

Titanium Grade 2

Typical Applications

Components/equipment for architecture, medical engineering, automotive, chemical plant, pharmaceutical, brewing, food, oil & gas, pulp & paper and marine industries.

Product Description

CP (Commercially Pure) Grade 2 is the most frequently employed unalloyed titanium grade. It provides moderate strength (typical yield strength 352 MPa) combined with good ductility and formability and excellent weldability. Grade 2 titanium has a density of 4.51 g/cc - less than 60% that of steel.

Corrosion Resistance

This material offers high corrosion resistance in oxidising, neutral and mildly reducing media, including chlorides.

Material Specifications

- UNS R50400
- ASTM B348 Grade 2
- BS TA 2 to 5
- AMS 4902
- AIR 9182 T-40
- ASTM 265 Grade 2

Fabrication

- Weldability - excellent
- Specified bend radius for <0.070 in. x thickness - 2.0
- Specified bend radius for >0.070 in. x thickness - 2.5
- Welded bend radius x thickness - 3.0 (min.)

Availability

Bar, wire, strip, sheet, plate, foil, extrusions, forgings, seamless and welded pipe/tube.

Chemical Composition (weight %)

Weight (%)	C	Fe	N ₂	O	H (sheet)	H (bar)	Ti
Min							
Max	0.1	0.3	0.03	0.25	0.015	0.0125	Balance

Mechanical Properties

	Minimum	Typical
UTS, MPa	345	483
0.2% PS, MPa	276	352
Elongation on 2 in., %	20	28
Reduction of area, %	35	-
Elastic modulus, GPa	-	103
Charpy, V notch impact, J	41	-
Hardness, HV	-	160

ABOUT TITANIUM GRADE 2

Also known as titanium CP3, Titanium Grade 2, has an alpha crystalline structure. The alloy is widely used because it combines excellent formability and moderate strength with outstanding corrosion resistance. The density of Titanium Grade 2 is approximately 50% that of nickel alloys and stainless steels. Titanium Grade 2 has excellent corrosion resistance in oxidising media, alkali media, organic acids and compounds, aqueous salt solutions and hot gases. The alloy has useful corrosion resistance in nitric acids, mild reducing acids and wet chlorine or bromine gas. In addition, Titanium Grade 2 has outstanding resistance in seawater applications. This combination of features makes Titanium Grade 2 a candidate for a wide range of applications - from marine, oil & gas to chemical processing.

SPECIFICATIONS

UNS Number:	UNS R50400
Werkstoff Number:	3.7034, 3.7035
Standards:	ASTM B265, 348, 383, 363, B337, B338

APPLICATIONS

- Condensers
- Evaporators
- Reaction vessels
- Cryogenic vessels