

# C90300

Cast • GreenAlloy™

<b>Product Description:</b>	Tin Bronze
<b>Solids:</b>	½" to 10" OD
<b>Tubes:</b>	1" to 16" OD
<b>Rectangles:</b>	Up to 20"
<b>Standard Lengths:</b>	144"
<b>Shape/Form:</b>	semi-finished, mill stock or near-net shapes, anode, bar stock, billet/bloom, squares, hex, plate, profile or structural shape, flats/rectangular bar

## Typical Uses

<b>Building</b>	heavy construction equipment
<b>Fasteners</b>	swivel
<b>Industrial</b>	bearings, bushings, gear blanks, gears, piston rings, pump bodies, pump impellers, valve bodies, valves
<b>Plumbing</b>	steam fittings

## Chemical Composition

Cu% <sup>1</sup>	Pb%	Sn%	Zn%	Fe%	P% <sup>2</sup>	Ni% <sup>3</sup>	Al%	S%	Sb%	Si%
86.00-89.00	0.30	7.50-9.00	3.00-5.00	0.20	0.05	1.00	0.005	0.05	0.20	0.005

Chemical Composition according to ASTM B505/B505M-14

<sup>1</sup>In determining Cu min., Cu may be calculated as Cu + Ni. <sup>2</sup>For continuous castings, P shall be 1.5% max. <sup>3</sup>Ni value includes Co.  
Note: Cu + Sum of Named Elements, 99.4% min. Single values represent maximums.

## Machinability

Copper Alloy UNS No.	Machinability Rating	Density (lb/cu in at 68° F)
C90300	30	0.318

## 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	
44	303	22	152	18	70 (500 kg)	

Mechanical Properties according to ASTM B505/B505M-14

# Physical Properties

C90300 continued

	US Customary	Metric
Melting Point – Liquidus	1832° F	1000° C
Melting Point – Solidus	1570° F	854° C
Density	0.318 lb/in <sup>3</sup> at 68° F	8.80 gm/cm <sup>3</sup> at 20° C
Specific Gravity	8.8	8.8
Electrical Conductivity	12% IACS at 68° F	0.069 MegaSiemens/cm at 20° C
Thermal Conductivity	43.2 Btu · ft/(hr · ft <sup>2</sup> · °F) at 68° F	74.8 W/m at 20° C
Coefficient of Thermal Expansion	10 · 10 <sup>-6</sup> per °F (68°-392° F)	17.3 · 10 <sup>-6</sup> per °C (20°-200° C)
Specific Heat Capacity	0.09 Btu/lb/°F at 68° F	377.1 J/kg at 293° C
Modulus of Elasticity in Tension	14000 ksi	96527 MPa
Magnetic Permeability	1	1

Physical Properties provided by CDA