

C69400

SILICON RED BRASS

DESCRIPTION

Alloy C69400, known as Silicon Red Brass, is a high-strength, corrosion-resistant copper-zinc-silicon alloy widely used in plumbing, marine, and industrial applications. It offers excellent resistance to dezincification, good machinability, and durability in harsh environments.

CHEMICAL COMPOSITION

Elements	Min (%)	Max (%)
Cu	80.00	83.00
Si	3.50	4.50
Pb	0.00	0.30
Fe	0.00	0.20
Zn	Remainder	

MECHANICAL PROPERTIES ACCORDING TO ASTM B371 C69240 (AS PER TEMPER HO4)

Range (Inch)		From	To	UTS Min (Ksi)	PS Min (Ksi)	Elongation Min (%)	Hardness Min (HRB)	Hardness Max (HRB)
Round(Dia)		0.250	1.000	85	40	15	-	-
		1.000	2.000	70	35	15	-	-
		2.000	3.000	65	35	15	-	-
Hex(A/F)		0.250	1.000	85	40	15	-	-
		1.000	2.000	70	35	15	-	-
		2.000	3.000	65	35	15	-	-
Square(A/F)		0.250	1.000	85	40	15	-	-
		1.000	2.000	70	35	15	-	-
		2.000	3.000	65	35	15	-	-
Rectangle	Thickness	0.250	1.000	85	40	15	-	-
	Width	1.000	2.000					
	Thickness	1.000	2.000	70	35	15	-	-
	Width	2.000	3.000					

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Range (mm)		From	To	UTS Min (Mpa)	PS Min (Mpa)	Elongation Min (%)	Hardness Min (HRB)	Hardness Max (HRB)
Round(Dia)		6	25	550	250	15	-	-
		25	50	515	240	15	-	-
		50	70	450	240	15	-	-
Hex(A/F)		6	25	550	250	15	-	-
		25	50	515	240	15	-	-
		50	75	450	240	15	-	-
Square(A/F)		6	25	550	250	15	-	-
		25	50	515	240	15	-	-
		50	75	450	240	15	-	-
Rectangle	Thickness	6	25	550	250	15	-	-
	Width	25	50					
	Thickness	25	50	515	240	15	-	-
	Width	50	75					

PHYSICAL PROPERTIES

Melting point - liquidus	1685 °F
Melting point - solidus	1510 °F
Density	0.296 lb/in ³ at 68 °F / 8.19g/cm ³
Electrical conductivity	6.2% IACS at 68 °F
Thermal Conductivity	15 Btu/sq. ft/ft hr/°F at 68 °F
Coefficient of thermal expansion 68-572	11.2 · 10 ⁻⁶ per °F (68-572 °F)
Specific heat capacity	0.09 Btu/lb/°F at 68 °F
Modulus of elasticity in tension	16000 ksi

FABRICATION PROPERTIES

Hot Forming	Excellent
Soldering	Excellent
Brazing	Excellent
Forgeability	Good
Machinability	Fair
Cold Working	Poor

TYPICAL USES

Valves
Faucets
Propellers
Shafts
Fasteners
Plumbing
Sanitary fittings
Marine Hardware