

Titanium Alloy Spherical Powder

exceptional specific strength, low density, outstanding biocompatibility,
and superior corrosion resistance

Titanium ranks as the fourth most abundant structural metal and represents a highly promising structural material due to its exceptional specific strength, low density, outstanding biocompatibility, and superior corrosion resistance. This versatile metal finds extensive applications across multiple industries including aerospace, marine engineering, automotive technology, and medical device manufacturing.

The development and utilization of titanium and its alloys are intrinsically linked to high-technology industries. Conventional cast and wrought titanium alloys face market penetration challenges due to their high production costs and low material utilization rates. However, the adoption of advanced processing technologies such as powder metallurgy and additive manufacturing – which offer both cost efficiency and high productivity – has significantly stimulated market growth for titanium materials. Titanium powder and titanium alloy powders serve as the fundamental feedstock materials for these modern manufacturing processes in titanium alloy production.

Alloy Designation	Product Name	Chemical Composition (wt.%)
Grade 1	Commercially Pure Ti Powder	Ti≥99.5, O≤0.18
Grade 2	Commercially Pure Ti Powder	Ti≥99.2, O≤0.25
Grade 3	Commercially Pure Ti Powder	Ti≥99.2, O≤0.35
Grade 4	High-Strength CP Ti Powder	Ti≥98.9, O≤0.40
Grade 5	Ti-6Al-4V Powder	Ti-6Al-4V, O≤0.20
Grade 5 ELI	Ti-6Al-4V ELI Powder	Ti-6Al-4V, O≤0.13
Grade 7	Ti-0.2Pd Powder	Ti≥99.2, Pd 0.12-0.25, O≤0.25
Grade 9	Ti-3Al-2.5V Powder	Ti-3Al-2.5V, O≤0.15
Grade 12	Ti-0.3Mo-0.8Ni Powder	Ti-0.3Mo-0.8Ni, O≤0.25
Grade 23	Ti-6Al-4V ELI Medical Powder	Ti-6Al-4V, O≤0.13
-	Ti-6Al-7Nb Medical Powder	Ti-6Al-7Nb, O≤0.20
-	Ti-13Nb-13Zr Powder	Ti-13Nb-13Zr, O≤0.15
-	Ti-15V-3Cr-3Sn-3Al Powder	Ti-15V-3Cr-3Sn-3Al, O≤0.15
-	Ti-10V-2Fe-3Al Powder	Ti-10V-2Fe-3Al, O≤0.13
-	Ti-5Al-2.5Sn Powder	Ti-5Al-2.5Sn, O≤0.20

Commercially Pure Ti Powder

Particle Size			Spherical			
Shape			0~25μm, 15~45μm, 15~53μm, 20~63μm, 45~106μm, 45~150μm or Customized			
Chemical Composition						
	Titanium	Fe	C	O	H	N
Grade 1	Bal.	0.20%	0.08%	0.18%	0.02%	0.03%
Grade 2	Bal.	0.30%	0.08%	0.25%	0.02%	0.03%
Grade 3	Bal.	0.30%	0.08%	0.35%	0.02%	0.05%
Grade 4	Bal.	0.50%	0.08%	0.40%	0.02%	0.05%

TI-6AL-4V

Particle Size	15-53 μm, 45-105 μm, or customized					
Purity	99.90%					
Shape	Spherical					
Apparent Density (g/cm3)	≥2.35					
Oxygen Content	≤1300 ppm					
N Content	< 500 ppm					
Chemical Composition						
Element	Fe	C	H	Al	V	Ti
wt%	≤0.3	≤0.08	≤0.015	5.5~6.75	3.5~4.6	Bal.

TI-6AL-7NB

Particle Size				0~45μm, 45~105μm or customized				
Purity				99.90%				
Morphology				Spherical				
Chemical Composition (%)								
Fe	O	N	C	H	Al	Nb	Ta	Ti
<0.25	<0.2	<0.05	<0.08	<0.009	5.5~6.5	6.5~7.5	<0.5	Bal.

Nickel Titanium (Nitinol)

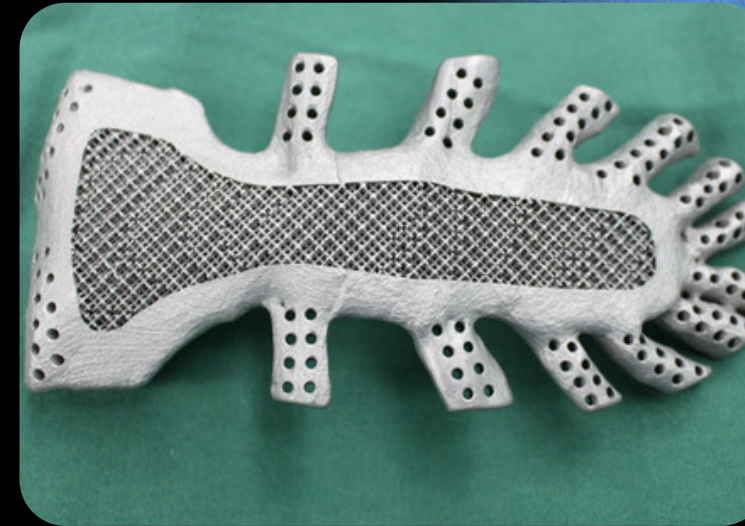
Appearance		gray powder					
Size		5-25μm, 15-45μm, 15-53μm, 45-75μm, 45-105μm, 5-150μm					
Apparent Density (g/cm3)		≥3.0					
Tap Densit (g/cm3)		≥4.0					
Hall Flow Rate (s/50g)		≤30.0					
Chemical Composition (%)							
Ni	40~50	Ti	50~60	Mo	<0.01	Si	<0.01
Al	<0.1	Fe	<0.05	Cu	<0.03	Mg	<0.02



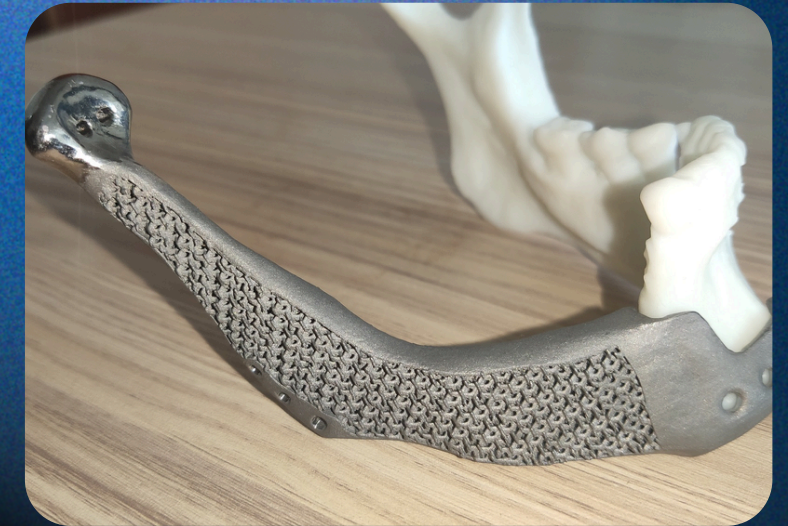
**PRINTING AIRCRAFT ENGINE BLADES
(Ti-6Al-4V ELI)**



**Aviation lightweight
structural parts**



**3D printed orthopedic implants
(Ti-6Al-7Nb)**



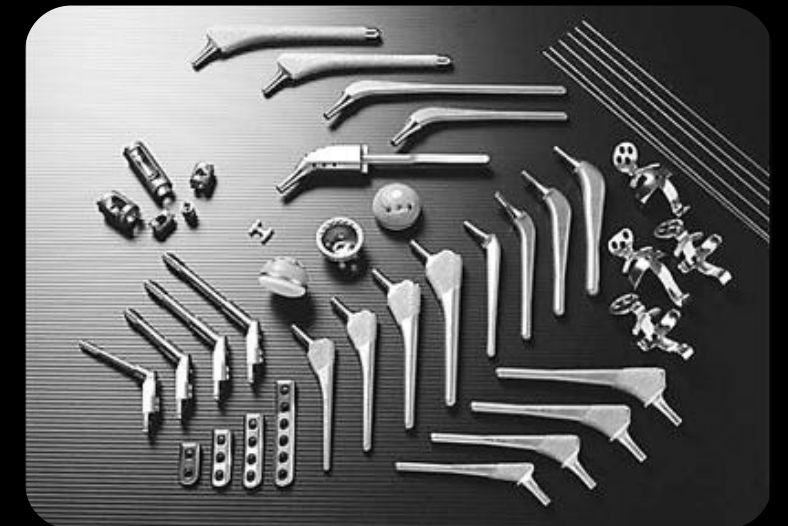
Engine connecting rod



**Titanium connecting rod
and crankshaft**



Smart watch titanium case



Micro surgical instruments

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