

C68000

MANGANESE BRONZE

DESCRIPTION

Manganese bronze contains small additions of manganese, iron, plus lead for lubricity, anti-seizing, and bonding. Like the aluminium bronzes, they combine high strength with excellent corrosion resistance.

CHEMICAL COMPOSITION

Elements	Min (%)	Max (%)
CU	56.00	60.00
Pb	-	0.05
Sn	0.75	1.10
Al	-	0.01
Fe	0.25	1.25
Mn	0.01	1.50
Ni	0.20	0.80
SI	0.04	0.15
Total Others	-	0.50
Zn	Remainder	

MECHANICAL PROPERTIES ACCORDING TO UNS C68000

Mechanical property requirement, if any, are to be established by agreement between the manufacturer and the purchaser.

PHYSICAL PROPERTIES

Density g/cm ³ at 68°F	8.19
Specific Gravity	8.19

FABRICATION PROPERTIES

No Fabrication properties for this alloy.

TYPICAL USES

- Industrial



Range (mm)	From	To	UTS Min (Mpa)	PS Min (Mpa)	Elo Min (%)	Hardness Min	Hardness Max
Round (Dia)	1.5	25	500	250	13	-	-
	25	65	450	240	15	-	-
	65	75	450	220	17	-	-
Round (Dia)	3	25	500	220	13	-	-
	25	65	450	240	15	-	-
	65	70	450	220	17	-	-
Square (A/F)	3	25	500	250	13	-	-
	25	60	450	240	15	-	-
Rectangle (Thickness)	3	25	500	250	13	-	-
	25	50	450	240	15	-	-

PHYSICAL PROPERTIES

Melting Point - Liquidus°F	1630
Melting Point - Solidus°F	1590
Density lb/cu in. at 68°F	0.302
Electrical Conductivity % IACS at 68°F	24
Thermal Conductivity Btu/ sq ft/ ft hr/ °F at 68°F	61
Coefficient of Thermal Expansion 68-57210 ⁻⁶ per °F (68 – 572°F)	
Modulus of Elasticity in Tension ksi	15000
Modulus of Rigidity ksi	5600

FABRICATION PROPERTIES

Technique	Suitability
Soldering	Excellent
Brazing	Excellent
Oxyacetylene Welding	Good
Gas Shielded Arc Welding	Fair
Spot Weld	Good
Capacity for Being Cold Worked	Poor
Capacity for Being Hot Formed	Excellent
Forgeability Rating	80
Machinability Rating	60

TYPICAL USES

- Industrial
- Clutch disks
- Shafting
- Pump rods
- Fasteners
- Valve stem
- Valve bodies
- Balls
- Bushings
- Aircraft part
- Marine hardware

