

C51080 Phosphorus Bronze

C51080 Phosphor Bronze Alloy offers engineering properties such as high strength and ductility, superior fatigue and spring characteristics, excellent corrosion resistance, durability for severe service, good bearing qualities with low friction and higher wear resistance, superior forming and spinning, resistance to stress relaxation and good joining properties. In most cases, the alloy has adequate electrical and thermal properties for many current-carrying and heat transfer requirements.



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Equivalent Specifications:

Specifications	ASTM	BS	EN	JIS	DIN	ISO	IS
Designations	C51080	-	-	H3110(92) C5102 P/R	-	-	-

Chemical Composition:

	Cu	Pb	Sn	Zn	Fe	P	Ni
Min (%)			4.8		0.05	0.01	0.05
Max (%)	Rem	0.05	5.8	0.30	0.20	0.35	0.20

Specifications:

Product	Specification
Strip	ASTM B888/B88M

Fabrication Properties:

Joining Technique	Suitability
Brazing	Excellent
Butt Weld	Excellent
Capacity for Being Cold Worked	Excellent

Capacity for Being Hot Formed	Poor
Coated Metal Arc Welding	Fair
Gas Shielded Arc Welding	Good
Machinability Rating	20
Oxyacetylene Welding	Fair
Seam Weld	Fair
Soldering	Excellent
Spot Weld	Good

Physical Properties:

Melting Point - Liquidus	1925 °F
Melting Point - Solidus	1745 °F
Density	0.32 lb/cu in. at 68°F
Specific Gravity	8.86
Electrical Conductivity	15 % IACS at 68°F
Thermal Conductivity	40 Btu/ sq ft/ ft hr/ °F at 68°F
Coefficient of Thermal Expansion 68-572	9.9 10 ⁻⁶ per °F (68 – 572°F)
Modulus of Elasticity in Tension	16000 ksi
Modulus of Rigidity	6000 ksi

Sizes Available:

TUBES	6.35 mm to 110mm
ROUND WIRES	1 mm to 11mm
ROUND RODS	1.2 to 250 mm
HEX RODS	Min. 5 mm to Max. 60 mm
SQUARE RODS	Min. 4 mm to Max. 60 mm
FLATS	Min. 4 mm thickness and max width of 120mm
PROFILES	As per customer drawings
HOLLOW RODS	Min Bore Size 20mm and Max OD 130mm