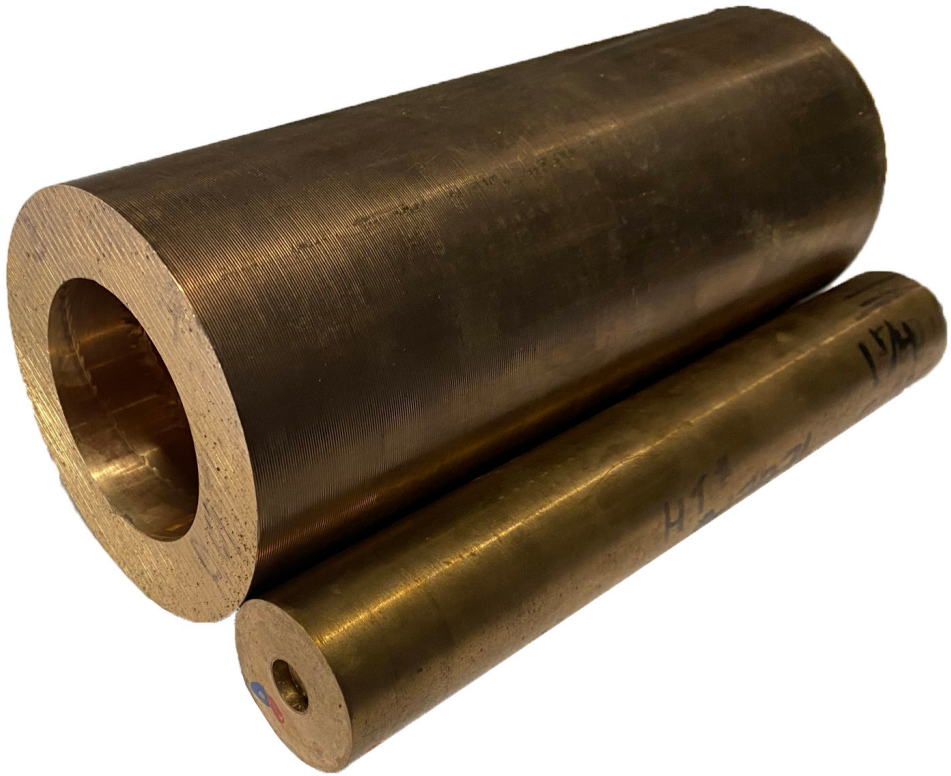
TIN BRONZE (C90700)

TYPICAL USES

The Bronze Alloy of choice for worm gears is C90700 (SAE65) High Tin Bronze. This has been the predominant bronze alloy for gear manufacturing throughout the 20th century, and continues to prevail today. High Tin Bronze Alloys include those which contain at least 6% tin. The addition of tin to these alloys is designed to strengthen the bronze.



CONTACT US

360 Sheldon Drive
Cambridge, ON N1T 1A9
519-622-7900
barstock@bearingbronze.com

GET A QUOTE

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TYPICAL USES

Product Category	Product	Reason
Industrial	Bearings	Corrosion Resistance, Low Co-efficient of Friction, Wear Resistance, Moderate Strength
	Bearings for Heavy Loads and Relatively Low Speeds	Corrosion Resistance, Low Co-efficient of Friction, Wear Resistance, Moderate Strength
	Gear Boxes	Good Resistance to Corrosion, Wear Resistance, Machinability - Good, Moderate Strength, Pressure Tight up to 260 C
	Gears	Corrosion Resistance, Low Co-efficient of Friction, Wear Resistance, Machinability - Good, Moderate Strength
	Restaurant Equipment	Appearance, Corrosion Resistance, Machinability - Good, Moderate Strength, Pressure Tight up to 260 C
	Speed Reducers	Corrosion Resistance, Low Co-efficient of Friction, Wear Resistance, Moderate Strength
	Valve Bodies	Wear Resistance, Moderate Strength, Pressure Tight up to 260 C
	Worm Gears	Low Co-efficient of Friction, Wear Resistance, Machinability - Good, Moderate Strength
	Worm Wheels	Corrosion Resistance, Low Co-efficient of Friction, Wear Resistance, Machinability - Good, Moderate Strength

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MECHANICAL PROPERTIES

Form	Temper Code	Tensile Strength (ksi)	YS-0.5% Ext (ksi)	Elongation (%)	Brinell Hardness, 500 kg load	Fatigue Strength** (ksi)
As Centrifugal Cast	M02	50 Min for Standard	28 Min for Standard	12 Min for Standard	95 Min for Standard	
		55 Typ	30 Typ	16 Typ	102 Typ	
As Continuous Cast	M07	40 Min for Standard	25 Min for Standard	10 Min for Standard		
		40 Min for Standard	25 Min for Standard	10 Min for Standard		
As Permanent Mold Cast	M05	55 Typ	30 Typ	16 Typ	102 Typ	
As Sand Cast	M01	35 Min for Standard	17 Min for Standard	10 Min for Standard	65 Min for Standard	25 Typ

* Measured at room temperature, 68°F (20°C).
** Fatigue Strength: 100 x 106 cycles, unless indicated as [N] x 106.

CHEMICAL PROPERTIES

Element											
	Cu(1,2)	Pb	Sn	Zn	Fe	P(3)	Ni(4)	Al	S	Sb	Si
Min (%)	88		10								
Max (%)	90	0.5	12	0.5	0.15	0.3	0.5	0.005	0.05	0.2	0.005

(1) Cu + Sum of Named Elements 99.4% min.
(2) In determining Cu min., Cu may be calculated as Cu + Ni.
(3) For continuous castings P shall be 1.5% max.
(4) Ni value includes Co.

FABRICATION PROPERTIES

Machining Technique	Suitability
Soldering	Excellent
Brazing	Good
Oxyacetylene Welding	Fair
Gas Shielded Arc Welding	Fair
Coated Metal Arc Welding	Fair
Machinability Rating	20

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