



Titanium Grade 3 (Commercially Pure) (A55), UNS R50550

Shaped, Flat, Square, Round, Fine Wire, Plated and Un-plated
ASTM B265 GR3, AMS 4900K, ASTM F67, MIL-T-9046CP2

Commercially Pure Titanium Grade 3 Wire Description

Commercially Pure Titanium Grade 3 has higher mechanical properties than Grade 2 while displaying similar ductility and formability. It can be used for parts requiring strength up to 400°F and oxidation resistance to 600°F.



Applications

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

Chemistry Typical

- Titanium: Balance
- Iron: 0.30 max
- Oxygen: 0.35 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): 138 (19.9)

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

Annealed

Ultimate Tensile Strength: 65 KSI min (448 MPa min)

Yield Strength: (0.2 Offset) 55-80 KSI (379-552 MPa)

Elongation: 18% min

Properties Tempered

Commercially Pure Titanium Grade 3 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 3 can only be hardened by cold work

Welding

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

Limitation of Liability and Disclaimer of Warranty: In no event will Ulbrich Stainless Steels and Special Metals, Inc., be liable for any damages arising from the use of the information included in this document or that it is suitable for the 'applications' noted. We believe the information and data provided to be accurate to the best of our knowledge but, all data is considered typical values only. It is intended for reference and general information and not recommended for specification, design or engineering purposes. Ulbrich assumes no implied or express warranty in regard to the creation or accuracy of the data provided in this document.

Copyright January 2014 Ulbrich Stainless Steels & Special Metals, Inc. – Revision 6.1.2015