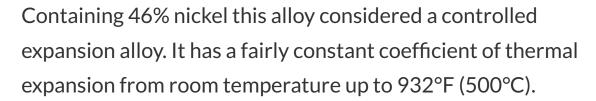


Alloy 46, UNS K94600

Shaped, Flat, Square, Round, Fine Wire, Plated and Un-plated Specifications: ASTM F-30

Alloy 46 Wire Description





Applications

Glass and ceramic to metal seals Electrical resistors

Chemistry Typical

Carbon: 0.05 max

Silicon: 0.30 max

Manganese: 0.80 max

Nickel: 46 nom

Chromium: 0.25 nom

Iron: Balance

Phosphorus: 0.025 max

Sulfur: 0.025 max

Aluminum: 0.10 max

Physical Properties

Density: 0.295 lb/in³, 8.2 g/cm³

Electrical Resistivity: ohm-cir-mil/ft, microhm-cm:

At 68°F (20°C): 277(47)

Thermal Conductivity: BTU-in/hr-ft2-°F (W/m•K):

77-212°F (25-100°C): 79.2(11)

Mean Coefficient of Thermal Expansion: µin/in-°F (µm/m-°C):

Contact Ulbrich Wire for information

Melting Point: 2600°F (1430°C)

Mechanical Properties at Room Temperature

Properties: Annealed Typical

Ultimate Tensile Strength: 74 KSI nom (510 MPa nom)

Yield Strength: 36 KSI nom (247 MPa nom)

Elongation: 30% nom Hardness: Rb73 nom

Properties Tempered

Alloy 46 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

HeatTreatment

Alloy 46 is non hardenable by heat treatment.

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