



Properties and Applications of Cast Copper-Base Alloys

Alloy	UNS Numbers	Properties	Applications
Coopers	C80100 to C81200	soft, ductile, high electrical and thermal conductivity. Good corrosion resistance, moderate strength	electrical connectors, hot metal handling
High Copper	C81400 to C82800	Unique combination of high strength and thermal and electrical conductivity, high hardness, wear and fatigue resistance, corrosion resistance	electrical contacts, clamps, welding gear, bearings, molds for plastics
Red Brass	C83300 to C83810	High aqueous and atmospheric corrosion resistance, moderate strength and electrical conductivity	valves, pumps, plumbing and boat hardware, pipe fittings, terminal ends for electric cables
Semi-Red Brass	C84200 to C84800	Moderate corrosion resistance and strength	low-pressure water valves, plumbing, hardware, pipe fittings, faucets
Yellow Brass	C85200 to C85800	Pleasant tallow color, easily polished, lower corrosion resistance	decorative hardware, architectural trim, plumbing fixture, bushings, fittings
Copper-Bismuth & SeBiLOY	C89320 to C89940	Lubricity, good machinability without lead, meets potable water standards	bearings and bushings, plumbing fixtures, valves and fittings for potable water, food processing
Manganese Bronze	C86100 to C86800	High strength (as cast), good wear resistance, moderate corrosion resistance	gears,, bolts, valve stems, marine fittings, propellers
Silicon Bronze & Silicon Brass	C87300 to C87800	Moderate strength, high corrosion resistance, low melting point	bearing, gears, valve stems, intricate pump and valve components, boat propellers
Tin Bronze	C90200 to C91700	Good corrosion resistance, ductility and wear resistance, reasonable strength, low friction coefficient vs. steel	bearings, piston rings, seal rings, valve fittings, gears, hydraulic and high-pressure steam parts, bells
Leaded and High-Leaded Tin Bronze	C92200 to C94500	Improved machinability and pressure tightness relative to tin bronzes, improved lubricity	similar to tin bronzes plus sleeve bearings
Nickel-Tin Bronze	C94700 to C94900	moderate strength, good corrosion and wear resistance components, machinery parts, motion translation devices	bearings, gears, nozzles, wear guides, valve and pump
Aluminum Bronze	C95200 to C95900	High strength, good corrosion, erosion-corrosion and cavitation resistance, good galling resistance	propellers, pump impellers, pump and valve parts, bearings, wear rings, marine hardware, pickling hooks and baskets
Copper-Nickels	C96200 to C96950	Excellent seawater corrosion resistance, bio-fouling resistance, stress corrosion cracking resistance in ammonia, high strength	marine equipment including pump components, impellers, valves, ship tail shaft sleeves, pipes, pipe fittings
Nickel Silvers	C97300 to C97800	Good aqueous corrosion resistance, high castability, moderate strength, pleasant silver luster	valves, fittings, hardware for food and beverage handling, seals and labyrinth ring in steam turbines, architectural trim, musical instrument valves
Leaded Coppers	C98200 to C98840	Corrosion resistance of copper with favorable lubricity and low friction, high conductivity	auto main and connecting rod bearings
Special Alloys-increment 800		Good thermal conductivity, oxidation resistance and thermal fatigue resistance, high hot hardness	glassmaking molds, plate glass rolls, marine hardware