



# Gear Bronze

Gear Bronze is a copper-tin based alloy widely used for worm gears. Adding tin to copper forms a “delta phase” in the microstructure which is very hard and presence of this phase provides the good wear properties. Increased tensile strength can be achieved by adding nickel for higher load bearing applications. When keyways or splines are required, Gear Bronze can be cast bi-metallic using MCC grade MC90 for the inner layer (core). MC90 is a Manganese Bronze that provides higher strength, therefore higher load bearing. Bi-metallic gears provide a combination of strength and wear properties. Since Manganese Bronze is cheaper than the Tin Bronze, there is also cost savings. Applications for Gear Bronze include worm gears, bearings, bushings, valve bodies and speed reducers.

Typical Chemistry Range									
Grade	Cu	Sn	Ni	P	Pb	Zn	Al	Fe	Similar Grades
89-11	88.0-90.0	10.0-12.0	0.0-.50	0.0-.30	0.0-.50	0.0-.50	0.0-.005	0.0-.15	C90700, C90800
89-11Ni	84.0-87.0	11.0-12.5	1.2-2.0	0.0-0.30	0.0-0.25	0.0-0.25	0.0-.005	0.0-.15	C91700

Please contact your MCC International Representative for other Bronze Alloys available

Typical Mechanical Properties				
Grade	Tensile Strength (psi)	Yield Strength (psi)	Elongation (%)	BHN (@ 1000 Kg)
89-11	45,000-50,000	26,000-30,000	12 min.	95-100 Typ.
89-11Ni	50,000-55,000	28,000-32,000	12 min.	100 Typ.





MCC International's mission is to be a safe, stable, growing company; committed to our Customers, Employees and Owners by continually improving in all aspects of our business.



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