C87850

Continuous cast	GreenAlloys™

Product description	Silicon brass
Solids	Consult mill for sizes
Tubes	Consult mill for sizes
Rectangles	Consult mill for sizes
Standard lengths	144"
Shape/form	Semi-finished, mill stock or near-net shapes, anode, bar stock, billet/bloom, squares, hex, plate, profile or structural shape, flats/ rectangular bar
Compliance	C87850 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, and (4) Vermont Act 193

Typical uses

Industrial

Valve bodies for water

Marine

Marine products

Plumbing

Faucets, plumbing fittings, water meter cases

Similiar or equivalent specification

CDA	ASTM	SAE	AMS	Federal	Military	Other
C87850	B505 B505M					

Chemical composition

Cu (%)	Pb (%)	Sn (%)	Zn (%)	Fe (%)	P	Ni (%)[1]	Mn (%)	Sb (%)	Si (%)
75.00-78.00	0.02*-0.09	0.30	remain.	0.10	0.05-0.20	0.20	0.10	0.10	2.70-3.40

Chemical composition according to ASTM B505/B505M-23

**Pb content is greater than 0.02%.* *[1]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/in³ at 68 °F)
C87850	70	0.3

Mechanical properties

Mechanical properties according to ASTM B505/B505M-19

Tensile strength, min		Yield strength, at 0.5% extension under load, min		Elongation, in 2 in. or 50 mm, min	Brinell hardness (500 kg load)	Remarks
ksi	MPa	ksi	MPa	%	minimum BHN	
65	448	25	172	8	103	

Physical properties

	US customary	Metric
Melting point – liquidus	1616 °F	880 °C
Melting point – solidus	1571 °F	855 °C
Density	0.3 lb/in³ at 68 °F	8.3 gm/cm³ at 20 °C
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	37.8 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
Modulas of elasticity in tension	15200 ksi	104801 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
Machinability rating	70

Fabrication properties provided by CDA

Casting characteristics

Casting attribute	Level
Casting yield	Medium
Drossing	Low
Effect of section size	Medium
Fluidity	High
Gassing	Low
Patternmakers shrinkage (inches per foot)	3/16
Shrinkage in solidification	Medium

Casting characteristics provided by CDA