

Commercially Pure Grade 4 Titanium

Alternate names: CP Grade 4 Titanium, CP 4, Grade 4, CP 70

Description:

Commercially Pure (CP) Grade 4 Titanium is a grade of unalloyed titanium. CP Titanium mechanical properties are controlled by chemistry; specifically, the input of Nitrogen, Oxygen and Iron which will increase strength of material. CP Grade 4 is higher in strength than CP Grades 1, 2, and 3. It is also commonly called "CP 70" which is in reference to its approximate yield strength. CP Grade 4 exhibits excellent corrosion resistance, as well as high strength. It is used in a variety of industries such as chemical, marine and aerospace.

Condition:

CP Grade 4 Titanium typically comes in the Annealed condition.

Weldability:

Good weldability.

Machinability:

Low cutting speeds, heavy feed rates, sharp tools, and ample cutting fluid are prescribed.

Common Specs:

AMS 4901	ASTM B348 Grade 4	AMS-T-9047 (CP-70 Grade 4)
AMS 4921	ASTM F67 Grade 4	MIL-T-9046 (CP-1 Grade 4)
ASTM B265 Grade 4	AMS-T-9046 (CP-1 Grade 4)	MIL-T-9047 (CP-70 Grade 4)

***The use of this information is strictly voluntary and should be used as a guideline only. This data contains generalizations and is in no way a substitute for your own research. This information is not intended as a warranty or fitness of any application. Should you require further information about Commercially Pure Grade 4 Titanium, please contact us and we will gladly refer you to additional sources.*



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PTG Grade 4 Data Sheet, created 9/17/18

Mechanical and Chemistry info for CP Grade 4 **Based on specs AMS 4901 and AMS 4921

Typical Composition Analysis

	<u>AMS 4901 (Plate, Sheet)</u>	<u>AMS 4921 (Bars, Forgings)</u>
Iron (Maximum)	0.50%	0.50%
Oxygen (Maximum)	0.40%	0.40%
Carbon (Maximum)	0.08%	0.08%
Nitrogen (Maximum)	0.05%	0.05%
Hydrogen (Maximum)	0.015%	0.0125%
Other Elements (Total)	0.30%	0.30%
Titanium	Balance	Balance

Typical Tensile Properties (Minimums)*

	<u>AMS 4901</u>	<u>AMS 4921</u>
Tensile	80 ksi	80 ksi
Yield	70-95 ksi	70 ksi
Elongation	15%	10-15%
Reduction of Area	N/A	25-30%

**Tensile property requirements vary based on orientation, section thickness/diameter, and cognizant engineering organization requirements.*

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To purchase AMS specs see: <http://standards.sae.org>

Please call 888.772.8984 or email sales@performancetitanium.com for a quote on Commercially Pure Grade 4 Titanium.

Data compiled from Dynamet "Technical Datasheet Titanium CP Titanium Grade 4, Edition Date: 07/01/2000", Timet "TMC-0159" Data Sheet, ATI "Technical Data Sheet", RTI "Titanium Alloy Guide" and SAE specification & data sheets, as well as "Materials Properties Handbook: Titanium Alloys" by Gerhard Welsch, Rodney Boyer, & E. W. Collings.



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