



C63000 Alloy from Concast

Concast Metal Products Co. has been successfully satisfying a broad range of applications and industries with our wrought products. Specifically, our **C63000 nickel aluminum bronze** alloy is used in the power generation/energy, power transmission and control, marine and aerospace markets.

Industrial Applications

- Valve Seats | Plunger Tips | Shafting | Pump Parts
- Condenser Tube for Power Stations and Desalting Units
- Cams | Gears | Valve Guides | Aircraft Parts
- Pump Shafts | Structural Members | Valve Balls
- Corrosion-Resistant Articles | Bushings | Bearings
- Hydraulic Bushings for Earth-Moving Equipment
- Tanks | Heat Exchanger Flanges
- Heat Exchangers | Headers

Marine Applications

- Nuts | Propellers | Pump Parts | Bolts



C63000 Is a Concast Standard-Stocked Alloy

P.O. Box 816 | Mars, PA 16046
800.626.7071 | **724.538.3956** fax
www.concast.com | sales@concast.com

► All Concast plants are ISO 9001 certified

www.concast.com



C63000 Alloy Similar or Equivalent Specification

| CDA | ASTM | ASARCON | SAE | AMS | FEDERAL | MILITARY | OTHER |
|--------|-------------|---------|------------|------|----------------|----------|-------|
| C63000 | B150, B150M | | J461, J463 | 4640 | QQ-C-465B AMD1 | | |

C63000 Alloy Chemical Composition

| Cu% | Sn% | Zn% | Fe% | Ni% | Al% | Mn% | Si% | |
|------|------|------|-----------|-----------|------------|------|------|--|
| Rem. | 0.20 | 0.30 | 2.00-4.00 | 4.00-5.50 | 9.00-11.00 | 1.50 | 0.25 | Chemical Composition according to ASTM B150/B150M-14. Note: Single values represent maximums. |

C63000 Alloy Physical Properties

| | US Customary | Metric | |
|----------------------------------|--|---|--------------------------------------|
| Melting Point - Liquidus | 1930° F | 1054° C | Physical Properties provided by CDA. |
| Melting Point - Solidus | 1895° F | 1035° C | |
| Density | 0.274 lb/in ³ at 68° F | 7.58 gm/cm ³ at 20° C | |
| Specific Gravity | 7.58 | 7.58 | |
| Electrical Conductivity | 7% IACS at 68° F | 0.041 MegaSiemens/cm at 20° C | |
| Thermal Conductivity | 22.6 Btu · ft/(hr · ft ² · °F) at 68° F | 39.1 W/m · °K at 20° C | |
| Coefficient of Thermal Expansion | 9 · 10 ⁻⁶ per °F (68°-572° F) | 15.5 · 10 ⁻⁶ per °C (20°-300° C) | |
| Specific Heat Capacity | 0.09 Btu/lb/°F at 68° F | 377.1 J/kg at 293° K | |
| Modulus of Elasticity in Tension | 17500 ksi | 120650 MPa | |
| Modulus of Rigidity | 6400 ksi | 44130 MPa | |

C63000 Alloy Mechanical Properties

| SIZE RANGE: UP TO 1" ROD | | | | | | Mechanical Properties according to ASTM B150/B150M-14. HR50 Drawn and Stress Relieved Temper. |
|---|---|-----|---|---------------------------------|----------------|--|
| Tensile Strength, min | Yield Strength, at .5% extension under load min | | Elongation, 4x diameter or specimen thickness | Brinell Hardness (3000 kg load) | Remarks | |
| ksi | MPa | ksi | MPa | % | min to max BHN | |
| 110 | 760 | 68 | 470 | 10 | 201 to 248 | |
| SIZE RANGE: OVER 1" TO 2" INCLUSIVE ROD | | | | | | |
| Tensile Strength, min | Yield Strength, at .5% extension under load min | | Elongation, 4x diameter or specimen thickness | Brinell Hardness (3000 kg load) | Remarks | |
| ksi | MPa | ksi | MPa | % | min to max BHN | |
| 110 | 760 | 60 | 415 | 10 | 201 to 248 | |
| SIZE RANGE: OVER 2" TO 3" INCLUSIVE ROD | | | | | | |
| Tensile Strength, min | Yield Strength, at .5% extension under load min | | Elongation, 4x diameter or specimen thickness | Brinell Hardness (3000 kg load) | Remarks | |
| ksi | MPa | ksi | MPa | % | min to max BHN | |
| 105 | 725 | 55 | 380 | 10 | 187 to 241 | |

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Copper Development Association Inc.
Copper Alliance

