RIVERSIDE BRASS
& ALUMINUM FOUNDRY LIMITED

C91600

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.	86.0-89.0	.005	.20	.20	.25	1.2-2.0	.30	.005	.05	9.7-10.8	.25
Nominal	87.5	-	-	-	-	1.6	-	-	-	10.3	-

(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, 99.4% min.

Applicable Specifications

Product	Specification
Centrifugal	ASTM B427
Ingot	ASTM B30
Sand	ASTM B427

Common Fabrication Processes
Casting

Fabrication Properties

Joining Technique	Suitability
Soldering	Excellent
Brazing	Good
Oxyacetylene Welding	Fair
Gas Shielded Arc Welding	Fair
Coated Metal Arc Welding	Fair
Machinability Rating	20

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
	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	44	22	-	-	16	-	-	-	-	-	85	-	-	-	0.0
	0.0			20	303	152	-	-	16	-	-	-	-	-	85	-	-	-	0.0
M01	0.0	0	SMIN	68	35	17	-	-	10	-	-	-	-	-	65	-	-	-	0.0
	0.0			20	241	117	-	-	10	-	-	-	-	-	65	-	-	-	0.0
As Centrifugal Cast																			
M02	0.0	0	TYP	68	60	32	-	-	16	-	-	-	-	-	106	-	-	-	0.0
	0.0			20	414	221	-	-	16	-	-	-	-	-	106	-	-	-	0.0
As Permanent Mold Cast																			
M05	0.0	0	TYP	68	60	32	-	-	16	-	-	-	-	-	106	-	-	-	0.0
	0.0			20	414	221	-	-	16	-	-	-	-	-	106	-	-	-	0.0
As Centrifugal Cast																			
M02	0.0	0	SMIN	68	45	25	-	-	10	-	-	-	-	-	85	-	-	-	0.0
	0.0			20	310	172	-	-	10	-	-	-	-	-	85	-	-	-	0.0

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

Physical Properties

<>	US Customary	Metric
Melting Point - Liquidus	1887 F	1031 C
Melting Point - Solidus	1575 F	857 C
Density	0.32 lb/in3 at 68 F	8.86 gm/cm3 @ 20 C
Specific Gravity	8.86	8.86
Electrical Resistivity	103.7 ohms-cmil/ft @ 68 F	17.24 microhm-cm @ 20 C
Electrical Conductivity	10 %IACS @ 68 F	0.058 MegaSiemens/cm @ 20 C
Thermal Conductivity	40.8 Btu · ft/(hr · ft2·oF)at 68F	70.6 W/m · oK at 20 C
Coefficient of Thermal Expansion	9.0 ·10-6 per oF (68-392 F)	16.2 ·10-6 per oC (20-200 C)
Specific Heat Capacity	0.09 Btu/lb/oF at 68 F	377.1 J/kg · oK at 293 K
Modulas of Elasticity in Tension	16000 ksi	110000 MPa

Tempers Most Commonly Used No information available.

Typical Uses

Fasteners

Nuts

Industrial

Fittings, Bearings, Pump Impellers, Piston Rings, Steam Castings, Gears, Bushings