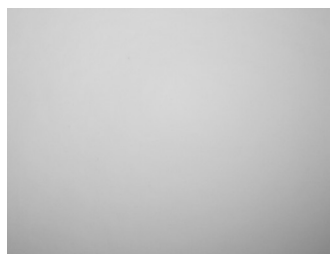


MT-Ti31 Titanium alloy

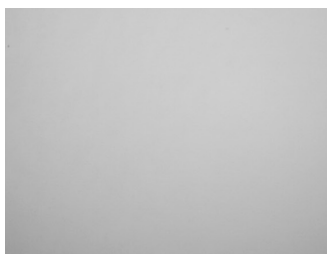
[Low density, high specific strength,
good corrosion resistance]

Material Introduction

Ti31 is a near α type titanium alloy. It has excellent properties such as low density, high specific strength, resistance to seawater and marine atmospheric corrosion, and good processability.



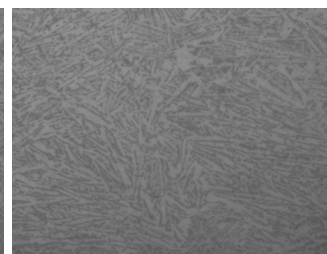
Sedimentary state
– transverse organization



Sedimentary state
– longitudinal organization



Heat treated state
– transverse microstructure



Heat treated state
– longitudinal microstructure

Applications

It is commonly used in aviation, petrochemicals, ships, nuclear industries, etc. And used for manufacturing products such as heat exchangers, condensers, valves, pump bodies, pipelines, flanges, pipe sockets, etc.

Chemical Composition (wt.%)

Ti	Al	Mo	Zr	Ni	Fe	Si	N	C	H	O
Bal.	2.5–3.5	0.5–1.5	0.8–2.0	0.3–1.0	≤0.3	≤0.15	≤0.04	≤0.16	≤0.008	≤0.15

Physical Property

Granularity(μm)			Sphericity	Loose density (g/cm^3)	Tap density (g/cm^3)	Flowability (s/50g)
D10	D50	D90				
≥15	30–40	≤63	≥0.9	≥2.4	≥2.6	≤35

Parameters

Laser power(W)	Laser speed(mm/s)	Scanning spacing(mm)
220	1050	0.1



Mechanical Property

Test Temperature	Heat-Treated		
	Tensile Strength/MPa	Yield Strength/MPa	Elongation/%
Room Temperature	≥ 720	≥ 650	≥ 16.0
250℃	≥ 540	≥ 460	≥ 20.0
350℃	≥ 480	≥ 370	≥ 20.0

Advanced Powder Metallurgy Technology



The powder metallurgy technology and equipment production line--
Electrode Induction Gas Atomization (AVI-EIGA)



The powder metallurgy technology and equipment production line--
Plasma Rotating Electrode Process (AVI-PREP)



Adapting Devices

10+ proprietary LPBF equipment systems supporting build sizes from 100 mm to 1500 mm.



MT170H



MT280



MT400M



MT450



MT650

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