



**NGK BERYLCO**  
ROD, BAR & TUBE  
*Reliable products for  
superior performance.*

## CHARACTERISTICS OF **NGK BERYLCO** ROD, BAR & TUBE

Berylco alloys are preferred in critical applications ranging from miniature electronic connectors to aircraft bushings to oil field drill tooling applications. The cornerstone of our business and the products we produce is "RELIABILITY". NGK Berylco alloy characteristics include:

- ***High Strength, Moderate Conductivity System***
- ***High Conductivity, Moderate Strength***
- ***Machinability***
- ***Abrasive Wear Resistance***
- ***Corrosion Resistance***
- ***High Fatigue Strength***
- ***Non-Magnetic***
- ***Anti-Galling***

**NGK BERYLCO** · ROD, BAR & TUBE  
WORLD-CLASS QUALITY FOR A GLOBAL MARKETPLACE

## NORMAL CHEMICAL COMPOSITION, TYPICAL PROPERTIES AND SPECIFICATIONS

### BERYLCO 25 (C17200)

Chemistries	Be	1.80 - 2.00
	Ni + Co	0.20 min.
	Ni + Co + Fe	0.6 max.
	Cu + Be + Ni + Co + Fe	99.5% min.

### MECHANICAL PROPERTIES

Temper	A (TB00)	H (TD04)	AT (TF00)	HT (TH04)
Tensile Strength ksi	60-85	90-125	165-200	180-220
Tensile Strength MPa	410-590	620-860	1140-1380	1240-1520
0.2% Yield Strength ksi min.	20	75	145	155
0.2% Yield Strength MPa min.	140	520	1000	1070
Elongation in 4D % min.	20	8	4	2
Hardness Rockwell	B 45-85	B 88-102	C 36-42	C 38-44
Electrical Conductivity %IACS min.	17	15	22	22
Typical Age Hardening	...	...	3 hrs @ 600°F	2 hrs. @ 600°F

### TYPICAL PHYSICAL PROPERTIES

Density lb. / in. <sup>3</sup> @ 68°F	0.298
Coefficient of Thermal expansion 68°F to 390°F	9.7 x 10 <sup>-6</sup>
Thermal conductivity BTU/(ft. x hr. x °F) @ 68°F	60
Electrical Conductivity % IACS @ 68°F	22
Thermal Capacity (specific heat) BTU/(lb. x °F) @ 68°F	0.1
Modulus of elasticity psi	18.5 x 10 <sup>6</sup>
Modulus of rigidity (Torsion Modulus) psi	7.2 x 10 <sup>6</sup>
Magnetic permeability μ	1.0025
Machinability	20

### SPECIFICATIONS

ASTM	B196 C17200
Federal	QQC530, C17200
AMS	4650, 4651, 4533, 4534, 4535
RWMA	Class 4
CDA	C17200
DIN	17666

## **Applications and Characteristics of NGK Berylco Alloys**

APPLICATION	CHARACTERISTICS
Oil Patch – Energy Exploration	BeCu 25 Alloy has good resistance to galling, high strength, high fatigue strength, non-magnetic property and good corrosion resistance. Ideal material for drill string applications: drill collars, saver subs, wire line, sheathing, etc.
Bushings	BeCu 25 Alloy has good wear, resistance to galling and high strength. Therefore, it is excellent for bushings for aircraft, drilling and machine tool industry.

**Rod sizes from 1/32" to 6". Tube made to order.**



NGK Metals Corporation

917 State Highway 11 South • Sweetwater, Tennessee 37874  
 1.800.523.8268 • FAX: 877.645.2328  
 email: marketing@ngkmetals.com • www.ngkmetals.com

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