

C 907 Gear Bronze

Bronze Family: Tin Bronze



C 907 Gear Bronze is a hard, strong alloy with good corrosion resistance, especially in seawater. As a bearing material it resists both wear and fatigue applications. It is moderately machinable. C 907 is widely used for gears and worm wheels, bearings, marine fittings, piston rings and pump components.

Equivalent Specifications			
ASTM B505/B505M (Copper Alloy UNS No. 90700 Continuous Cast)			
ASTM B427 (Copper Alloy UNS No. 90700 Centrifugal Cast)			
Reference Specifications			
SAE	Federal Specification	Ingot Number	CDA
SAE 65 SAE J461 SAE J462	QQ-C-390	205	C90700

Equivalent specifications are verified and updated annually.
Specifications shown are current as of May 4, 2010.

Available from stock at Morgan Bronze in:

Rounds



Chemical Composition (%)**										
Cu	Sn	Ni*	Pb	Zn	Sb	Fe	P	S	Al	Si
88.0 – 90.0***	10.0 – 12.0	0.50 max.	0.50 max.	0.50 max.	0.20 max.	0.15 max.	1.50 max.	0.05 max.	0.005 max.	0.005 max.
Sum of all named elements = 99.4%										
Mechanical Properties										
	English		Metric							
Tensile Strength, min.	40 ksi		276 MPa							
Yield Strength, min.	25 ksi		172 MPa							
Elongation in 2 in. or 50 mm, min.	10%		10%							

** Values shown pertain to ASTM B505/505M only
Values for ASTM B427 differ slightly. Contact our QA department for clarification
* Nickel including Cobalt
*** In determining copper minimum, copper may be calculated as copper plus nickel.

Machinability Rating 20 (Free Cutting Brass = 100)



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(continued)

Physical Properties		
	English	Metric
Melting Point – Liquidus	1830° F	999° C
Melting Point – Solidus	1528° F	831° C
Density	0.317 lb/in ³ at 68° F	8.77 gm/cm ³ @ 20° C
Specific Gravity	8.770	8.77
Electrical Conductivity	10% IACS @ 68° F	0.056 MegaSiemens/cm @ 20° C
Thermal Conductivity	40.80 Btu · ft/(hr · ft ² · °F) @ 68° F	70.6 W/m · °K @ 20° C
Coefficient of Thermal Expansion	10.20 · 10 ⁻⁶ per °F (68-392° F)	18.4 · 10 ⁻⁶ per °C from 20-200 C
Specific Heat Capacity	0.090 Btu/lb/°F @ 68°F	377.1 J/kg · °K @293° K
Modulus of Elasticity in Tension	15,000 ksi	103,400 MPa

Physical Properties provided by CDA

Fabrication Practices		Thermal Properties	
Soldering	Excellent	Stress Relieving Temperatures	500 F or 260 C
Brazing	Good		
Oxyacetylene Welding	Fair	Time @ Temperature	1 Hr. per inch of wall thickness
Gas Shielded Arc Welding	Fair		
Coated Metal Arc Welding	Fair	Responds to Heat Treatment	No

Fabrication Practices provided by CDA

Thermal Properties provided by CDA

DISCLAIMER:

The Physical, Fabrication and Thermal Properties shown here represent reasonable approximations suitable for general engineering use. Due to commercial variations in compositions and to manufacturing limitations, they should not be used for specification purposes. See applicable ASTM International specification references.