

C31400

LEADED BRONZE

DESCRIPTION

C31400 Leaded Commercial Bronze is a free machining brass with excellent electrical and thermal conductivity. The alloy is resistant to corrosion and contains 2.00% lead to impart free-cutting characteristics

CHEMICAL COMPOSITION

Elements	Min (%)	Max (%)
Cu	87.50	90.50
Pb	1.30	2.50
Fe	-	0.10
Ni	-	0.70
Total Others	-	0.40
Zn	Remainder	

MECHANICAL PROPERTIES (AS PER TEMPER Ho2)

Range (mm)	From	To	UTS Min (Mpa)	PS Min (Mpa)	Elo Min (%)	Hardness Min	Hardness Max	
Round (Dia)	0.059	0.500	50	30	7	-	-	
	0.500	1.000	45	27	10	-	-	
	1.000	2.953	40	25	12	-	-	
Hex (A/F)	0.118	0.500	50	30	7	-	-	
	0.500	1.000	45	27	10	-	-	
	1.000	2.756	40	25	12	-	-	
Square (A/F)	0.118	2.362	40	25	12	-	-	
Rectangle	Thickness	0.118	1.000	40	25	12	-	-
	Width	0.157	2.000					
	Thickness	1.000	1.968	40	25	12	-	-
	Width	1.000	2.756					

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Range (mm)		From	To	UTS Min (Mpa)	PS Min (Mpa)	Elo Min (%)	Hardness Min	Hardness Max
Round (Dia)		1.5	12	345	205	7	-	-
		12	25	310	185	10	-	-
		25	75	275	170	12	-	-
Hex (A/F)		3	12	345	205	7	-	-
		12	25	310	185	10	-	-
		25	70	275	170	12	-	-
Square (A/F)		3	50	275	170	12	-	-
Rectangle	Thickness	3	25	275	170	12	-	-
	Width	4	50					
	Thickness	25	50	275	170	12		
	Width	50	70					

PHYSICAL PROPERTIES

Melting Point - Liquidus°F	1900
Melting Point - Solidus°F	1850
Density lb/cu in. at 68°F	0.319
Specific Gravity	8.83
Electrical Conductivity^ IACS at 68°F	42
Thermal Conductivity Btu/ sq ft/ ft hr/ °F at 68°F	104
Coefficient of Thermal Expansion 68-57210-6 per °F (68 - 572°F)	10.2
Specific Heat Capacity Btu/ lb /°F at 68°F	0.09
Modulus of Elasticity in Tension ksi	17000
Modulus of Rigidity ksi	6400

FABRICATION PROPERTIES

Technique	Suitability
Soldering	Excellent
Brazing	Good
Oxyacetylene Welding	Not Recommended
Gas Shielded Arc Welding	Not Recommended
Coated Metal Arc Welding	Not Recommended
Spot Weld	Not Recommended
Seam Weld	Not Recommended
Butt Weld	Fair
Capacity for Being Cold Worked	Good
Capacity for Being Hot Formed	Poor
Machinability Rating	80

TYPICAL USES

- Builders Hardware
- Fasteners
- Electrical
- Industrial