Titanium Gr. 5

Description

Titanium Grade 5 has good tensile properties at ambient temperature and a useful creep resistance up to 300°C (570°F). Resistance to fatigue and crack propagation is excellent. Like most titanium alloys, Grade 5 has outstanding resistance to corrosion in most natural and many industrial process environments.

Uses: Titanium grade 5 is very often used in offshore and subsea oil and gas applications, and in general within the oil industry. It is also frequently used within the aerospace industry for a range of applications, as well as within the marine industry. Both aerospace and automotive manufacturers count on titanium grade 5 for engine components, and it is widely used in the power generation industry. This titanium alloy is also frequently used within the medical field, particularly for instruments and prosthetics, and even within the human body, in the form of surgical implants.

Chemical Composition

Element	%
N	0.05
C	0.10
H	0.01
Fe	0.40
O	0.20
Al	6.75
V	4.50
Ti	Remaining

Density	4.42 g/cm^3	0.16 lb/in^3
Melting Point	1650°C	3000°F
Coefficient of Expansion	9.0 µm/m °C (20 - 100°C)	5.0 x 10^{-6} in/in °F (70 - 212°F)
Modulus of Rigidity	40-44 kN/mm^2	5800-6380 ksi
Modulus of Elasticity	105-120 kN/mm^2	15230-17405 ksi

Heat Treatment

Condition	Type	Temperature	
		°C	°F
Spring Temper	Stress Relieve	250	480

Properties

Condition	Approximate Tensile Strength		Approximate Operating Temperature	
	N/mm^2	ksi	°C	°F
Spring Temper	1100-1400	159-203	-200 to +400	-330 to +750

*Information compiled using Alloy Wire International as source.

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