

## AMS 4902, TITANIUM GRADE 2 SHEETS AND PLATES

Titanium Grade 2 is a commercially pure form of titanium. It is widely used because it combines excellent formability and moderate strength with superior corrosion resistance. This combination of properties makes Grade 2 titanium (ASTM B265, AMS 4902, UNS R50400) ideal for a large variety of chemical and marine as well as aerospace and medical applications.

| Specific Gravity  |                  |            |                   |                        |      |       |       |
|---|------------------|------------|-------------------|------------------------|------|-------|-------|
| 4.51 g/cm3  |                  |            |                   |                        |      |       |       |
| Typical Applications                                    |                  |            |                   | Related Specifications |      |       |       |
| Airframe skins  |                  |            |                   | ASTM B265              |      |       |       |
| Chemical Process vessels                                |                  |            |                   | ASME SB-265            |      |       |       |
| Exhausts components                                     |                  |            |                   | TA2                    |      |       |       |
| Medical and dental implants                             |                  |            |                   | AMS 4902               |      |       |       |
| Sputtering Targets                                      |                  |            |                   | UNS R50400             |      |       |       |
|   |                  |            |                   | W.Nr 3.7034            |      |       |       |
|   |                  |            |                   | AMS T 9046             |      |       |       |
| Chemical Composition (Wt %)                             |                  |            |                   |                        |      |       |       |
|   | C                | N          | O                 | Ti                     | Fe   | H     | Other |
| Min   | –                | –          | –                 | –                      | –    | –     | –     |
| Max   | 0.08             | 0.03       | 0.250             | Bal                    | 0.30 | 0.015 | 0.40  |
| Typical Mechanical Properties in the Annealed Condition |                  |            |                   |                        |      |       |       |
| 0.2% Proof Stress                                       | Tensile Strength | Elongation | Reduction of area | Hardness               |      |       |       |
| MPA   | MPA              | %          | %                 | HRB                    |      |       |       |
| Min   | Min              | Min        |                   |                        |      |       |       |
| 275   | 345              | 20         | 30                | 80                     |      |       |       |

What is AMS 4902?

AMS 4902 is a Titanium Grade 2 sheet and plate variation. This is an aerospace material specification known as AMS 4902. The combination of strength and fatigue resistance of this material makes it popular for use in the aerospace

industry.

## Benefits of AMS 4902

AMS 4902 offers several key benefits:

- Has a high strength to weight ratio, good for aircraft structures.
- Fatigue resistance is good, vital in components which are subjected to repeated stress
- Allows for easier fabrication of complex parts that have good machinability
- Enhancing safety in aerospace applications based on superior damage tolerance
- The strict AMS standards offer consistent and reliable performance of all packages.
- Widely available and familiar within the aerospace industry.

Does 4902 rust easily?

AMS 4902 does not rust in the traditional sense as rusting is a term which is specifically used for the corrosion of iron and steel. Although, Titanium variations including AMS 4902 can corrode under certain conditions. Although AMS 4902 has excellent corrosion resistance for many metals, it is not as corrosion resistant as compared to other alloys.

AMS 4902 is susceptible to pitting and intergranular corrosion especially in environments with high chloride content (i.e. marine atmospheres). However, to counter this the material is often treated in other ways such as anodising or alclad coating to give additional corrosion protection in aerospace use.

What Industries Commonly Require AMS 4902?

Common applications

This high-performance Titanium finds use in a wide range of applications, including:

- Aircraft structural components
- Jet engine parts
- Marine propeller shafts
- Chemical processing equipment
- Offshore oil and gas components
- High-performance automotive parts

\* This data has been supplied in good faith and is indicative only. It has been provided for general information purposes only and is not to be relied upon in place of the full specification. Mechanical properties can vary considerably with different supply conditions such as heat treatment or temper and product dimensions.

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## General Enquiries

T: +44 (0) 1525 217 556 [\(tel:+4401525217556\)](tel:+4401525217556)

E: [sales@dynamicmetalsltd.com](mailto:sales@dynamicmetalsltd.com) [\(mailto:sales@dynamicmetalsltd.com\)](mailto:sales@dynamicmetalsltd.com)



## UK Address:

*Head Office*

40 Eden Way  
Chartwell Business Park  
Leighton Buzzard  
Bedfordshire  
LU7 4FY

T: +44 (0)1525 217 556 [.\(tel:+441525217556\)](tel:+441525217556)

*Conversion Centre*

Suite 2 Meadowhall Riverside  
Meadowhall Road  
Sheffield  
South Yorkshire  
S9 1BW

T: +44 (0)1143 030 320 [.\(tel:+4401143030320\)](tel:+4401143030320)

*Registered Office (only)*

The Granary  
Crowhill Farm Ravensden Road  
Wilden  
Bedfordshire  
MK44 2QS

T: +44 (0)1525 217 556 [.\(tel:+441525217556\)](tel:+441525217556)



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