

RIVERSIDE BRASS

& ALUMINUM FOUNDRY LIMITED

C93200

Last Updated: Jan 27, 2006

Chemical Composition

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

	Cu(1)	Al	Sb	Fe	Pb	Ni(2)	P(3)	Si	S	Sn	Zn
Min./Max.	81.0-85.0	.005	.35	.20	6.0-8.0	1.0	.15	.005	.08	6.3-7.5	1.0-4.0
Nominal	83.0	-	-	-	7.0	-	-	-	-	6.9	2.5

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

(2) Ni value includes Co.

(3) For continuous castings, P shall be 1.5%, max.

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

Applicable Specifications

Product	Specification
Centrifugal	ASTM B271 SAE J462, J461
Continuous	ASTM B505 SAE J461, J462
Ingot	ASTM B30
Permanent Mold	SAE J461, J462
Sand	ASTM B584, B763, B66 SAE J462, J461

Common Fabrication Processes

Casting

Fabrication Properties

Joining Technique	Suitability
Soldering	Excellent
Brazing	Good
Oxyacetylene Welding	Not Recommended
Gas Shielded Arc Welding	Not Recommended
Coated Metal Arc Welding	Not Recommended
Machinability Rating	70

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)	El	Rockwell Hardness			Vickens Hard.	Brinell Hard.	Shear Strength	Fatigue Strength*	Izod Impact Strength		
										B	C	F30T							
	in.	%		F	ksi	ksi	ksi	ksi	%	B	C	F	30T	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	35	18	-	-	20	-	-	-	-	65	-	-	16	6.0	
	0.0			20	241	124	-	-	20	-	-	-	-	65	-	-	110	8.0	
As Centrifugal Cast																			
M02	0.0	0	S MIN	68	30	14	-	-	15	-	-	-	-	-	-	-	-	0.0	
	0.0			20	207	97	-	-	15	-	-	-	-	-	-	-	-	0.0	
As Continuous Cast																			
M07	0.0	0	S MIN	68	35	20	-	-	10	-	-	-	-	-	-	-	-	0.0	
	0.0			20	241	138	-	-	10	-	-	-	-	-	-	-	-	0.0	
As Sand Cast																			
M01	0.0	0	S MIN	68	30	14	-	-	15	-	-	-	-	-	-	-	-	0.0	
	0.0			20	207	97	-	-	15	-	-	-	-	-	-	-	-	0.0	

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

Physical Properties

<>	US Customary	Metric
Melting Point - Liquidus	1790 F	977 C
Melting Point - Solidus	1570 F	854 C
Density	0.322 lb/in ³ at 68 F	8.91 gm/cm ³ @ 20 C
Specific Gravity	8.91	8.91
Electrical Resistivity	85.9 ohms-cmil/ft @ 68 F	14.29 microhm-cm @ 20 C
Electrical Conductivity	12 %IACS @ 68 F	0.07 MegaSiemens/cm @ 20 C
Thermal Conductivity	33.6 Btu · ft/(hr · ft ² ·oF)at 68F	58.2 W/m · oK at 20 C
Coefficient of Thermal Expansion	10.0 ·10 ⁻⁶ per oF (68-212 F)	18.0 ·10 ⁻⁶ per oC (20-100 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	14500 ksi	100000 MPa

Temper Most Commonly Used No information available.

Typical Uses

Automotive

Automotive Fittings

Fasteners

Washers

Industrial

Bearings for Cranes, Trunion Bearings, Roll Neck Bearings, Rolling Mill Bearings, Linkage Bushings for Presses, Fuel Pump Bushings, Water Pump Bushings, Diesel Engine Wrist Pin Bushings, Forging Press Toggle Lever Bearings, Hydraulic Press Stuffing Box, Hydraulic Press Main Lining, Insert Bearings, Bearings, Thrust Washers, Pumps, Bushings, Machine Parts, Pump Impellers, General Purpose Bushings, Fittings, Pump Fixtures, Main Spindle Bearings, Machine Tool Bearings

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