AMS 4634-C64200

✓ STANDARD-STOCKED PRODUCT

Extruded and Drawn

Product Description:	Aluminum Bronze
Tempers:	HR50 Drawn and Stress Relieved
Solids:	3/16" to 6" O.D.
Hex:	½" to 2" O.D.
Standard Lengths:	144"

Typical Uses

Automotive	valve guides (automobile engine)
Electrical	pole line hardware
Fasteners	bolts, nuts
Industrial	cams, gears, valve bodies, valve components, valve stems
Marine	hardware

Similar or Equivalent Specification

CDA	ASTM	SAE	AMS	Federal	Military	Other
C64200	B150 B150M	J461 J463	4634	QQ-C-465		

Chemical Composition

Cu%[1]	Pb%	Sn%	Zn%	Fe%	Ni%[2]	Al%	Mn%	Si%
Rem.	0.05	0.20	0.50	0.30	0.25	6.30-7.60	0.10	1.50-2.20

Chemical Composition according to AMS 4634

[1]Cu value includes Ag. [2]Ni value includes Co.
Note: Cu + Sum of Named Elements, 99.5% min. Single values represent maximums.

Machinability

Copper Alloy UNS No.	Machinability Rating	Density (lb/in^3 at 68 ° F)
C64200	60	0.278

CONCAST METAL PRODUCTS CO.

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Mechanical Properties

Mechanical Properties according to AMS 4634
C64200
HR50 Drawn and Stress Relieved Temper

SIZE RANGE: UP TO 1/2" BARS AND RODS INCLUSIVE

Tensile Strength, min		Yield Strength, at 0.5% Extension Under Load, min		Elongation, in 4D, min	Hardness, internal	Remarks
ksi	MPa	ksi	MPa	%	HRB	
90	621	45	310	9	>80 inclusive	

SIZE RANGE: OVER 1/2" TO 1" BARS AND RODS INCLUSIVE

Tensile Strength, min		Yield Strength, at 0.5% Extension Under Load, min		Elongation, in 4D, min	Hardness, internal	Remarks
ksi	MPa	ksi	MPa	%	HRB	
85	586	45	310	12	>80 inclusive	

SIZE RANGE: OVER 1" TO 2" BARS AND RODS INCLUSIVE

Tensile Strength, min		Yield Strength, at 0.5% Extension Under Load, min		Elongation, in 4D, min	Hardness, internal	Remarks
ksi	MPa	ksi	MPa	%	HRB	
80	552	42	290	12	>80 inclusive	

SIZE RANGE: OVER 2" TO 3" BARS AND RODS INCLUSIVE

Tensile Strength, min		Yield Strength, at 0.5% Extension Under Load, min		Elongation, in 4D, min	Hardness, internal	Remarks
ksi	MPa	ksi	MPa	%	HRB	
75	517	35	241	15	>80 inclusive	

Physical Properties

	US Customary	Metric
Melting Point – Liquidus	1840 ˚F	1004 ˚C
Melting Point – Solidus	1800 ˚F	982 ˚C
Density	0.278 lb/in^3 at 68 ˚F	7.69 gm/cm^3 at 20 ˚C
Specific Gravity	7.69	7.69
Electrical Conductivity	8% IACS at 68 ˚F	0.047 MegaSiemens/cm at 20 ˚C
Thermal Conductivity	26 Btu/sq ft/ft hr/˚F at 68 ˚F	45 W/m at 20 ˚C
Coefficient of Thermal Expansion 68-572	10 · 10^{-6} per ˚F (68-572 ˚F)	17.3 · 10^{-6} per ˚C (20-300 ˚C)
Specific Heat Capacity	0.09 Btu/lb/˚F at 68 ˚F	377.1 J/kg at 20 ˚C
Modulas of Elasticity in Tension	16000 ksi	110317 MPa
Modulus of Rigidity	6000 ksi	41369 MPa

Physical Properties provided by CDA

Fabrication Properties

Technique	Suitability
Soldering	Not Recommended
Brazing	Fair
Oxyacetylene Welding	Not Recommended
Gas Shielded Arc Welding	Fair
Coated Metal Arc Welding	Fair
Spot Weld	Fair
Seam Weld	Fair
Butt Weld	Fair
Capacity for Being Cold Worked	Poor
Capacity for Being Hot Formed	Excellent
Forgeability Rating	80
Machinability Rating	60

Fabrication Properties provided by CDA

Thermal Properties

Treatment	Minimum*	Maximum*
Annealing	1100	1300
Hot Treatment	1300	1600

Thermal Properties provided by CDA

*Temperature is measured in Fahrenheit.

Common Fabrication Processes

Forging, Hot Forming, Machining

Common Fabrication Processes provided by CDA

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