

C67400

MANGANESE BRONZE

DESCRIPTION

Manganese bronze contains small additions of manganese, iron, and aluminium, plus lead for lubricity, anti-seizing, and bonding. Like the aluminium bronzes, they combine high strength with excellent corrosion resistance. Manganese bronze bearings can operate at high speeds under heavy loads, but require high shaft hardness and nonabrasive operating conditions.

CHEMICAL COMPOSITION

Elements	Min (%)	Max (%)
Cu	57.00	60.00
Pb	0.30	1.20
Si	-	1.00
Mn	1.50	2.50
Sn	-	0.50
Fe	-	0.50
Al	1.50	2.30
Total Others	-	0.50
Zn	Remainder	

MECHANICAL PROPERTIES ACCORDING TO SAE J463 C67400 (AS PER TEMPER Ho2)

Range (MM)	From	To	UTS Min (Mpa)	PS Min (Mpa)	Elo Min (%)	Hardness Min (HRB)	Hardness Max (HRB)
Round (Dia)	0.059	1.000	65	40	12	70	-
	1.000	2.953	58	35	15	70	-
Hex (A/F)	0.118	1.000	65	40	12	70	-
	1.000	2.756	58	35	15	70	-
Square (A/F)	0.118	2.362	60	30	20	70	-
Rectangle (Thickness)	0.118	1.968	60	30	20	70	-



PHYSICAL PROPERTIES

Melting Point - Liquidus°F	1625
Melting Point - Solidus°F	1590
Density lb/cu in. at 68°F	0.292
Specific Gravity	8.08
Electrical Conductivity % IACS at 68°F	23
Thermal Conductivity Btu/ sq ft/ ft hr/ °F at 68°F	58
Coefficient of Thermal Expansion 68-57210 ⁻⁶ per °F (68 – 572°F)	11
Specific Heat Capacity Btu/ lb /°F at 68°F	0.09
Modulus of Elasticity in Tension ksi	16000
Modulus of Rigidity ksi	6000

FABRICATION PROPERTIES

Technique	Suitability
Soldering	Fair
Brazing	Good
Oxyacetylene Welding	Not Recommended
Gas Shielded Arc Welding	Fair
Coated Metal Arc Welding	Not Recommended
Spot Weld	Good
Seam Weld	Good
Butt Weld	Good
Capacity for Being Cold Worked	Poor
Capacity for Being Hot Formed	Excellent
Forgeability Rating	100
Machinability Rating	30

TYPICAL USES

- > Oil and gas Industries
- > Aerospace
- > Fastener
- > Marine

