

NICKEL SILVER ALLOYS

Flat, Shaped and Round Wire

Applications

Resistance Wire, Hardware, Optical components, Photographic applications, Screws, Rivets, Base metal for plated jewelry

Description

Nickel silvers are alloys that contain copper, nickel, and zinc (no silver). The nickel silvers have moderately high strength and good corrosion resistance. They have low to moderate strength and good aqueous corrosion resistance.

Chemistry Typical

UNS #	COPPER	NICKEL	LEAD	IRON	ZINC	OTHERS
C75200	63.0-66.5	16.5-19.5	0.05 max	0.25 max	Balance	0.50 Mn max
C76200	57.0-61.0	11.0-13.5	0.09 max	0.25 max	Balance	0.50 Mn max
C77000	53.5-56.5	16.5-19.5	0.05 max	0.25 max	Balance	0.50 Mn max

* Contact Ulbrich Wire for request regarding the availability of other copper alloys.

* Contact Ulbrich Technical Department for limits for additional trace elements and impurity levels.

* Nickel values include cobalt.

* Copper values include silver.

* Copper plus sum of named elements 99.5% min.

Physical Properties

Typical Density: 0.310 - 0.316 lbs/in³, 8.58 - 8.75 g/cm³

Electrical Conductivity: (% IACS at 68°F 20°C, annealed):
5.5 - 9%

Thermal Conductivity: BTU-in/hr-ft²-°F
At 68°F: 17 - 24

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

68 - 572 $^{\circ}\text{F}$: 9 - 9.3

Modulus of Elasticity: KSI (MPa)

18×10^3 in tension

Melting Range: 1981 $^{\circ}\text{F}$ (1083 $^{\circ}\text{C}$)

Forms

Profile, Round, Flat, Square

Mechanical Properties at Room Temperature

Properties: Annealed Typical

Ultimate Tensile Strength: 53 KSI min (365 MPa min)

Yield Strength: 25 KSI min (172 MPa min)

Elongation: 35% min

Properties: Tempered

These alloys can be cold worked to various tempers.

** Actual physical and mechanical properties are alloy dependent. Contact Ulbrich Technical Service for alloy specific properties.*

Additional Properties

Corrosion Resistance

Contact Ulbrich Wire for specific information.

Wire Finishes

XC - Extra clean. Annealed or annealed and cold rolled.

Contact Ulbrich Wire with special finish requests.

Heat Treatment

These alloys are non hardenable by heat treatment.

Welding

Contact Ulbrich Wire for specific information.

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