



Titanium Grade 4 (Commercially Pure) (A70), UNS R50700

Shaped, Flat, Square, Round, Fine Wire, Plated and Un-plated
Specifications: ASTM B265 GR4, AMS 4901, ASTM F67, MIL-T-9046CP1

Commercially Pure Titanium Grade 4 Alloy Description

Of all the commercially pure grades, Titanium Grade 4 has the highest strength. This alloy combines excellent corrosion resistance with good formability and weldability. Generally chosen for its corrosion resistance in a variety of chemical process equipment as well as marine and airframe applications. It can be used for parts requiring strength up to 400°F and oxidation resistance to 600°F.



Applications

- Metal gaskets
- Chemical processing
- Marine applications
- Medical devices
- Heat exchanger components
- Deep drawing applications

Chemistry Typical

- Titanium: Balance
- Iron: 0.50 max
- Oxygen: 0.40 max

Carbon: 0.80 max

Nitrogen: 0.05 max

Hydrogen: 0.015 max

Residuals each 0.10 max, total 0.40 max

Physical Properties

Density: 0.163 lbs/in³ (4.51 g/cm³)

Mean Coefficient of Thermal Expansion, in/in/°F (mm/m/°C)

70-212°F (20-100°C) 4.78×10^{-6} (8.6)

Thermal Conductivity: BTU-in/h-ft-°F (W/m-°K)

At 70°F (21°C): 119 (17.2)

Modulus of Elasticity, KSI (MPa)

15.2×10^3 (105×10^3) in tension

Melting Point: 3020°F (1660°C)

Mechanical Properties at Room Temperature

Properties: Annealed

Ultimate Tensile Strength: 80 KSI min (552 MPa min)

Yield Strength (0.2% offset): 70-90 KSI (483-655 MPa)

Elongation: 15% min

Properties Tempered

Commercially Pure Titanium Grade 4 can be cold rolled to achieve the temper properties required by specific customers and/or manufacturing requirements. Contact Ulbrich Wire for details.

Additional Properties

Corrosion Resistance

Refer to NACE (National Association of Corrosion Engineers) for recommendations.

Standard Wire Finishes

Extra Clean: (XC) Extra clean is also referred to as “bright annealed” or “bright annealed and cold rolled”

Grease (round wire only): Drawn in a heavy grease produces an “Ultra bright” finish for decorative applications

Soap (round wire only): Soap is used as a lubricant in the drawing process and is not removed. It acts as a lubricant during customer part forming operation. A soap finish is available in tempered products.

Plated: Many plating options are available.

*Special finishes are available: Contact Ulbrich Wire Sales with special finish and plating requests.

Forms

Continuous Coils

Cut to lengths

Precision cutting

Heat Treatment

Commercially Pure Titanium Grade 4 can only be hardened by cold work

Welding

For best results refer to: SSINA's “Welding of Stainless Steels and Other Joining Methods

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