

TIN BRONZE (C90500)

TYPICAL USES

C90500 SAE62 Bronze is also referred to as “Gun Metal”. This Bronze alloy belongs to the High Tin Bronze Family of Alloys. As with the other alloys in this family, C905 Bronze has excellent qualities for applications requiring heavy load bearing capability under slow speeds.



CONTACT US

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TYPICAL USES

Product Category	Product	Reason
Builders Hardware	Clamps	Corrosion Resistance, Moderate Strength
Building	Heavy Construction Equipment	Corrosion Resistance, Wear Resistance, Moderate Strength, Pressure Tight up to 260 C
Electrical	Connectors	Electrical Conductivity, Thermal Conductivity, Corrosion Resistance, Moderate Strength
Fasteners	Nuts	Corrosion Resistance, Moderate Strength
Industrial	Bearings	Corrosion Resistance, Low Co-efficient of Friction, Low Co-efficient of Friction, Wear Resistance, Moderate Strength
	Bushings	Corrosion Resistance, Low Co-efficient of Friction, Wear Resistance, Moderate Strength
	Expansion Bearings	Corrosion Resistance, Wear Resistance, Moderate Strength
	Finishing Dies for Wood Pulp Industry	Corrosion Resistance, Wear Resistance, Moderate Strength, Pressure Tight up to 260 C
	Gear Blanks	Corrosion Resistance, Wear Resistance, Machinability - Good, Moderate Strength
	Gears	Corrosion Resistance, Low Co-efficient of Friction, Wear Resistance, Machinability - Good, Moderate Strength
	Piston Rings	Corrosion Resistance, Wear Resistance, Moderate Strength, Pressure Tight up to 260 C
	Pump Bodies	Corrosion Resistance, Moderate Strength, Pressure Tight up to 260 C
	Pump Bodies	Corrosion Resistance to Fresh Water
	Pump Impellers	Corrosion Resistance, Wear Resistance, Moderate Strength, Pressure Tight up to 260 C
	Seal Rings	Corrosion Resistance, Wear Resistance, Moderate Strength
	Valve Bodies	Corrosion Resistance, Wear Resistance, Moderate Strength, Pressure Tight up to 260 C
	Valves	Corrosion Resistance, Wear Resistance, Moderate Strength
Worm Gears	Corrosion Resistance, Wear Resistance, Moderate Strength	
Plumbing	Steam Fittings	Corrosion Resistance, Moderate Strength, Pressure Tight up to 260 C
	Water Conditioners	Corrosion Resistance, Moderate Strength

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MECHANICAL PROPERTIES

Form	Temper Code	Tensile Strength (ksi)	YS-0.5% Ext (ksi)	Elongation (%)	Brinell Hardness, 500 kg load	Izod (ft-lbs)	Compressive Strength .01 in. set/ in. (ksi)	Fatigue Strength** (ksi)	Reduction of Area (%)
As Centrifugal Cast	M02	40 Min for Standard 40 Min for Standard 45 Typ	18 Min for Standard 18 Min for Standard 22 Typ	20 Min for Standard 20 Min for Standard 25 Typ	75 Typ	10 Typ	40 Typ	13 Typ	
As Continuous Cast	M07	44 Min for Standard 44 Min for Standard	25 Min for Standard 25 Min for Standard	10 Min for Standard 10 Min for Standard					
As Sand Cast	M01	40 Min for Standard 40 Min for Standard 45 Typ	18 Min for Standard 18 Min for Standard 22 Typ	20 Min for Standard 20 Min for Standard 25 Typ	75 Typ	10 Typ	40 Typ	13 Typ 13 Typ	40 Typ

* Measured at room temperature, 68°F (20°C).

CHEMICAL PROPERTIES

	Element										
	Cu(1,2)	Pb	Sn	Zn	Fe	P(3)	Ni(4)	Al	S	Sb	Si
Min (%)	86.0		9.0	1.0							
Max (%)	89.0	0.30	11.0	3.0	0.20	0.05	1.0	0.005	0.05	0.20	0.005

(1) Cu + Sum of Named Elements 99.7% min.
 (2) In determining Cu min., Cu may be calculated as Cu + Ni.
 (3) For continuous castings P shall be 1.5% max.
 (4) Ni value includes Co.

FABRICATION PROPERTIES

Machining Technique	Suitability
Soldering	Excellent
Brazing	Good
Oxyacetylene Welding	Fair
Gas Shielded Arc Welding	Fair
Coated Metal Arc Welding	Fair
Machinability Rating	30

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