

C89833 Lead-Free Replacement for C836

Cast • GreenAlloy™

Product Description:	Bismuth Tin Bronze
Solids:	½" to 10" O.D.
Tubes:	1½" to 9" O.D.
Rectangles:	Up to 15"
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:	C89833 is compliant with key legislation including (1) Federal Safe Drinking Water Act 1974 – SDWA, (2) Federal Reduction of Lead in Drinking Water Act of 2011 and (3) California AF1953

Typical Uses

Industrial corrosion-resistant/pressure-tight castings, impellers, pumps

Chemical Composition

Cu%	Pb%	Sn%	Zn%	Fe%	P%	Ni% ¹	Al%	Bi%	S%	Sb%	Si%
86.00-91.00	0.09	4.00-6.00	2.00-6.00	0.30	0.05	1.00	0.005	1.70-2.70	0.08	0.25	0.005

¹Ni value includes Co.
Note: Cu + Sum of Named Elements, 99.3% min. Single values represent maximums.

Machinability

Copper Alloy UNS No.	Machinability Rating	Density (lb/cu in at 68 °F)
C89833	81	0.317

Mechanical Properties

Tensile Strength, min		Yield Strength, at .5% Extension Under Load, min		Elongation, in 2 in. or 50 mm min	Brinell Hardness	Remarks
ksi	MPa	ksi	MPa	%	typical BHN	
30	207	14	97	6	60 (500 kg)	

Physical Properties

C89833 continued

	US Customary	Metric
Melting Point – Liquidus	1877 °F	1025 °C
Melting Point – Solidus	1454 °F	790 °C
Density	0.317 lb/in ³ at 68 °F	8.78 gm/cm ³ at 20 °C
Specific Gravity	8.78	8.78
Electrical Conductivity	17.8% IACS at 68 °F	0.103 MegaSiemens/cm at 20 °C
Thermal Conductivity	41 Btu/sq ft/ft hr/°F at 68 °F	71 W/m at 20 °C
Coefficient of Thermal Expansion 68-392	13 · 10 ⁻⁶ per °F (68-392 °F)	22.5 · 10 ⁻⁶ per °C (20-200 °C)
Specific Heat Capacity	0.085 Btu/lb/°F at 68 °F	356.1 J/kg at 20 °C
Modulus of Elasticity in Tension	15500 ksi	106869 MPa

Physical Properties provided by CDA