, which more closely approximates that of human bone than any other metallic implant materials, titanium alloys offer a combination of high fatigue strength and an unsurpassed level of biofunctionality.

Typical application areas include short-term implants for traumatology and long-term implants used in endoprosthetics. The chemical compositions meet the requirements of local and international standards. We also use our works analyses to selectively tighten specifications for optimized properties.

Outstanding quality characteristics	raw material from qualified production sources
	high corrosion resistance
	biocompatibility
	amagnetic properties (MRI compatibility)*
	high fatigue strength relative to pure titanium
Typical applications	bone screws, bone nails, intramedullary nails
	joint replacement parts, spine implants, dental implants
	surgical instruments
Delivery forms / finishes	
Tolerances	ISO tolerance fields IT 9 – IT 5 for wire and bar
	according to DIN 17860 for strip and sheet of titanium and titanium alloys
	special tolerances on request
Testing	surface quality through eddy current testing according to EN 10277-1 as well as testing for inner defects using ultrasound from Ø 6.0 mm possible (by agreement in case of appropriate product forms)

* MRI: Magnetic Resonance Imaging

** strip in Grade 5 only

Wire	Ø 0.5 mm – 12.0 mm
	in coils, on spools
	polished-drawn, flex-drawn
Bar	Ø 1.0 mm – 100.0 mm
	standard lengths 2000 and 3000 mm, special lengths on request
	drawn, annealed, ground, polished
	cut to length, chamfered, face chamfered, pointed, centered
	degreased, labeled
Profile	1 mm² – 400 mm² cross-section
	in bars, on spools
	rolled, specially rolled, drawn
	matt
	special contours on request
Precision strip** / sheet	thicknesses 0.1 mm – 4.76 mm
	thicknesses 0.5 mm – 4.76 mm on stock
	widths 2.0 mm – 1220.0 mm
	in coils and strips
	cold rolled, annealed
	cut, deburred, rounded edges
	water jet trimmed
Plate / pipe	large rectangular profiles
	water jet trimmed blanks
	pipe on request

Ergitan® 3.7165MG (UNS R56400) – Grade 5 ELI

Specific material properties	higher fatigue strength than all pure titanium grades	
	strength comparable to that of steel	
	very good corrosion resistance against oxidizing acids and acid mixtures, chloride solutions as well as pitting and stress-crack corrosion	
Typical analytical components (wt.%)	Fe: < 0.3; Al: <6.0; V: < 4.0; Ti: rest	
Relevant standards	ASTM F 136, ISO 5832-3	
Tensile strength	annealed	> 860 MPa
	cold hardened	> 1000 MPa

Ergitan® 9.9367MG (UNS R56700)

Specific material properties	higher fatigue strength than all pure titanium grades	
	strength comparable to that of steel	
	improved biocompatibility through the use of Nb instead of V	
Typical analytical components (wt.%)	Fe: < 0.25; Ta: < 0.5; Al: 6.0; Nb: 7.0; Ti: rest	
Relevant standards	ASTM F1295, ISO 5832-11	
Tensile strength	annealed	> 860 MPa
	cold hardened	> 1000 MPa

Zapp Precision Metals GmbH
MEDICAL ALLOYS
Letmather Straße 69
58239 Schwerte
P.O. Box 17 20
58212 Schwerte
Phone +49 2304 79-540
Fax +49 2304 79-482
medicalalloys@zapp.com

www.zapp.com

For further information about our products and locations, please refer to our image brochure or consult our website at www.zapp.com.

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