

KUANGTAI Titanium and Titanium Alloy Products for Medical Use

● PRODUCT CLASSIFICATION

Material Classification	Features	Applications
Commercially Pure Titanium (ASTM F67)	CP Titanium is composed of pure titanium only, thus is highly bio-compatible and soft. It is used for parts which do not require high strength but better formability (ductility). CP titanium ranges from grade 1, which has the highest corrosion resistance, formability and lowest strength, to grade 4, which offers the highest strength and moderate formability.	<ul style="list-style-type: none"> ● Orthopaedic applications ● Needles ● Pacing leads ● Woven wire mesh ● Sutures ● Ligature clips ● Orthodontic applications
Ti-6Al-4V (ASTM F136)	F136 alloy contains Vanadium (V), thus has much higher tensile strength than CP Ti, which makes it a perfect solution for parts requiring better strength.	<ul style="list-style-type: none"> ● Screws ● Stems ● Catheter guide wire ● Cerebral aneurysm clip



廣泰金屬工業股份有限公司

KUANG TAI METAL INDUSTRIAL CO., LTD.

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● MECHANICAL PROPERTIES

Classification	Grade	Tensile Strength (N/mm ²)	Typical Value of Tensile Strength N/mm ² (ksi)	0.2% Yield Strength (N/mm ²)	Elongation (%)
Commercially Pure Titanium	ASTM F67 Grade 1 / ISO 5832-2 Grade 1	≥ 240	586-793 (85-115) Cold Worked 310-517 (45-75) Annealed	≥ 170	≥ 24
	ASTM F67 Grade 2 / ISO 5832-2 Grade 2	≥ 345	758-965 (110-140) Cold Worked 448-621 (65-90) Annealed	≥ 275	≥ 20
	ASTM F67 Grade 3 / ISO 5832-2 Grade 3	≥ 450	823-1030 (120-150) Cold Worked 550-720 (80-105) Annealed	≥ 380	≥ 18
	ASTM F67 Grade 4 / ISO 5832-2 Grade 4	≥ 550	931-1138 (135-165) Cold Worked 655-827 (95-120) Annealed	≥ 483	≥ 15
Ti-6Al-4V	ASTM F136 / ISO 5832-3	≥ 860	1235-1440 (180-210) Cold Worked 960-1132 (140-165) Annealed	≥ 795	≥ 10

● CHEMICAL COMPOSITION

Classification	Grade	Chemical Composition (wt.%)							
		N	C	H	Fe	O	Al	V	Ti
Commercially Pure Titanium	ASTM F67 Grade 1 / ISO 5832-2 Grade 1	≤ 0.03	≤ 0.08	≤ 0.0125	≤ 0.20	≤ 0.18	-	-	Balance
	ASTM F67 Grade 2 / ISO 5832-2 Grade 2	≤ 0.03	≤ 0.08	≤ 0.0125	≤ 0.30	≤ 0.25	-	-	Balance



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	ASTM F67 Grade 3 / ISO 5832-2 Grade 3	≤ 0.03	≤ 0.08	≤ 0.0125	≤ 0.30	≤ 0.35	-	-	Balance
	ASTM F67 Grade 4 / ISO 5832-2 Grade 4	≤ 0.03	≤ 0.08	≤ 0.0125	≤ 0.50	≤ 0.40	-	-	Balance
Ti-6Al-4V	ASTM F136 / ISO 5832-3	≤ 0.05	≤ 0.08	≤ 0.0120	≤ 0.25	≤ 0.13	5.5 – 6.5	3.5 – 4.5	Balance

● WIRE & CENTERLESS GROUND BAR

Kuangtai provides titanium material in the form of wire or cut-length bar. We have developed an enhanced surface treatment that removes most residual oxide from the wire/bar surface and yields a cleaner and smoother finish. The cut-length bars are in centerless ground conditions.

Wire Sizes (* different sizes are available upon request)

Diameter	Tolerance
0.60mm – 0.85mm (.025" - .033")	$\pm 0.01\text{mm}$ (.0003")
0.85mm – 1.20mm (.033" - .047")	$\pm 0.02\text{mm}$ (.0007")
1.20mm – 2.00mm (.033" - .080")	$\pm 0.025\text{mm}$ (.001")

Cut-Length Bar Sizes (* different diameters or lengths are available upon request)

Diameter	Tolerance	Length	Surface Roughness
2.0mm – 7.6mm (.08" - .30")	$\pm 0.025\text{mm}$ (.001")	990 mm – 3000 mm (39" – 118")	24 or better



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