AMS 4981 - Titanium 6246

Typical Applications

Compressor Discs And Fan Blades

Airframe Components

Motor Racing Drivetrain Components

Subsea Sour Service

The main characteristics of 6246 are being light weight with exceptional strength and corrosion resistance. This high-performance alloy contains 6% aluminum and 4% zirconium along with titanium and trace elements.

The addition of aluminum and zirconium gives 6246 titanium increased strength compared to commercially pure titanium grades. It has an ultimate tensile strength around 1100 MPa, nearly double that of the Ti-6Al-4V alloy. Yet 6246 remains relatively light, with a density of 4.54 g/cm3.

Components made from 6246 can withstand tremendous mechanical stresses while remaining incredibly light.

6246 titanium offers great resistance to corrosion, the aluminum and vanadium stabilise the alloy against oxidation and prevent degradation.

Like other titanium alloys, 6246 is incredibly durable with a long service life. Products made from this alloy can withstand heavy wear and tear over years of use with minimal maintenance required. The material does not suffer from fatigue, galling, or seizing issues.

From a manufacturing perspective, 6246 titanium can be readily formed using standard metalworking techniques like machining, welding, and forming. However, the material is considered more difficult to process compared to other titanium grades due to its higher strength.

Whether used to construct aircraft components, high-performance automotive parts, or professional-grade sports gear, 6246 titanium delivers an unbeatable combination of strength, light weight, and corrosion resistance.

Key Features and Benefits

Superior strength at high temperatures up to 538°C (1000°F)

Excellent corrosion resistance

Outstanding strength-to-weight ratio

Exceptional durability

Long service life

Technical specification

Related Specifications

AMS 4981

AMS-T-9047

UNS R56260

NACE MR01-75

Chemical Composition (WT %)

	Min	Max
Al	5.5	6.5
Sn	1.75	2.25
Zr	3.5	4.5
Mo	5.5	6.5
Fe	-	0.15
N	1	0.04
O	-	0.15
C	-	0.04
H	-	0.0125

Typical Mechanical Properties

	Range	Unit
0.2% Proof Stress	1090-1240	MPA

Tensile Strength	1090-1240	MPA
Elongation	13-16	%
Reduction of Area	37-40	%

Note 1: Variations in mechanical properties are dependent on condition / heat treatment

* Every effort has been made to ensure that our technical specifications are accurate. However, technical specifications included within Dynamic Metals Ltd should be used as a guideline only and are subject to change without notice.

Applications +

This versatile alloy excels in demanding environments, particularly in:

- Aerospace components
- Aircraft structural parts
- High-performance automotive parts
- Marine applications
- Industrial equipment

Performance Characteristics +

The alloy undergoes rigorous solution and precipitation heat treatment, delivering:

- High tensile strength
- Excellent yield strength
- Good elongation properties
- Strong resistance to fatigue
- Reliable performance at elevated temperatures

Corrosion Resistance +

AMS4981 offers outstanding resistance to corrosion. The alloy's chemical composition creates a protective oxide layer, providing natural defence against environmental factors. This makes it ideal for applications in aggressive environments.

Quality Assurance +

Every batch of our AMS4981 products undergoes:

- Comprehensive chemical analysis
- Mechanical property testing
- Microstructure examination
- Surface quality inspection

Available Forms +

We supply 6246 in round bar, flat bar and forgings in annealed and Solution Treated & Aged conditions

Industry Standards +

Our AMS4981 products fully comply with:

- SAE Aerospace Material Specification
- International quality standards
- Industry-specific requirements

Advantages of AMS4981 +

Durability:

- Exceptional corrosion resistance
- Outstanding fatigue properties
- Reliable high-temperature performance
- Excellent strength-to-weight ratio

Processing Benefits:

- Good machinability
- Consistent heat treatment response
- Reliable welding characteristics
- Stable microstructure

Why Choose Dynamic Metals? +

- Extensive stock availability
- Full material certification
- Expert technical support
- Competitive pricing
- Fast UK delivery
- Complete traceability

This material is widely used in modern aerospace and motor sport applications, where reliability and performance cannot be compromised. Its careful regulation through AMS4981 ensures consistent quality across the aerospace industry. Contact our technical team today to discuss your AMS4981 requirements. We're here to help you select the right product for your application.

Need more information? ***Get in touch***

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