



C510 Bronze Alloy Wire

Introduction

Alloy C510 is an alloy with good strength, formability and stress relaxation characteristics and solderability. Applications include electronic parts, springs, switches, contacts and fasteners.

To learn more please contact our [sales department](#).

C510 Bronze Alloy Wire

Chemical Composition - Limits		Chemical Composition - Nominal	
Cu rem (99.5 min incl named elements)		Cu 94.8	
Sn 4.2-5.8		Sn 5.0	
Pb 0.05 max		P 0.20	
Zn 0.30 max			
Fe 0.10 max			
P 0.03-0.35			
Specifications		Fabrication Index	
ASTM B103		Soldering	5 - Excellent
ASTM B159		Hot Worked	2 - Fair
		Cold Worked	5 - Excellent
		Brazing	5 - Excellent
		Machinability	1 - Poor

Physical Properties

Annealing Range (Min)	900 °F
Annealing Range (Max)	1250 °F
Density	0.32 lb/in ³
Electrical Resistivity (Annealed)	69.1 Ω·cir-mil/ft @ 68 °F
Electrical Conductivity (Annealed)	15% IACS @ 68 °F
Thermal Conductivity	40 Btu/ft ² /ft·hr/°F @ 68 °F
Coefficient of Thermal Expansion	9.9 per °F (68-572 °F)
Modulus of Elasticity (Tension)	16 ksi
Modulus of Rigidity (Tension)	6 ksi
Melting Point (Solidus)	1,700 °F
Melting Point (Liquidus)	1,900 °F

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Round Wire

TEMPER NAME	TEMPER CODE	TENSILE STRENGTH (ksi)		MILL LIMITS (inch)
		Min	Max	
Annealed	O61	43.0	58.0	.0010 - .1285 inch
1/4 Hard	H01	60.0	76.0	
1/2 Hard	H02	80.0	97.0	
3/4 Hard	H03	96.0	115	
Hard	H04	108	128	

Square Wire

TEMPER NAME	TEMPER CODE	TENSILE STRENGTH (ksi)		MILL LIMITS (inch)
		Min	Max	
Annealed	O61	43.0	58.0	.0100 - .0808 inch
1/4 Hard	H01	60.0	76.0	
1/2 Hard	H02	80.0	97.0	
3/4 Hard	H03	96.0	115	
Hard	H04	108	128	

Rolled Flat

TEMPER NAME	TEMPER CODE	TENSILE STRENGTH (ksi)		MILL LIMITS (inch)
		Min	Max	
Annealed	O60	43.0	58.0	Thickness: .0100 - .0500 inch Width: .0150 - .2500 inch
1/2 Hard	H02	58.0	73.0	
Hard	H04	76.0	91.0	
Extra Hard	H06	88.0	103	
Spring	H08	95.0	110	

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