

Wipro 3D – Ti64 ELI

Ti64ELI is well-known light alloy, characterized by having excellent mechanical properties and corrosion resistance combined with low specific weight and biocompatibility. This material is ideal for many high-performance applications.

Characteristics of the Alloy:

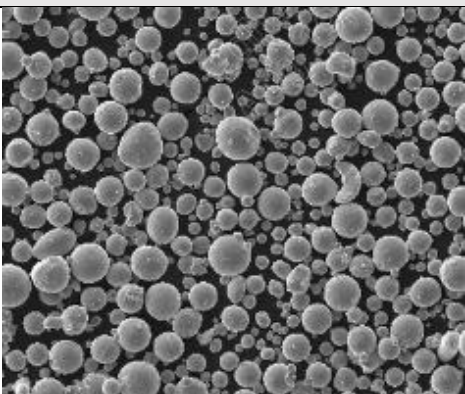
- Excellent corrosion resistance due to a stable oxide layer
- Superior biocompatibility and osseointegration
- Good weldability and formability
- Lower interstitials improve ductility and damage tolerance

Applications

- Engine components, airframes, turbines, fasteners
- Orthopedic implants, prosthetics, surgical instruments, dental implants
- Racing components, valves, connecting rods
- Propellers, shafts, pumps, fittings
- Heat exchangers, valves, pipes

Chemical Composition

Chemical composition of raw material and built parts is compliant to table given below.

Chemical Composition (weight%)		Powder morphology in SEM
Element	Limitations	
Al	5.5-6.5	
V	3.5-4.5	
O	0.13max	
N	0.05 max	
C	0.08 max	
H	0.015 max	
Fe	0.25 max	
Y	0.005 max	
Titanium	Balance	
Other elements	0.4 max	

Mechanical Properties

Mechanical properties of built parts confirm to below.

Properties	HT condition
Tensile Strength (MPa)	>800
Yield Strength (MPa)	>750
Elongation (%)	>8

There are various heat treatment methods for improving strength and/or elongation, hence if the user provides exact requirements, it can be discussed to achieve these properties.

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