



Alloy 42-6, UNS K94760

Shaped, Flat, Square, Round, Fine Wire, Plated and Bare Wire
ASTM F31

Alloy 42-6 Description

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Alloy 42-6 was developed to match the thermal expansion characteristics of 0120 glass. An additional advantage of this alloy for glass-to-metals seals is the tight dark green oxide coating formed by wet hydrogen annealing at 1900/2200°F (1038/1204°C) for one hour

Applications

Compression seals
Electronic components

Chemistry Typical

Carbon: 0.07 max
Silicon: 0.30 max
Manganese: 0.25 max
Nickel: 42 nom
Chromium: 5.6 nom
Iron: Balance
Phosphorus: 0.025 max
Sulfur: 0.025 max
Aluminum: 0.20 max

Physical Properties

Density: 0.29 lb/in³, 8.2 g/cm³

Mean Coefficient of Thermal Expansion: $\mu\text{in/in-}^\circ\text{F}$ ($\mu\text{m/m-}^\circ\text{C}$):

77-212°F (25-100°C): 1.12 (2.20)

Melting Point: 2600°F (1430°C)

Mechanical Properties at Room Temperature

Properties: Annealed Typical

Ultimate Tensile Strength: 80 KSI nom (550 MPa nom)

Yield Strength: 41 KSI nom (282 MPa nom)

Elongation: 30% nom

Hardness: Rb 71 nom

Properties Tempered

Alloy 42-6 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

Alloy 42-6 is non hardenable by heat treatment.

Welding

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

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