



## C151 Zirconium Copper Alloy Wire

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### Introduction

Alloy C151 has excellent solderability, high conductivity, and good strength. C151 has superior softening resistance compared to pure copper C110, which will soften upon heating, limiting the application environment. Applications can be found in high current interconnects, pin grids, welding wire, or other elevated temperature applications.

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

# C151 Zirconium Copper Alloy Wire

Chemical Composition - Limits		Chemical Composition - Nominal	
Cu 99.80 min - incl Ag (99.9 min incl named elements)		Cu 99.9	
Zr 0.05-0.15		Zr 0.10	
Specifications		Fabrication Index	
ASTM B246		Soldering	5 - Excellent
ASTM B747		Hot Worked	5 - Excellent
ASTM B888		Cold Worked	5 - Excellent
		Brazing	4 - Very Good
		Machinability	1 - Poor

## Physical Properties

Annealing Range (Min)	840 °F
Annealing Range (Max)	1025 °F
Density	0.323 lb/in <sup>3</sup>
Electrical Resistivity (Annealed)	10.9 Ω·cir-mil/ft @ 68 °F
Electrical Conductivity (Annealed)	95% IACS @ 68 °F
Thermal Conductivity	208 Btu/ft <sup>2</sup> /ft·hr/°F @ 68 °F
Coefficient of Thermal Expansion	9.8 per °F (68-572 °F)
Modulus of Elasticity (Tension)	17 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	OS15	34.0	40.0	.0010 - .1285 inch
1/4 Hard	H01	40.0	55.0	
1/2 Hard	H02	50.0	62.0	
Hard	H04	60.0	72.0	
Spring	H08	70.0		

## Square Wire

TEMPER NAME	TEMPER CODE	TENSILE STRENGTH (ksi)		MILL LIMITS (inch)
		Min	Max	
Annealed	OS15	34.0	40.0	.0100 - .0808 inch
1/4 Hard	H01	40.0	55.0	
1/2 Hard	H02	50.0	62.0	
Hard	H04	60.0	72.0	
Spring	H08	70.0		

## Rolled Flat

TEMPER NAME	TEMPER CODE	TENSILE STRENGTH (ksi)		MILL LIMITS (inch)
		Min	Max	
Annealed	OS15	37.0	42.0	Thickness: .0100 - .0500 inch  Width: .0150 - .2500 inch
1/2 Hard	H02	43.0	51.0	
Hard	H04	53.0	62.0	
Spring	H08	64.0	71.0	