



TYPICAL USES

Builders Hardware	Brackets
Electrical	Switches, Electrical Components
Fasteners	Screw Down Nuts
Industrial	Bushings, High Strength Machine Parts, Hooks, Frames, Struts, Gears, Bridge Pins, Propellers, Hydraulic Cylinder Parts, Large Valve Stems, Slow Speed, Heavy Load Bearings, Gib, Cams, Hydraulic Cylinder Parts, Forming Dies for Wood Pulp Industry, Wear Rings for Forming Dies for Wood Pulp Industry
Marine	Marine Hardware, Clamps, Covers for Marine Hardware, Boat Parts, Rudders

Bronze Family: Manganese Bronze
Solids: 1/2" to 9" OD
Tubes: 1-1/8" to 16" OD
Rectangles: Up to 15"
Standard Lengths: 144"

SIMILAR OR EQUIVALENT SPECIFICATION

CDA	ASTM	ASARCON	SAE	AMS	FEDERAL	INGOT	MILITARY	OTHER
C86300	ASTM B505 ASTM B22		SAE 430B SAE J461 SAE J462		QQ-C-390B TYPE III	424	MIL-C-22229 COMP 8	High Strength Yellow Brass

CHEMICAL COMPOSITION

Alloy	Cu%	Sn%	Pb%	Zn%	Fe%	Ni%	Sb%	P%	S%	Al%	Mn%	Si%
C86300	60.00- 66.00	0.20	0.20	22.00- 28.00	2.00- 4.00	1.00*	N/A	N/A	N/A	5.00- 7.50	2.50- 5.00	N/A

Chemical Composition according to ASTM B505-08

Note: Single values represent maximums.

*In determining copper minimum, copper may be calculate as copper plus nickel.

MACHINABILITY

Alloy	Machinability Rating	Density (lb/cu in.)
C86300	8	0.283

MECHANICAL PROPERTIES

ALLOY: C86300 CONTINUED

Tensile Strength, min		Yield Strength, at .5% extension under load min		Elongation in 2 in. or 50 mm min, %	Brinell Hardness, min	Remarks
ksi	MPa	ksi	MPa			
110	758	62	427	14	N/A	

Mechanical Properties according to ASTM B505-08

PHYSICAL PROPERTIES

	US Customary	Metric
Melting Point - Liquidus	1693 F	923 C
Melting Point - Solidus	1625 F	885 C
Density	0.283 lb/in ³ at 68 F	7.83 gm/cm ³ @ 20 C
Specific Gravity	7.830	7.83
Electrical Resistivity	130.80 ohms-cmil/ft @ 68 F	21.74 microhm-cm @ 20 C
Electrical Conductivity	80 %IACS @ 68 F	0.046 MegaSiemens/cm @ 20 C
Thermal Conductivity	20.50 Btu · ft/(hr · ft ² ·oF) at 68F	35.5 W/m · oK at 20 C
Coefficient of Thermal Expansion	12 · 10 ⁻⁶ per oF (68-572 F)	21.6 · 10 ⁻⁶ per oC (20-300 C)
Specific Heat Capacity	0.090 Btu/lb/oF at 68 F	377.1 J/kg · oK at 293 K
Modulus of Elasticity in Tension	14200 ksi	97900 MPa
Magnetic Permeability*	1.090	1.09

Physical Properties provided by CDA

*Field Strength 16 kA/m

FABRICATION PRACTICES

Joining Technique	Suitability
Soldering	Poor
Brazing	Poor
Oxyacetylene Welding	Poor
Gas Shielded Arc Welding	Poor
Coated Metal Arc Welding	Good

Fabrication Properties provided by CDA

THERMAL PROPERTIES

Treatment	Temp./Time - US	Temp./Time - SI
Stress Temperature	500	260
Solution Minimum		
Solution Maximum		
Solution Time	0.0	
Solution Medium	None	
Precipitation Value		
Precipitation Time		
Precipitation Medium	None	
Annealing Minimum		
Annealing Maximum		
Annealing Time		
Hot Works Minimum		
Hot Works Maximum		

Thermal Properties provided by CDA