



## MA19C Leaded Nickel Copper

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### Introduction

MA19C is a free machining, precipitation hardened leaded-nickel copper alloy featuring both high strength and electrical conductivity. Exhibiting excellent resistance to fatigue and thermal stress relaxation, MA19B / C19150 is very well suited for critical and high-reliability machined female electrical connector components such as spring contacts and coaxial pins.

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

# MA19C Leaded Nickel Copper

Chemical Composition - Limits	Chemical Composition - Nominal
Cu rem - incl Ag (99.5 min incl named elements)	Cu 98.0
Ni 0.8-1.2	Ni 1.0
Pb 0.8-1.2	Pb 1.0
Fe 0.05 max	
Sn 0.05 max	
P 0.15-0.35	

  

Fabrication Index	
Soldering	5 - Excellent
Hot Worked	2 - Fair
Cold Worked	4 - Very Good
Brazing	4 - Very Good
Machinability	4 - Very Good

## Physical Properties

Annealing Range (Min)	1290 °F
Annealing Range (Max)	1380 °F
Density	0.32 lb/in <sup>3</sup>
Electrical Resistivity (Annealed)	18.9 Ω·cir-mil/ft @ 68 °F
Electrical Conductivity (Annealed)	55% IACS @ 68 °F
Thermal Conductivity	146 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)	18 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 - Pretempered

TEMPER NAME	TEMPER CODE	TENSILE STRENGTH (ksi) Min	YIELD STRENGTH, 0.2% OFFSET (ksi) Min	MILL LIMITS (inch)	ELONGATION (%) 4" GL
1/4 HT	TH01	70.0	60.0	.01 - .2362	4.00
1/2 HT	TH02	80.0	70.0	.01 - .2362	3.00
3/4 HT	TH03	85.0	75.0	.01 - .2362	2.00
HT	TH04	95.0	85.0	.01 - .2362	1.00

## Round Rod - Pretempered

TEMPER NAME	TEMPER CODE	TENSILE STRENGTH (ksi) Min	YIELD STRENGTH, 0.2% OFFSET (ksi) Min	MILL LIMITS (inch)	ELONGATION (%) 4" GL
1/4 HT	TH01	70.0	60.0	.0625 - .2362	8.00
1/2 HT	TH02	80.0	70.0	.0625 - .2362	5.00
3/4 HT	TH03	85.0	75.0	.0625 - .2362	3.00
HT	TH04	95.0	85.0	.0625 - .2362	2.00