C521 Bronze Alloy Wire

Introduction

Alloy C521 is a high tin alloy of the phosphor bronze family. The additional tin relative to the more commonly used C510 results in higher mechanical properties with a modest reduction in electrical conductivity. Applications include electronic parts, springs, contacts, switch parts and fasteners.

To learn more please contact our sales department.

Fisk Alloy Wire Inc.
P.O. Box 26
10 Thomas Road N.
Hawthorne, NJ 07506 U.S.A.

Phone: (973) 825-8500
Fax: (973) 427-4585
E-mail: sales@fiskalloy.com

C521 Bronze Alloy Wire

Chemical Composition - Limits	Chemical Composition - Nominal
Cu rem (99.5 min incl named elements)	Cu 92.0
Sn 7.0-9.0	Sn 8.0
Pb 0.05 max	P 0.20
Zn 0.20 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	4 - Very Good
	Brazing	5 - Excellent
	Machinability	1 - Poor

Physical Properties

Annealing Range (Min)	900 °F
Annealing Range (Max)	1250 °F
Density	0.318 lb/in³
Electrical Resistivity (Annealed)	79.8 Ω·cir-mil/ft @ 68 °F
Electrical Conductivity (Annealed)	13% IACS @ 68 °F
Thermal Conductivity	36 Btu/ft²/ft·hr/°F @ 68 °F
Coefficient of Thermal Expansion	10.1 per °F (68-572 °F)
Modulus of Elasticity (Tension)	16 ksi
Modulus of Rigidity (Tension)	6 ksi
Melting Point (Solidus)	1,750 °F
Melting Point (Liquidus)	1,920 °F

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Round Wire

TEMPER NAME	TEMPER CODE	TENSILE STRENGTH (ksi) Min	Max	MILL LIMITS (inch)
Annealed		53.0	68.0	.0010 - .1285 inch
1/4 Hard	H01	74.0	91.0	
1/2 Hard	H02	95.0	115	
3/4 Hard	H03	113	135	
Hard	H04	125	150	

Square Wire

TEMPER NAME	TEMPER CODE	TENSILE STRENGTH (ksi) Min	Max	MILL LIMITS (inch)
Annealed		53.0	68.0	.0100 - .0808 inch
1/4 Hard	H01	74.0	91.0	
1/2 Hard	H02	95.0	115	
3/4 Hard	H03	113	135	
Hard	H04	125	150	

Rolled Flat

TEMPER NAME	TEMPER CODE	TENSILE STRENGTH (ksi) Min	Max	MILL LIMITS (inch)
Annealed		53.0	67.0	Thickness: .0100 - .0500 inch Width: .0150 - .2500 inch
1/2 Hard	H02	69.0	84.0	
Hard	H04	85.0	100	
Extra Hard	H06	97.0	112	
Spring	H08	105	119	

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Rolled Flat

TEMPER NAME	TEMPER CODE	TENSILE STRENGTH (ksi) Min	TENSILE STRENGTH (ksi) Max	MILL LIMITS (inch)
Extra Spring	H10	110	122	

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