

## DESCRIPTION

Manganese is possibly the most flexible element that can be added to copper alloys. Small additions of manganese are used to deoxidize the alloy and enhance its mechanical strength and castability. Manganese provides a favourable combination and balance of properties like ductility, formability, strain hardening, and strength level parameters.

## CHEMICAL COMPOSITION

Elements	Min (%)	Max (%)
Cu	56.00	59.00
Pb	-	3.00
Mn	0.50	1.50
Total Others	-	0.70
Zn	Remainder	

## MECHANICAL PROPERTIES ACCORDING TO BS2872 CZ136 (AS PER TEMPER M)

Range (mm)	From	To	UTS Min (Mpa)	PS Min (Mpa)	Elo Min (%)	Hardness Min	Hardness Max
Round (Dia)	1.5	18	380	-	20	-	-
	18	40	350	-	25	-	-
	40	75	350	-	25	-	-
Round (Dia)	3	18	380	-	20	-	-
	18	40	350	-	25	-	-
	40	70	350	-	25	-	-
Square (A/F)	3	"8	380	-	20	-	-
	18	40	350	-	25	-	-
	40	50	350	-	25	-	-
Rectangle (Thickness)	3	18	380	-	20	-	-
	18	40	350	-	25	-	-
	40	50	350	-	25	-	-



## PHYSICAL PROPERTIES

Physical Properties	Metric	English
Density	8.40 g/cc	0.303 lb/in <sup>3</sup>
CTE, linear	26.0 $\mu\text{m}/\text{m}\cdot^{\circ}\text{C}$	14.4 $\mu\text{in}/\text{in}\cdot^{\circ}\text{F}$
Specific Heat Capacity	0.380 J/g $\cdot^{\circ}\text{C}$	0.0908 BTU/lb $\cdot^{\circ}\text{F}$
Thermal Conductivity	113 W/m-K	784 BTU-in/hr-ft <sup>2</sup> $\cdot^{\circ}\text{F}$
Melting Point	880-900 $^{\circ}\text{C}$	1620 – 1650 $^{\circ}\text{F}$
Solidus	880 $^{\circ}\text{C}$	1620 $^{\circ}\text{F}$
Liquidus	900 $^{\circ}\text{C}$	1650 $^{\circ}\text{F}$

## FABRICATION PROPERTIES

Machinability	80.00%
(CuZn39Pb3 = 100 %)	Poor
Capacity for Being Cold Worked	
Capacity for Being Hot Worked	Equivalent Alloy

## TYPICAL USES

- > Valves LPG

