



# C18000

# BERYLLIUM FREE COPPER

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LEADING MANUFACTURER & MASTER DISTRIBUTOR OF BRASS, BRONZE, & COPPER ALLOYS



C18000 Copper Chromium Nickel Silicon is a Beryllium Free alloy alternative to C17500 & C17510 (Beryllium Copper). This alloy exhibits good electrical and thermal conductivity, with moderate strength and hardness. Typical applications include resistance welding (RWMA Class 3) electrodes, plastic injection and blow mold cores and cavities.

## Sizes Available From NBM

SOLID BAR . . . . . 1/2" - 21" diameter  
Other Forms and Shapes Also Available.

## Chemical Composition for C18000

	Cu <sup>(1)</sup>	Cr	Fe	Ni <sup>(2)</sup>	Si
min/max	Rem	.10-.8	.15	1.8-3.0	.40-.8
nominal	-	.45	-	2.4	.6

(1) Cu value includes Ag.  
(2) Includes Co.  
Note: Cu + Sum of Named Elements, 99.5% min.

## Typical Uses for C18000

### Industrial

Resistance Welding Tips, Resistance Welding Wheels and Fixtures, Stud Welding Collets and Tips, Heat Sink Inserts in Steel Plastic Molds, Cores, Core & Ejector Pins for Injection Molds, Plugger Tips for Metal Die Casting Machines, Welding Dies for Wire and Flash, Sprue Bushing, Cavities for Injection Molds, Blow Pins, Pinch Offs, Mold Cavities for Blow Molds, Mold Cavities for Permanent Molds

## Mechanical Properties

0.2% OFFSET YIELD STRENGTH	ULTIMATE TENSILE STRENGTH	ELONGATION	HARDNESS
75 ksi 520 MPa	95 ksi 655 MPa	15%	94 HRB (BHN 210)

## Physical Properties

ALLOY	ELASTIC MODULUS	MELTING POINT (SOLIDUS)	ELECTRICAL CONDUCTIVITY	DENSITY	THERMAL EXPANSION	THERMAL CONDUCTIVITY (25 °C)	HEAT CAPACITY (25 °C)
C18000	18,500 ksi 130GPa	~1900 °F ~1040 °C	48% IACS 28 MS/m	.318 lb/in <sup>3</sup> 8.81 g/cm <sup>3</sup>	9.72 x 10 <sup>-6</sup> °F <sup>-1</sup> 17.5 x 10 <sup>-6</sup> °C <sup>-1</sup>	130 BTU/hr-ft-°F 225 W/m-K	.095 BTU/lb-°F 0.398 J/g-K



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