

RIVERSIDE BRASS

& ALUMINUM FOUNDRY LIMITED

C86200

Last Updated: Jan 27, 2006

Chemical Composition

(% max., unless shown as range or min.)

	Cu(1)	Al	Fe	Pb	Mn	Ni(2)	Sn	Zn
Min./Max.	60.0-66.0	3.0-4.9	2.0-4.0	2.0	2.5-5.0	1.0	2.0	22.0-28.0
Nominal	63.0	4.0	3.0	-	3.7	-	-	25.0

(1) In determining Cu min., Cu may be calculated as Cu + Ni.

(2) Ni value includes Co.

Note: Cu + Sum of Named Elements, 99.0% min.

Applicable Specifications

Product	Specification
Centrifugal	ASTM B271 SAE J462, J461
Continuous	ASTM B505 SAE J462, J461
Ingot	ASTM B30 FEDERAL QQ-C-523
Precision	MILITARY MIL-C-11866
Sand	ASTM B763, B584 SAE J461, J462

Common Fabrication Processes

Casting

Fabrication Properties

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

Mechanical Properties (measured at room temperature, 68 F (20 C))

Temper	Section Size	Cold Work	Typ/Min	Temp	Tensile Strength	Yield Strength (0.5% ext. under load)	Yield Strength (0.2% offset)	Yield Strength (0.05% offset)	EI	Rockwell Hardness			Vickens Hard.	Brinell Hard.	Shear Strength	Fatigue Strength*	Izod Impact Strength	
										B	C	F30T						
	in.	%		F	ksi	ksi	ksi	ksi	%				500	500	3000	ksi	ksi	ft-lb
	mm.			C	MPa	MPa	MPa	MPa								MPa	MPa	J
As Sand Cast																		
M01	0.0	0	TYP	68	95	48	-	-	20	-	-	-	-	180	-	-	12.0	
	0.0			20	655	331	-	-	20	-	-	-	-	180	-	-	16.0	
As Continuous Cast																		
M07	0.0	0	SMIN	68	90	45	-	-	18	-	-	-	-	-	-	-	0.0	
	0.0			20	621	310	-	-	18	-	-	-	-	-	-	-	0.0	
As Centrifugal Cast																		
M02	0.0	0	SMIN	68	90	-	45	-	18	-	-	-	-	-	-	-	0.0	
	0.0			20	621	-	310	-	18	-	-	-	-	-	-	-	0.0	
As Sand Cast																		
M01	0.0	0	SMIN	68	90	45	-	-	18	-	-	-	-	-	-	-	0.0	
	0.0			20	621	310	-	-	18	-	-	-	-	-	-	-	0.0	

*Fatigue Strength: 100 x 10 6cycles, unless indicated as [N]X 106.

Physical Properties

<>	US Customary	Metric
Melting Point - Liquidus	1725 F	941 C
Melting Point - Solidus	1650 F	899 C
Density	0.288 lb/in ³ at 68 F	7.97 gm/cm ³ @ 20 C
Specific Gravity	7.97	7.97
Electrical Resistivity	136.7 ohms-cmil/ft @ 68 F	22.73 microhm-cm @ 20 C
Electrical Conductivity	8 % IACS @ 68 F	0.044 MegaSiemens/cm @ 20 C
Thermal Conductivity	20.5 Btu · ft/(hr · ft ² ·oF)at 68F	35.5 W/m · oK at 20 C
Coefficient of Thermal Expansion	12.0 · 10 ⁻⁶ per oF (68-572 F)	21.6 · 10 ⁻⁶ per oC (20-300 C)
Specific Heat Capacity	0.09 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*	1.24	1.24

*Field Strength 16 kA/m

Tempers Most Commonly Used No information available.

Typical Uses

Builders Hardware

Structural Parts, Brackets

Fasteners

Screw Down Nuts

Industrial

Pressing Dies for Wood Pulp, Wear Rings for Pressing Dies for Wood Pulp Industry, Cams, Bushings, Valve Stems, Worm Gears, Gears, Frames, Shafts, Hooks, High Strength Machine Parts, Struts, Marine Racing Propellers

Marine

Clamps, Marine Castings, Boat Parts, Rudders

Ordnance

Gun Mounts

The above data used by permission from the **Copper Development Association Inc.** A complete Description of all UNS Copper Alloys is available at www.copper.org