

C69400

Extruded and Drawn

Product Description:	Silicon Red Brass
Temper:	H04 Hard
Solids:	3/8" to 2" O.D.
Hex:	3/8" to 2" O.D.
Standard Lengths:	144"

Typical Uses

Industrial valve stems

Similar or Equivalent Specification

CDA	ASTM	SAE	AMS	Federal	Military	Other
C69400	B371 B371M					

Chemical Composition

Cu% ¹	Pb%	Zn%	Fe%	Si%
80.00- 83.00	0.30	Rem.	0.20	3.50- 4.50

Chemical Composition according to ASTM B371/B371M-19

¹Cu value includes Ag.

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)
C69400	30	0.296

Mechanical Properties

Mechanical Properties according to ASTM B371/B371M-19

C69400

H04 Hard

SIZE RANGE: UP TO 1" INCLUSIVE

Tensile Strength, min		Yield Strength, at 0.5% Extension Under Load, min		Elongation, in 4x Diameter or Thickness of Specimen, min	Rockwell "B" Hardness	Remarks
ksi	MPa	ksi	MPa	%	typical BHN	
80	550	40	250	15	95	

SIZE RANGE: OVER 1" TO 2" INCLUSIVE

Tensile Strength, min		Yield Strength, at 0.5% Extension Under Load, min		Elongation, in 4x Diameter or Thickness of Specimen, min	Rockwell "B" Hardness	Remarks
ksi	MPa	ksi	MPa	%	typical BHN	
75	515	35	241	15	95	

SIZE RANGE: OVER 2"

Tensile Strength, min		Yield Strength, at 0.5% Extension Under Load, min		Elongation, in 4x Diameter or Thickness of Specimen, min	Rockwell "B" Hardness	Remarks
ksi	MPa	ksi	MPa	%	typical BHN	
65	450	35	241	15	95	

Physical Properties

	US Customary	Metric
Melting Point – Liquidus	1685 °F	918 °C
Melting Point – Solidus	1510 °F	821 °C
Density	0.296 lb/in ³ at 68 °F	8.19 gm/cm ³ at 20 °C
Specific Gravity	8.19	8.19
Electrical Conductivity	6.2% IACS at 68 °F	0.04 MegaSiemens/cm at 20 °C
Thermal Conductivity	15 Btu/sq ft/ft hr/°F at 68 °F	25.98 W/m at 20 °C
Coefficient of Thermal Expansion 68-572	11.2 · 10 ⁻⁶ per °F (68-572 °F)	19.3 · 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
Modulus of Elasticity in Tension	16000 ksi	110310 MPa

Physical Properties provided by CDA

Fabrication Properties

Technique	Suitability
Soldering	Excellent
Brazing	Excellent
Oxyacetylene Welding	Good
Spot Weld	Good
Seam Weld	Good
Butt Weld	Good
Capacity for Being Cold Worked	Poor
Capacity for Being Hot Formed	Excellent
Forgeability Rating	80
Machinability Rating	30

Fabrication Properties provided by CDA

Common Fabrication Processes

Forging, Screw Machining

Common Fabrication Processes provided by CDA

Thermal Properties

Treatment	Minimum*	Maximum*
Annealing	800	1200
Hot Treatment	1200	1600

Thermal Properties provided by CDA

*Temperature is measured in Fahrenheit.