

C83450

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.	87.0-89.0	0.005-0.25	0.30	1.5-3.0	0.8-2.0	0.03-0.005	0.08	2.0-3.5	5-7.5		
Nominal	88.0	-	-	2.2	1.4	-	-	2.7	6.5		

(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, 99.3% min.

Applicable Specifications

Product Specification

Ingot	ASTM B30
Sand	ASTM B763, B584

Common Fabrication Processes

Casting

Fabrication Properties

Joining Technique	Suitability
Soldering	Excellent
Brazing	Excellent
Oxyacetylene Welding	Fair
Gas Shielded Arc Welding	Fair
Coated Metal Arc Welding	Not Recommended
Machinability Rating	75

Thermal Properties

Treatment	Temp./Time - US	Temp./Time - SI
Stress Temperature		
Solution Minimum		
Solution Maximum		
Solution Time		
Solution Medium	None	
Precipitation Value		
Precipitation Time		
Precipitation Medium	None	
Annealing Minimum		
Annealing Maximum		
Annealing Time		
Hot Works Minimum		
Hot Works Maximum		

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	Vickers Hard.	Brinell Hard.	Shear Strength	Fatigue Strength	Izod Impact Strength
	in.	%			MPa	MPa	MPa	MPa					MPa	MPa	J
	mm.														
As Sand Cast															
M01	0.0	0	TYP	68	37	15	-	-	31	-	-	62	-	-	0.0
	0.0			20	255	103	-	-	31	-	-	62	-	-	0.0
M01	0.0	0	SMIN	68	30	14	-	-	25	-	-	-	-	-	0.0
	0.0			20	207	97	-	-	25	-	-	-	-	-	0.0

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

Physical Properties

	US Customary	Metric
Melting Point - Liquidus	1860 F	1015 C
Melting Point - Solidus	1580 F	860 C
Density	0.319 lb/in ³ at 68 F	8.83 gm/cm ³ @ 20 C
Specific Gravity	8.830	8.83
Electrical Conductivity	20 %IACS @ 68 F	0.115 MegaSiemens/cm @ 20 C

Temperatures Most Commonly Used No information available.

Typical Uses**Electrical**

Electrical Hardware

Industrial

Water Pump Parts, Iron Waterworks Valve Trim, Low Pressure Valve Bodies

Marine

Boat Hardware

Plumbing

Plumbing and Pipe Fittings