

Wipro 3D – Ti6Al4V

Ti6Al4V alloy, which is well-known for having excellent mechanical properties: low density with high strength and excellent corrosion resistance. The alloy has low weight compared to superalloys and steels and higher fatigue resistance compared to other lightweight alloys.

Characteristics of the Alloy:

Low weight combined with high strength

Excellent corrosion resistance

High fatigue resistance compared to other lightweight alloys

Applications

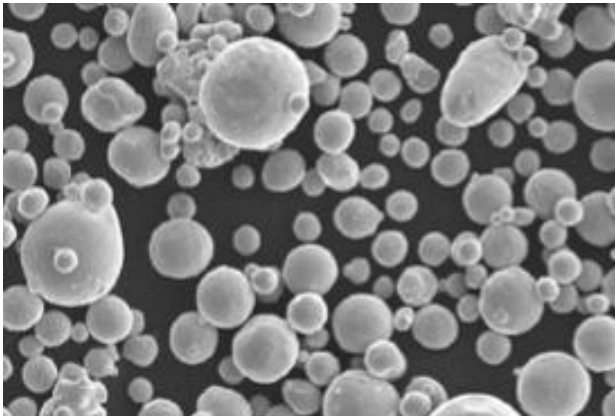
Aerospace components

Automotive components

Low weight in combination with high strength applications

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	5.5-6.75	
V	3.5-4.5	
O	0.2max	
N	0.05 max	
C	0.08 max	
H	0.015 max	
Fe	0.3 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)	>1050
Yield Strength (MPa)	>950
Elongation (%)	>10
Reduction in Area(%)	>20

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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