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) \(4.78 \times 10^{-6}(8.6)\)

Thermal Conductivity: BTU-in/h-ft-°F (W/m-°K)
At 70°F (21°C): 138 (19.9)

Modulus of Elasticity, KSI (MPa)
\(15.2 \times 10^3 (105 \times 10^3)\) 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”

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