



TYPICAL USES

Automotive	Weld Guns
Builders Hardware	Brackets
Electrical	Electrical Hardware
Industrial	Struts, Machinery, Gears, Compressors, Forming Dies for Wood Pulp Industry, Wear Rings for Pressing Dies for Wood Pulp Industry, Hooks, Frames, Machinery Parts requiring High Strength, Lever Arms
Marine	Propellers for salt and fresh water, Covers for Marine Hardware, Clamps, Boat Parts, Rudders

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

SIMILAR OR EQUIVALENT SPECIFICATION

CDA	ASTM	ASARCON	SAE	AMS	FEDERAL	INGOT	MILITARY	OTHER
C86500	ASTM B505		SAE 430C SAE J461 SAE J462	AMS 4860	QQ-C-390B TYPE III QQ-B-726 CLASS A	421	MIL-C-22229 COMP 7	High Strength Yellow Brass

CHEMICAL COMPOSITION

Alloy	Cu%	Sn%	Pb%	Zn%	Fe%	Ni%	Sb%	P%	S%	Al%	Mn%	Si%
C86500	55.00- 60.00	1.00	0.40	36.00- 42.00	0.40- 2.00	1.00*	N/A	N/A	N/A	0.50- 1.50	0.10- 1.50	N/A

Chemical Composition according to ASTM B505-08

Note: Single values represent maximums.

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

MACHINABILITY

Alloy	Machinability Rating	Density (lb/cu in.)
C86500	26	0.301

MECHANICAL PROPERTIES

ALLOY: C86500 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			
70	483	25	172	25	N/A	

Mechanical Properties according to ASTM B505-08

PHYSICAL PROPERTIES

	US Customary	Metric
Melting Point - Liquidus	1616 F	880 C
Melting Point - Solidus	1583 F	862 C
Density	0.301 lb/in ³ at 68 F	8.33 gm/cm ³ @ 20 C
Specific Gravity	8.330	8.33
Electrical Resistivity	470 ohms-cmil/ft @ 68 F	7.81 microhm-cm @ 20 C
Electrical Conductivity	220 %IACS @ 68 F	0.128 MegaSiemens/cm @ 20 C
Thermal Conductivity	49.60 Btu · ft/(hr · ft ² ·oF) at 68F	85.8 W/m · oK at 20 C
Coefficient of Thermal Expansion	11.3 · 10 ⁻⁶ per oF (68-572 F)	20.3 · 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	15000 ksi	103400 MPa
Magnetic Permeability*	1.090	1.09

Physical Properties provided by CDA

*Field Strength 16 kA/m

FABRICATION PRACTICES

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

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