CuBe2 AT Beryllium Solid Copper Rod ASTM B196 High Strength

Our Product Introduction

Basic Information

- Place of Origin: china
- Brand Name: jinshunlai
- Certification: IOS AISI, ASTM
- Model Number: 0.1mm-900mm
- Minimum Order Quantity: 1kg
- Price: contact us
- Delivery Time: 5days
- Payment Terms: L/C, T/T , Western Union,D/P
- Supply Ability: 90000ton

Product Specification

- Color: Red Yellow
- Highlight: **CuBe2 Solid Copper Rod**, **Beryllium Solid Copper Rod**, **CuBe2 beryllium copper rods**

Our Product Introduction

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Product Description

CuBe2 AT Beryllium Solid Copper Rod ASTM B196

CuBe2 AT Beryllium Copper Rods ASTM B196 Standard Dia. 18mm Length 2000mm

Product Normal Description:

Product Name: Beryllium copper rods

Grade: CuBe2, ASTM B194

State: AT(TF00)

Product Brand: CUBERYLLIUM®

International Specifications:

AMS: 4650, AMS 4530, AMS 4651, AMS 4533, AMS 4535, AMS 4534, ASTM-B-196, QQ-C-530, ASNA 3417, ASNA 6110, NF L-14709
Alloy Description: Copper Beryllium (1.8%)
UK: CuBe2, Alloy 25
EU: (France)Alliage25-CuBe1.9, CuBe2-NFL14721

Copper Beryllium Alloys combine high strength with good electrical and thermal conductivities. The high strength of copper beryllium alloys is accomplished by either age hardening or precipitation hardening. Valued for their non-magnetic and non-sparking qualities, Copper Beryllium Alloys are available as high-strength and high conductivity alloys. CUBERYLLIUM® supplies Copper Beryllium in a range of tempers, and in strip, rod, bar, wire, rod, tube, and plate form. Beryllium copper alloys are used in a variety of applications including automotive, industrial, and oil & gas drilling. CUBERYLLIUM® is your go-to beryllium supplier.

Chemical Composition of CuBe2 AT Beryllium Copper Alloy:

Product Grade: CUBERYLLIUM ®-172(UNS. C17200)

Beryllium(Be): 1.80-2.00%

Cobalt(Co) + Nickel(Ni): 0.20% Min

Cobalt(Co) + Nickel(Ni) + Iron(Fe): 0.60% Max

Lead: 0.02% Max

Copper(Cu): Balance

Note: Copper plus additions equal 99.5% Minimum.

Typical Physical Properties of CuBe2 AT Beryllium Copper Alloy:

Density (g/cm3): 8.36
Density before age hardening (g/cm3): 8.25
Elastic Modulus (kg/mm2 (103)): 13.4
Thermal Expansion Coefficient (20 °C to 200 °C m/m/°C): 17 x 10-6
Thermal Conductivity (cal/(cm-s-°C)): 0.25
Melting Range (°C): 870-980

Mechanical and Electrical Properties of CuBe2 AT Beryllium Copper Rods:

Temper(*) Diameter Heat Treatment Tensile Strength ksi
Elongation Percent

(Min)

Electrical Conductivity Percent

IACS

Hardness Rockwell B or C Scale
A(TB00) ALL SIZE / 400~600 30 15~19 B45~85
1/2H(TB04) 5~40 / 550~700 10 15~19 B78

H(TD04)
5~10 / 660~900 5 15~19
B88

10~25 / 620~860 5 15~19
25 / 590~830 5 15~19
AT(TF00) ALL SIZE 3 hr 320°C 1100~1380 2 22~28 C35~42
HT(TH04) 5~10 2 hr 320°C 1200~1550 1 22~28 C37~45
10~25 1150~1520 1 22~28 C36~44
25 1120~1480 1 22~28 C35~44

The most important Technology of CUBERYLLIUM ®

A: Heat treatment

Heat treatment is the most important process for this alloy system. While all copper alloys are hardenable by cold working, beryllium copper is unique in being hardenable by a simple low temperature thermal treatment. It involves two basic steps. The first is called solution annealing and the second, precipitation or age hardening.

B: Solution Annealing

For the typical alloy CuBe1.9 (1.8- 2%) the alloy is heated between 720°C and 860°C. At this point the contained beryllium is essentially “dissolved” in the copper matrix (alpha phase). By rapidly quenching to room temperature this solid solution structure is retained. The material at this stage is very soft and ductile and can be readily cold worked by drawing, forming rolling, or cold heading. The solution annealing operation is part of the process at the mill and is not typically used by the customer. Temperature, time at temperature, quench rate, grain size, and hardness are all very critical parameters and are tightly controlled by ohmalloy.

C: Age Hardening

Age hardening significantly enhances the material’s strength. This reaction is generally carried out at temperatures between 260°C and 540°C depending on alloy and desired characteristics. This cycle causes the dissolved beryllium to precipitate as a beryllium rich (gamma) phase in the matrix and at the grain boundaries. It is the formation of this precipitate which causes the large increase in material strength. The level of mechanical properties attained is determined by the temperature and time at temperature. It should be recognized that beryllium copper has no room temperature aging characteristics.

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