



M25 Leaded Beryllium Alloy 5mm Copper Wire High Strength ASTM B197

Our Product Introduction

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Basic Information

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



Product Specification

- Application: Electrical
- Color: Red
- Conductor Material: Copper
- Product Name: Solid Bare Copper Wire
- RoHS Compliant: Yes
- Standards: UL, CSA
- Wire Gauge: 14 AWG
- Color: Red Yellow
- Highlight: Alloy 5mm copper wire,
ASTM 5mm copper wire, M25 copper alloy wire



More Images



Product Description

Typical Physical Properties of Alloy 25(UNS.C17200) Copper Beryllium 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 Alloy 25(UNS.C17200) Copper Beryllium Round Wires:

International Specification of Alloy 25(UNS.C17200) Copper Beryllium Alloy:

| Product Type | Temper Type |
|--------------------|---|
| Bar | ASTM B196 |
| | Military Mil-C-21657 |
| Rod | ASTM B196 |
| | Military Mil-C-21657 |
| Wire | ASTM B197, AMS4725, SAE J461,463, RWMA Class 4 |
| European Standards | CuBe2, Alloy 25, BrB2, DIN.2.1247, CW101C to EN |

Note:

ASTM: American Society for Testing and Materials

SAE: Society of Automotive Engineers

AMS: Aerospace Materials Specification(Published by SEA)

RWMA: Resistance Welder Manufacturers' Association

Note: Unless otherwise specified, material will be produced by ASTM.

Key Technology of Beryllium Copper(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.

Solution Annealing

For the typical alloy CuBe2Pb) 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.

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.

Fabrication

| JOINING TECHNIQUE | SUITABILITY |
|--------------------------------|-----------------|
| Brazing | Good |
| Butt Weld | Fair |
| Capacity for Being Cold Worked | Excellent |
| Capacity for Being Hot Formed | Good |
| Coated Metal Arc Welding | Good |
| Gas Shielded Arc Welding | Good |
| Machinability rating | 50 |
| Oxyacetylene Welding | Not Recommended |
| Seam Weld | Fair |
| Soldering | Good |
| Spot Weld | G |



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