

C69300

Extruded and drawn

GreenAlloys™

Product description	Lead-free brass
Tempers	H02 half hard
Solids	1/8" to 2 1/2" O.D.
Tubes	Consult mill
Hex	3/8" to 1" O.D.
Standard lengths	144"
Compliance	C69300 is compliant with key legislation including (1) Federal Safe Drinking Water Act - SDWA, (2) S. 3874 Federal Reduction of Lead in Drinking Water Act, (3) California AB1953, (4) Vermont Act 193, and is NSF/ANSI/CAN 61-2022 compliant

Typical uses

Automotive

Fluid connectors, sensor bodies, thermostat parts

Industrial

Automatic screw machine parts, bolts, condenser tube plates, nuts, pneumatic fittings, pump parts, screw machine parts, valve bodies for water, valve stems

Marine

Marine products, propeller shafts

Plumbing

Faucet stems, faucets, plumbing fittings, water meter cases

Similar or equivalent specification

CDA	ASTM	SAE	AMS	Federal	Military	Other
C69300	B371 B371M					

Chemical composition

Cu (%) ¹	Pb (%)	Sn (%)	Zn (%)	Fe (%)	P (%)	Ni (%) ²	Mn (%)	Si (%)
73.00-77.00	0.02*-0.09	0.20	remain.	0.10	0.04-0.15	0.10	0.10	2.70-3.40

*Pb content is greater than 0.02%.

¹Cu value includes Ag.

²Ni 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)
C69300	85	0.300

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Mechanical properties

Mechanical properties according to ASTM B371/B371M-19
C69300
H02 half hard

Size range up to ½" 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	%	max HRB approve	
85	585	45	310	5	85	

Size range over ½" 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	%	max HRB approx	
75	515	35	240	10	80	

Size range over 1" to 2 ½" 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	%	max HRB approx	
70	480	30	205	10	75	

Physical properties

	US customary	Metric
Melting point – liquidus	1616 °F	880 °C
Melting point – solidus	1571 °F	855 °C
Density	0.3 lb/in ³ at 68 °F	8.3 gm/cm ³ at 20 °C
Specific gravity	8.3	8.3
Electrical conductivity	8% IACS at 68 °F	0.046 MegaSiemens/cm at 20 °C
Thermal conductivity	21.8 Btu/sq ft/ft hr/°F at 68 °F	37.76 W/m at 20 °C
Coefficient of thermal expansion 68-212	10.3 · 10 ⁻⁶ per °F (68-212 °F)	17.8 · 10 ⁻⁶ per °C (20-100 °C)
Coefficient of thermal expansion 68-392	10.3 · 10 ⁻⁶ per °F (68-392 °F)	17.8 · 10 ⁻⁶ per °C (20-200 °C)
Coefficient of thermal expansion 68-572	10.4 · 10 ⁻⁶ per °F (68-572 °F)	18 · 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	15200 ksi	104801 MPa

Physical properties provided by CDA

C69300 continued

Fabrication properties

Technique	Suitability
Soldering	Excellent
Brazing	Good
Oxyacetylene welding	Good
Gas shielded arc welding	Good
Coated metal arc 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	95
Machinability rating	85

Fabrication properties provided by CDA

Thermal properties

Treatment	Min*	Max*	Value*	Time*
Stress relief			0	
Solution treatment				0
Annealing	932	1112		
Hot treatment	1202	1517		

Thermal properties provided by CDA

**Temperature is measured in Fahrenheit. **For stress relief, solution treatment and annealing - time is measured in hours/inch of thickness. For precipitation heat treatment - time is measured in hours.*

Common fabrication properties

Forming and bending, machining, shearing

Common fabrication properties provided by CDA