TI 15-3-3-3, (15-333), UNS R58153
Strip, Coil, Foil & Wire, AMS 4914

Applications
Airframe structures, ducting, honeycombs, hydraulic tubing, springs, fasteners

Description
Titanium Alloy 15-3-3-3 is a metastable beta titanium alloy that offers substantial weight reductions over other engineering materials if used in the solution treated condition. It has excellent cold formability. In the aged condition, the alloy has high strength.

Chemistry Typical
Vanadium: 14.0-16.0
Chromium: 2.5-3.5
Tin: 2.5-3.5
Aluminum: 2.5-3.5
Oxygen: 0.13 max
Carbon: 0.05 max
Nitrogen: 0.05 max
Hydrogen: 0.015 max
Iron: 0.25 max
Residuals each 0.10 max, total 0.40 max

Physical Properties
Density: 0.172 lbs/in³, 4.76 g/cm³
Modulus of Elasticity, ksi (MPa)
11.9 x 10³ (82 x 10³) in tension
Melting Point: 3034 °F (1668 °C)

Forms
Coil – Strip, Foil, Ribbon
Wire – Inquire with Ulbrich Shaped Wire

Limitation of Liability and Disclaimer of Warranty: In no event will Ulbrich Stainless Steels & 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 Revision 06.01.2015. Ulbrich Stainless Steels & Special Metals, Inc. All rights reserved.
Mechanical Properties at Room Temperature

**Properties: Annealed**

(1450 °F – A.Q.)
Ultimate Tensile Strength: 102 KSI min (703 MPa min)
Yield Strength (0.2% offset): 100 KSI min (690 MPa min)
Elongation: 12% min

**Tempered:**
Titanium Alloy 15-3-3-3 can be age hardened at 900 - 1000 °F, aging time varies for 2-3 hours.

**Aged Properties: Typical**

**Aging Temp/Time: 1000 °F / 8 Hours**
Ultimate Tensile Strength: 145 KSI min (1000 MPa min)
Yield Strength (0.2% offset): 170 KSI min (1172 MPa)
Elongation: 7% min

**Aging Temp/Time: 1100 °F / 8 Hours**
Ultimate Tensile Strength: 170 KSI min (1172 MPa min)
Yield Strength (0.2% offset): 160 KSI min (1103 MPa min)
Elongation: 5% min

**Aging Temp/Time: 1275 °F / 8 Hours**
Ultimate Tensile Strength: 180 KSI min (1241 MPa min)
Yield Strength (0.2% offset): 170 KSI min (1172 MPa min)
Elongation: 5% min

**Additional Properties**

**Corrosion Resistance**
Refer to NACE (National Associate of Corrosion Engineers) for recommendations.

**Finishes**
#1 – Hot rolled annealed and descaled. It is available in strip, foil and ribbon. It is used for applications where a smooth decorative finish is not required.
#2D – Dull finish produced by cold rolling, annealing and descaling. Used for deep drawn parts and those parts that need to retain lubricants in the forming process.
#2B – Smooth finish produced by cold rolling, annealing and descaling. A light cold rolling pass is added after anneal with polished rolls giving it a brighter finish than 2D.
#BA – Bright annealed cold rolled and bright annealed
#CBA – Course bright annealed cold rolled matte finish and bright anneal
#2 – Cold Rolled
#2BA – Smooth finish produced by cold rolling and bright annealing. A light pass using highly polished rolls produces a glossy finish. A 2BA finish may be used for lightly formed applications where a glossy finish is desired in the formed part.
Polished – Various grit finish for specific polish finished requirements.

* Not all finishes are available in all alloys – Contact Ulbrich Sales for more information.

**Wire Finishes**
Inquire with Ulbrich Wire.

**Heat Treatment**
Titanium Alloy 15-3-3-3 can be hardened by aging.

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