Data Sheet
Grade 2 Titanium

The most commonly used grade for chemical process vessels and sea water applications.

Excellent corrosion resistance to environments from highly oxidizing to mildly reducing, including chlorides. Used in continuous service up to 800°F, and intermittent service to 1000°F.

Anneal 1200-1450°F for 15 minutes to 2 hours, air cool. Stress relieving is done at 900-1100°F for 30 minutes. Titanium Grades 1, 2, 3, and 4 cannot be strengthened by heat treatment.

The crystal structure of Grade 2 is 100% alpha (hexagonal close packed) at room temperature. Blocking, 1600-1700°F finishing 1500-1600°F.

Specifications

UNS: UNS R50400 **W. Nr./EN:** 3.7035 **AMS:** 4902, T-9046 **ASTM:** B 265, B 338, B 348, B 363
ASME: SB-265, SB-338, SB-348, SB-363 **MIL:** T-81556 **NACE:** MR0175

Chemical Composition, %

	C	N	O	H	Fe	Others, total	Ti
MIN	–	–	–	–	–	–	–
MAX	0.08	0.05	0.2	0.015	0.1	0.30	balance

Features

- Excellent corrosion resistance to environments from highly oxidizing to mildly reducing, including chlorides
- Titanium Grade 2 is slightly stronger than Titanium Grade 1

Applications

- Chemical process tanks and equipment
- Aerospace ducting
- Mufflers and exhaust components
- Medical and dental implants
- Heat exchangers

Physical Properties

Density: 0.163 lb/inch^3 **Nominal Beta Transus:** 1680°F **Approx Melting Point:** 3020°F **Grain Size:** ASTM 6 or finer

Temperature, °F	100	200	400	600	1000
Coefficient of Thermal Expansion, in/in°F x 10^{-6}	–	4.8	5.01	5.11	5.4
Thermal Conditioning Btu •ft/ft^2 • hr°F	12.5	12.5	1.8	1.2	–
Modulus of Elasticity, psi x 10^6	15.5	–	–	–	–

Mechanical Properties

Specified Room Temperature, AMS 4902

Tensile Min, ksi	50
0.2% Yield Strength, ksi	40 - 60
Elongation, min in 2 inch, %	20

Typical Elevated Temperature Properties

Temperature, °F	200	400	600
Tensile Strength, ksi	57	41	32
0.2% Yield Strength, ksi	40	24	41
Elongation, %	32	15	39

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Bulletin No. 1058USe 07/12

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