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

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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/in^3 (4.51 g/cm^3)

Mean Coefficient of Thermal Expansion, in/in/°F (mm/m/°C)
70-212°F (20-100°C) 4.78 x 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 x 10^3 (105 x 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 4can 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 4can only be hardened by cold work

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