



## C510 Bronze Alloy Wire

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### 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 <sup>3</sup>
Electrical Resistivity (Annealed)	69.1 Ω·cir-mil/ft @ 68 °F
Electrical Conductivity (Annealed)	15% IACS @ 68 °F
Thermal Conductivity	40 Btu/ft <sup>2</sup> /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
1/2 Hard	H02	58.0	73.0	
Hard	H04	76.0	91.0	
Extra Hard	H06	88.0	103	Width: .0150 - .2500 inch
Spring	H08	95.0	110	

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