

# Ti 3Al 2.5V (Grade 9)

Smiths High Performance



Revision: SHP/english/datasheets/3al-2.5v/11.02.2025

Page: 1 of 2

## Improved ductility

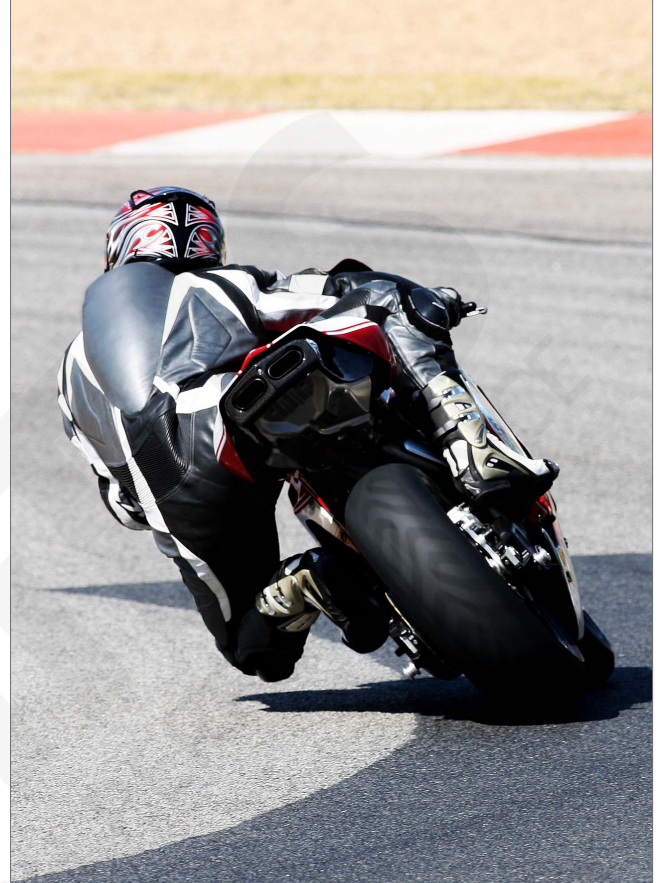
Grade 9 offers many benefits associated with typical titanium alloys but with improved ductility and malleability.

Like 6Al 4V, 3Al 2.5V (Grade 9) offers much greater strength when compared to commercially pure grades, but the improved ductility of the material means that it is not quite as strong.

The alpha-beta alloy offers moderately high strength and, unlike Grade 5, can be cold-worked. With improved workability, Grade 9 finds use in applications requiring greater precision and good formability.

3Al 2.5V (Grade 9) provides excellent corrosion resistance and good weldability. The alloy also provides a superior strength-to-weight ratio making it highly suitable for component manufacture in the aerospace, automotive and motorsport sectors. While less common than 6Al 4V, like all engineering materials, Grade 9 affords better suitability in particular application areas.

The alloy is a popular product for hydraulic tubing and pipe applications in the oil & gas sector. The material is most prevalent in tubular form due to the product's ductility. Other market sectors which use Grade 9 titanium include aerospace, motorsport, automotive and chemical processing.



## Typical Applications:

- Hydraulic systems
- Automotive and motorsport components
- Bike frames
- Exhausts

## Benefits:

- Improved ductility and malleability
- Excellent corrosion resistance
- Good low and high temperature performance
- Cold workable
- Ideal for precision machining

## About Smiths High Performance

Smiths High Performance is a leading stockholder and supplier of high-performance engineering materials. We are material supply chain partners supporting high-technology market sectors.



Further technical data available on the reverse of this Datasheet

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Page: 2 of 2

## \*Chemical Composition (weight,%)

	Ti	Al	V	Fe	O	C	N	H	Other (each)	Other (total)	Y
Min.	Rem	2.50	2.00								
Max.	Rem	3.50	3.00	0.30	0.12	0.050	0.020	0.005	0.10	0.40	0.005

\* Properties as per AMS 4944

## Mechanical Properties

Properties	Metric	Imperial
Tensile strength (MPa/ksi)	860	125
Yield strength (MPa/ksi)	725	105
Poisson's ratio	0.30	0.30
Elastic modulus (GPa/ksi)	100	14500
Shear modulus (GPa/ksi)	44	6380
Elongation at break (%)	10	10
Hardness, Vickers	300	300

## Equivalent Specifications

- AMS 4943
- AMS 4944
- ASTM B265 (9)
- ASTM B337 (9)
- ASTM B338 (9)
- ASTM B348 (9)
- ASTM B381 (9)
- DMS 2241
- GE B50TF117
- MIL T-9046
- MIL T-9047
- PWA 1260
- AMS 4954

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