

CP Grade 4

Smiths Advanced Metals

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Commercially Pure Titanium

CP Grade 4 is an unalloyed titanium alloy offering a range of benefits.

CP Grade 4 offers high mechanical strength.

The alloy is the strongest of all commercially pure titanium grades currently available. Despite being stronger, the alloy offers lower toughness when compared to Grades 2 and 3. The material combines good machinability with excellent corrosion resistance and finds widespread use through industry due to the alloys impressive strength to weight ratio. We stock [Grade 4 commercially pure titanium bar](#) in the annealed condition in various sizes.



Grades / Specifications

- AMS4921
- AMS-T-9047, MIL-T-9047
- ASTM B348
- BS TA7
- 3.7065
- T60 CP Grade 4
- CP-70
- UNS R50700

Benefits

- Excellent corrosion resistance
- High strength
- Good machinability
- Good weldability

Key Applications

- Automotive components
- Chemical processing components
- Marine components
- Architectural structures

*Chemical Composition (weight %)

	Ti	C	Fe	N	O	H	Others (each)	Others (total)	
min.	Bal								
max.	Bal	0.08	0.50	0.05	0.40	0.0125	0.10	0.30	

* As per AMS 4921

*Mechanical Properties

	Minimum
UTS, MPa	552
0.2% PS, MPa	483
Elongation on 2 in longitudinal direction, %	15
Reduction of Area in longitudinal direction, %	30

* Properties as per AMS 4921

Comparisons with Aluminium

While aluminium is lighter than titanium, titanium is stronger and offers greater strength retention.

So the problem for designers is which alloy to choose? While titanium is heavier, less material is required due to the alloys increased strength. Aluminium is popular for CNC machining and additive manufacturing because it is more cost-effective. But although titanium is more expensive, its unique performance characteristics make the material highly desirable for specific applications.

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