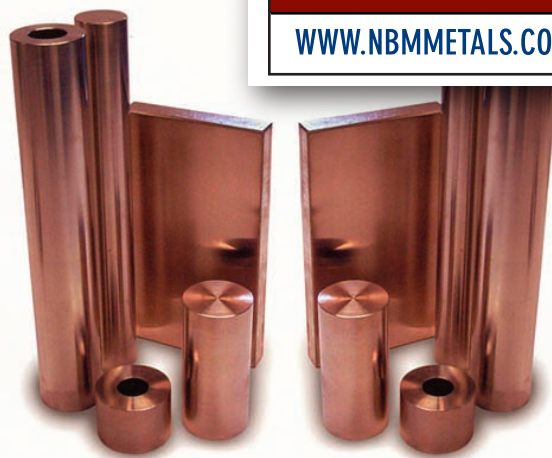


**C 17500  
17510**

# BERYLLIUM COPPER

[WWW.NBMMETALS.COM](http://WWW.NBMMETALS.COM)

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



## Offered in solid bars, plates, and discs.

C17500/C17510 offer a combination of high electrical and thermal conductivity with good strength compared to most copper based alloys.

C17500 alloy is the mirror image of alloy C17510 in terms of its properties and characteristics. The alloys differ in that C17500 specifies a cobalt alloying addition (2.40-2.70 %) and alloy 17510 specifies a nickel alloying addition (1.40-2.20 %), but their performance are the same.

### Sizes Available From NBM

- SOLID BAR . . . . . 1/4" - 6" diameter
- RECTANGLES . . . . . 3/8" x 1/2" - 1" x 3" thickness x width
- SQUARES . . . . . 3/8" - 3" square
- PLATES . . . . . 2" - 5" thickness
- DISCS & RINGS. . . . . forged to size
- HONED TUBES. . . . . up to 4" OD

### Chemical Composition for C17500

	Cu <sup>(1)</sup>	Al	Be	Co	Fe	Si
min/max	Rem	.20	.40-.70	2.4-2.7	.10	.20
nominal	96.9	-	.55	2.6	-	-

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

### Chemical Composition for C17510

	Cu <sup>(1)</sup>	Al	Be	Co	Fe	Ni	Si
min/max	Rem	.20	.20-.60	.30	.10	1.4-2.2	.20
nominal	97.8	-	.40	-	-	1.8	-

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

### Typical Uses for C17500 and C17510

#### Electrical

Fuse Clips, Conductors, Relay Parts, Switch Parts, Connectors, Instrument Parts

#### Fasteners

Fasteners

#### Industrial

Resistance Welding Equipment, Springs, Seam Welding Wheels, Dies, Resistance and Spot Welding Structural Components, Die Casting Plunger Tips, Permanent Molds, High Flux Electromagnets, Thermal Transfer Plates, Tooling for Plastic Tooling, Springs

#### Other

Stressed Parts  
Honed Tubes - Automotive Applications

### Spec Equivalents

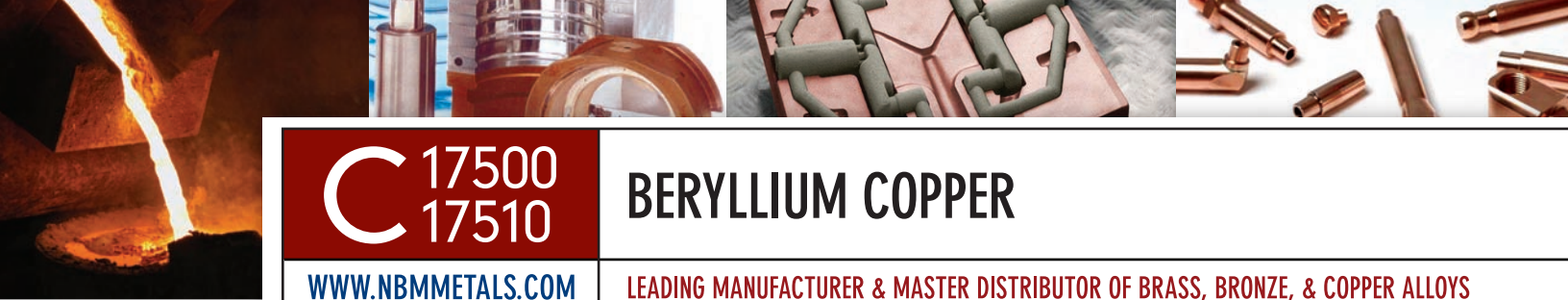
ASTM B-441, B-534  
SAE J461, J463



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17510**  
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# BERYLLIUM COPPER

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

## Room Temp Tensile & Hardness Data

ALLOY	TEMPER	SECTION SIZE (INCHES)	TENSILE (KSI) MIN	YIELD (KSI) MIN	ELONGATION IN HD MIN	ROCKWELL HARDNESS (B)	ELECTRICAL COND. IACS %
C17500 C17510	A TB00	All Sizes	35 - 55	10 - 30	20 - 35%	20 - 50	20 - 30%
	AT TF00	All Sizes	100 - 130	80 - 100	10 - 25%	92 - 100	45 - 60%
	HT TH04	Up to 3"	110 - 140	95 - 125	5 - 25%	95 - 102	48 - 60%

## Physical Properties

- Melting Point - Liquidus . . . . . 1955 F
- Melting Point - Solidus . . . . . 1885 F
- Density . . . . . 0.311 lb/in<sup>3</sup> at 68 F
- Specific Gravity . . . . . 8.62
- Electrical Resistivity . . . . . 22.8 ohms-cmil/ft @ 68 F
- Electrical Conductivity . . . . . 45 %IACS @ 68 F
- Thermal Conductivity . . . . . 120.0 Btu · ft/(hr · ft<sup>2</sup>·°F) at 68F
- Coefficient of Thermal Expansion . . . . . 9.8 · 10<sup>-6</sup> per °F (68-572 F)
- Specific Heat Capacity . . . . . 0.1 Btu/lb/°F at 68 F
- Modulus of Elasticity in Tension . . . . . 19000 ksi
- Modulus of Rigidity . . . . . 7500 ksi
- Machinability Rating . . . . . 40



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