

# C91100

## Continuous cast

Product description	High tin bronze
Solids	1" to 6" O.D.
Tubes	1" to 6" O.D.
Rectangles	Up to 10"
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

## Typical uses

### Electrical

Hollow conductors

### Industrial

Bearings, bushings, piston rings

## Similar or equivalent specification

CDA	ASTM	SAE	AMS	Federal	Military	Other
C91100	B22 B22M					

## Chemical composition

Cu (%) <sup>1</sup>	Pb (%)	Sn (%)	Zn (%)	Fe (%)	P (%) <sup>2</sup>	Ni (%) <sup>3</sup>	Al (%)	S (%)	Sb (%)	Si (%)
82.00-85.00	0.25	15.00-17.00	0.25	0.25	1.00	0.50	0.005	0.05	0.20	0.005

Chemical composition according to ASTM B22/B22M-17

<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/in <sup>3</sup> at 68 ° F)
C91100	10	0.318

## Mechanical properties

Tensile strength, min		Yield strength, at 0.5% extension under load, min		Elongation, in 2 in. or 50 mm, min	Brinell hardness (3000 kg load)	Remarks
ksi	MPa	ksi	MPa	%	typical BHN	
					135	

## Physical properties

	US customary	Metric
Melting point – liquidus	1742 °F	950 °C
Melting point – solidus	1505 °F	818 °C
Electrical conductivity	8% IACS at 68 °F	0.049 MegaSiemens/cm at 20 °C
Specific heat capacity	0.09 Btu/lb/°F at 68 °F	377.1 J/kg at 20 °C
Modulus of elasticity in tension	15000 ksi	103400 MPa

Physical properties provided by CDA

## Fabrication properties

Technique	Suitability
Soldering	Excellent
Brazing*	Good
Oxyacetylene welding	Fair
Gas shielded arc welding	Fair
Coated metal arc welding	Fair
Machinability rating	10

Fabrication properties provided by CDA

\*Since brazing is performed within the hot-short range, strain must be avoided during brazing and cooling.

## Casting characteristics

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

Casting characteristics provided by CDA