



## C425 Copper-Zinc-Tin Alloy Wire

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### Introduction

Alloy C425 is a low zinc-containing alloy with good combination of tensile strength, electrical conductivity, formability and corrosion resistance. Applications include electrical springs, connectors and terminals.

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

# C425 Copper-Zinc-Tin Alloy Wire

Chemical Composition - Limits		Chemical Composition - Nominal	
Cu 87.0-90.0 (99.7 min incl named elements)		Cu 88.5	
Sn 1.5-3.0		Zn 9.5	
Zn rem		Sn 2.0	
Pb 0.05 max			
Fe 0.05 max			
P 0.35 max			
Specifications		Fabrication Index	
ASTM B591		Soldering	5 - Excellent
		Hot Worked	3 - Good
		Cold Worked	5 - Excellent
		Brazing	5 - Excellent
		Machinability	1 - Poor

## Physical Properties

Annealing Range (Min)	800 °F
Annealing Range (Max)	1300 °F
Density	0.316 lb/in <sup>3</sup>
Electrical Resistivity (Annealed)	37 Ω·cir-mil/ft @ 68 °F
Electrical Conductivity (Annealed)	28% IACS @ 68 °F
Thermal Conductivity	69 Btu/ft <sup>2</sup> /ft·hr/°F @ 68 °F
Coefficient of Thermal Expansion	10.2 per °F (68-572 °F)
Modulus of Elasticity (Tension)	16 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		42.0	52.0	.0010 - .1285 inch
1/4 Hard	H01	57.0	72.0	
1/2 Hard	H02	73.0	88.0	
3/4 Hard	H03	85.0	100	
Hard	H04	95.0	110	
Extra Hard	H06	105	120	
Spring	H08	115		

## Square Wire

TEMPER NAME	TEMPER CODE	TENSILE STRENGTH (ksi)		MILL LIMITS (inch)
		Min	Max	
Annealed		42.0	52.0	.0100 - .0808 inch
1/4 Hard	H01	57.0	72.0	
1/2 Hard	H02	73.0	88.0	
3/4 Hard	H03	85.0	100	
Hard	H04	95.0	110	
Extra Hard	H06	105	120	
Spring	H08	115		

## Rolled Flat

TEMPER NAME	TEMPER CODE	TENSILE STRENGTH (ksi)		MILL LIMITS (inch)
		Min	Max	

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## Rolled Flat

TEMPER NAME	TEMPER CODE	TENSILE STRENGTH (ksi)		MILL LIMITS (inch)
		Min	Max	
1/4 Hard	H01	49.0	59.0	.0100 - .0500 inch
1/2 Hard	H02	57.0	69.0	
3/4 Hard	H03	62.0	74.0	Width: .0150 - .2500 inch
Annealed		40.0	50.0	
Hard	H04	70.0	82.0	Thickness:
Extra Hard	H06	76.0	88.0	
Spring	H08	84.0	94.0	
Extra Spring	H10	92.0		