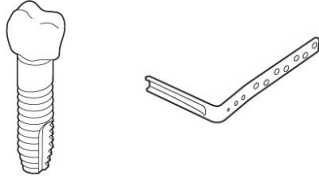


Zapp is certified according to ISO 9001



Implant Materials – Pure Titanium

The pure titanium implant materials from Medical Alloys offer optimized properties in terms of corrosion resistance in strongly oxidizing as well as moderately reducing environments. Pure titanium features high biocompatibility and because it contains no nickel, it does not induce allergic reactions. As a result of its modulus of elasticity, which more closely approximates that of human bone than any other metallic implant materials, pure titanium offers 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 endo-prosthetics. 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 in strongly oxidizing as well as moderately reducing environments
	very high biocompatibility, no known allergic reactions, Ni-free
	amagnetic properties (MRI compatibility) *
	high fatigue strength
	good weldability
Typical applications	surgical implants, screws/plates for facial surgery
	dental implants, bone plates, bone screws
	medical instruments, anti-allergenic jewelry
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 irregularities using ultrasound from Ø 6.0 mm possible (by agreement in case of appropriate product forms)

* MRI: Magnetic Resonance Imaging

** strip in Grade 1 and Grade 2 only

Wire	Ø 0.5 mm – 6.0 mm
	in coils, on spools
	polished, flex-drawn
Bar	Ø 1.0 mm – 100.0 mm
	standard lengths 2,000 and 3,000 mm, special lengths on request
	drawn, annealed, ground, polished
	cut to length, chamfered, face chamfered, pointed, centered
	degreased, labeled
Profile	0.5 mm ² - 550.0 mm ² cross-section
	in bars, on spools
	rolled, specially rolled, drawn
	mat
	“near net shape” standard shapes on stock
	special shapes on request
Precision strip / sheet	thicknesses 0.05 mm – 4.76 mm
	thicknesses 0.3 mm – 4.76 mm on stock
	widths 2.0 mm – 1,500.0 mm
	in coils and strips
	cold rolled, annealed
	cut, deburred, rounded edges
	water jet trimmed
Plate / tube	large rectangular profiles
	water jet trimmed blanks
	tube on request

Implant Materials – Pure Titanium

Ergitan® 3.7025MG (UNS R50250) – Grade 1

Specific material properties	highest purity
	lowest strength and highest formability at RT
Typical analytical components (wt.%)	Fe: < 0.2; O: <0.18; N: < 0.03; Ti: bal.
Relevant standards	ASTM F67, ISO 5832-2
Tensile strength	annealed > 240 MPa

Ergitan® 3.7035MG (UNS R50400) – Grade 2

Specific material properties	very good ratio of strength to elongation
	high notch impact strength
Typical analytical components (wt.%)	Fe: < 0.3; O: < 0.25; N: < 0.03; Ti: bal.
Relevant standards	ASTM F67, ISO 5832-2
Tensile strength	annealed > 345 MPa
	cold finished > 500 MPa

Ergitan® 3.7055MG (UNS R50550) – Grade 3

Specific material properties	very good ratio of strength to elongation
	high notch impact strength
Typical analytical components (wt.%)	Fe: < 0.3; O: < 0.35; N: < 0.05; Ti: bal.
Relevant standards	ASTM F67, ISO 5832-2
Tensile strength	annealed > 550 MPa
	cold finished > 680 MPa

Ergitan® 3.7065MG (UNS R50700) – Grade 4

Specific material properties	very good ratio of strength to elongation
	high notch impact strength
	highest fatigue strength of the pure titanium grades
Typical analytical components (wt.%)	Fe: < 0.5; O: < 0.4; N: < 0.05; Ti: bal.
Relevant standards	ASTM F67, ISO 5832-2
Tensile strength	annealed > 550 MPa
	cold hardened > 680 MPa
	on request > 800 MPa

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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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