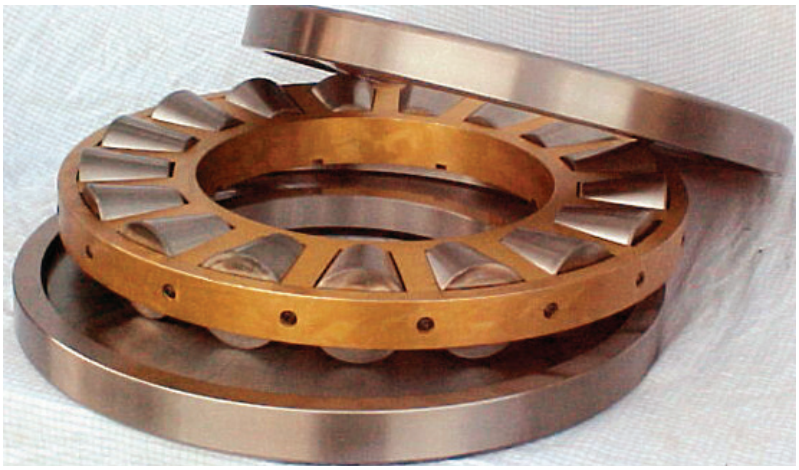
C51000 PHOSPHOR BRONZE (5% A)

OFFERED IN SOLID BARS, SHEET AND PLATE



C51000 Phosphor Bronze alloy is a cold worked bronze which possess a higher yield strength than is readily available in most cast bronze products. Typical applications for C51000 phosphor bronze include bearings, bushings, gears, pinions, shafts, thrust washers and valve parts. C51000 Phosphor bronze can be readily brazed or soldered. Capacity for being cold worked is good.

TYPICAL USES

Architecture
Bridge Bearing Plates

Electrical
Switch Parts, Electromechanical Spring Components, Resistance Wire, Electrical Flexing Contact Blades, Electrical Connectors, Electronic Connectors, Wire Brushes, Electronic and Precision Instrument Parts, Fuse Clips

Fasteners
Lock Washers, Fasteners, Cotter Pins

Other Industrial
Bellows, Textile Machinery, Perforated Sheets, Chemical Hardware, Truss Wire, Springs, Sleeve Bushings, Diaphragms, Clutch Disks, Bourdon Tubes, Beater Bar, Welding Rods, Pressure Responsive Elements

SIZES AVAILABLE

Solid Bar	3/16" - 6" diameter
Hex Bar	3/8" - 2" across the flats
Sheet and Plate	available upon request

SIMILAR OR EQUIVALENT SPECS

ASTM B-139
ASTM B-103
ASTM B-100
ASTM F-468
AMS 4625
SAE J463
SAE J461

AVIVA METALS®

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C51000 PHOSPHOR BRONZE (5% A)

Chemical Composition, Mechanical Properties, Physical Properties

CHEMICAL COMPOSITION

	Cu	Fe	Pb	P	Sn	Zn
min/max	Rem.	.10	.05	.03 - .35	4.2 - 5.8	.30
nominal	94.8	-	-	.20	5.0	-

MECHANICAL PROPERTIES

TEMPER	SECTION SIZE (INCHES)	TENSILE (KSI MIN)	ELONGATION IN HD MIN
H04 Hard	1/4" - 1/2"	70	13%
	Over 1/2" - 1"	60	15%
	Over 1"	55	18%

PHYSICAL PROPERTIES

Melting Point - Liquidus °F..... **1920**
Melting Point - Solidus °F..... **1750**
Density lb/cu in @ 68 °F..... **0.32**
Specific Gravity..... **8.86**
Electrical Resistivity ohms-cmil/ft @ 68 °F..... **69.1**
Electrical Conductivity % IACS @ 68 °F..... **15**
Thermal Conductivity Btu/ sq ft/ ft hr/ °F at 68°F..... **40.0**
Coefficient of Thermal Expansion 10^{-6} per °F (68-572 °F)..... **9.9**
Specific Heat Capacity Btu/lb/ °F @ 68 °F..... **0.09**
Modulus of Elasticity in Tension ksi..... **16000**
Modulus of Rigidity ksi..... **6000**
Machinability Rating..... **20**

AVIVA Color Code

BLACK

The values listed on this document represent reasonable approximations suitable for general engineering use. Due to commercial variations in composition and to manufacturing limitations, they should not be used for specification purposes. See applicable A.S.T.M. Specification references.

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