

The most important alloys of titanium

Description	Micro-structure	EN	UNS	Standards	Tensile Strength min. [N/mm ²]	Yield Strength 0.2% min. [N/mm ²]	Properties	Application
Titanium CP Grade 1 (CP1)	α-titanium	3.7024 3.7025	R50250	ASTM B 348 ASTM F 67 ISO 5832-2	240	170	Good cold formability, deep-drawable, good weldability	Heat exchanger, welded tubes, chemical industry, facade claddings
Titanium CP Grade 2 (CP2)	α-titanium	3.7034 3.7035	R50400	ASTM B 348 ASTM F 67 ISO 5832-2 AMS 4902	345	275	Medium strength level, corrosion resistant, slightly higher oxygen content than CP1	Mechanical engineering, medical industry, micro-mechanics, aerospace industry
Titanium CP Grade 4 (CP4)	α-titanium	3.7064 3.7065	R50700	ASTM B 348 ASTM F 67 ISO 5832-2 AMS 4901	550	483	Highest strength level for pure titanium, challenging cold processing, increased oxygen content	Dental implants, bone screws, chemical industry
Ti 0.15Pd Grade 7	α-titanium	3.7235	R52400	ASTM B 348	345	275	Higher corrosion resistance than CP2	Petrochemical industry
Ti6Al4V Grade 5 (TAV)	αβ-titanium	3.7164 3.7165	R56400	ASTM B 348 ASTM F1472 ISO 5832-3 AMS 4928 / 4911	895	828	High strength, good forgeability and weldability, oxygen content max. 0.20%	Aerospace, mechanical engineering, ultrasonic technology, sports equipment, racing cars
Ti6Al4V ELI Grade 23 (TAV ELI)	αβ-titanium	3.7165	R56401 R56407	ISO5832-3 ASTM F 136 ISO 5832-3 AMS 4907	860	795	Low oxygen content max. 0.13%, good biocompatibility, high corrosion resistance	Medical industry (implants), watch industry, low temperature applications
Ti6Al7Nb (TAN)	αβ-titanium	9.9367	R56700	ISO5832-11 ASTM F 1295	900	800	High strength, good biocompatibility	Medical industry, joint prostheses
Ti3Al2.5V Grade 9	αβ-titanium	3.7194	R56320	ASTM B 348	620	483	Better formability than Ti6Al4V with lower strength	Seamless tubes
BetaC™ 3Al8V6Cr4Mo4Zr Grade 19	β-titanium	---	R58640	ASTM B 348 AMS 4957 / 4858	793 (ST) 1172 (STA)	759 (ST) 1103 (STA)	Low elastic modulus, heat treatable for different strength properties	Springs, fasteners, spectacle frames, petrochemical industry
Ti15Mo	β-titanium	---	R58150	ASTM F 2066	690 (BAR) 900 (AAR) 1150 (AGR)	483 (BAR) 800 (AAR) 1050 (AGR)	Heat treatable for different strength properties, good biocompatibility, corrosion resistant	Surgical implants