OptiPowder Ti6Al4V:
High-Performance Titanium Alloy for Advanced Manufacturing

Titanium Alloy Ti6Al4V (UNS R56400) is a titanium-aluminum-vanadium alloy of the α+β type, known for its high strength, low specific density, and excellent corrosion resistance. Available in both Grade 5 and Grade 23 (Extra Low Interstitials or ELI), Ti6Al4V delivers outstanding mechanical properties. Grade 23 offers increased ductility and toughness compared to Grade 5, making it suitable for applications that require both high strength and enhanced toughness.

Continuum Powders is proud to offer OptiPowder Ti6Al4V, produced using our proprietary M2P Gas Atomization System—a plasma-based process that transforms reclaimed metal revert streams into high-quality spherical powder in a single step. This process is powered by green energy, significantly reducing the carbon footprint of our powder production. OptiPowder Ti6Al4V provides consistent quality and excellent flowability, making it ideal for advanced manufacturing applications.

Engineered for additive manufacturing (AM), OptiPowder Ti6Al4V is particularly well-suited for medical, automotive, and industrial applications where a combination of high strength, lightweight, and corrosion resistance is critical. Additionally, OptiPowder Ti6Al4V can be used for the repair and refurbishment of damaged blades and components using Directed Energy Deposition (DED), making it versatile for maintenance and sustainability-focused processes.

***Nominal Composition (wt%)**

Ti	Balance	Other each(max)	0.10
Al	5.50-6.50		
V	3.50-4.50	Other Total (max)	0.10
Fe (max)	0.25		
Y (max)	0.005	N (max)	0.05
O (max)	0.13	H (max)	0.012
C (max)	0.08		

*Per ASTM F 3001-14

***Typical Physical Properties**

Apparent Density	>2.3 g/cc
Tapped Density	>2.5 g/cc
Hall Flow Time	<30 s/50g

*Properties for LPBF PSD

OptiPowder Ti64 Gr 5 Print Data*

Stress Relieved	Direction	Ti64 Grade 5	ASTM F300-1
Tensile Strength (MPa)	Z	1402	860
Yield Strength (MPa)	Z	1294	795
Elongation %	Z	14	10

*Printed on EOS M290

OptiPowder Ti6Al4V supports various AM processes, including:

- **Laser Powder Bed Fusion (LPBF):** Ideal for producing complex parts with high accuracy and mechanical properties.
- **Electron Beam Melting (EBM):** Suitable for creating large, complex parts with excellent mechanical properties.
- **Binder Jetting:** A cost-effective AM process for producing larger parts with lower density and porosity.

Continuum Powders offers OptiPowder Ti6Al4V in various particle size distributions (PSD) to meet your specific requirements. Representative properties shown here are for laser powder-bed fusion (LPBF) powder PSD.

Contact us to receive a quote and learn more about how OptiPowder Ti6Al4V can improve your advanced manufacturing projects.

continuumpowders.com/contact

info@continuumpowders.com