

Lead-Free Hardness Ratings

Copper Alloy UNS No.	Product Description	Temper	Hardness Type	Typical or Minimum	Hardness
AMS 4590-C63020*	Nickel Aluminum Bronze	TQ50	Rockwell "C"	Min.	26
C89520	Bismuth Tin Bronze	M07	Brinell 500 kg load	Minimum	54
C89831	Bismuth Tin Bronze	M07	Brinell 500 kg load	Typical	55
C89844	Bismuth Tin Bronze	M07	Brinell 500 kg load	Typical	55
C89833	Bismuth Tin Bronze	M07	Brinell 500 kg load	Typical	60
C65100*	Low-Silicon Bronze B	H02, H04, H06	Rockwell "B"	Min. to Max.	60-95
C89835*	Bismuth Tin Bronze	M07	Brinell 500 kg load	Typical	65
C64200*	Aluminum Bronze	HR50	Rockwell "B"	Min. to Max.	65-100
C64210*	Aluminum Silicon Bronze	HR50	Rockwell "B"	Min. to Max.	65-100
C89320	Bismuth Tin Bronze	M07	Brinell 500 kg load	Typical	70
C90300	Tin Bronze	M07	Brinell 500 kg load	Typical	70
C89325	Bismuth Tin Bronze	M07	Brinell 500 kg load	Typical	73
C90500	Tin Bronze	M07	Brinell 500 kg load	Typical	75
C51000*	Phosphor Bronze 5% A	H04, H08	Rockwell "B"	Typical	87
C52100*	Phosphor Bronze 8% C	H04	Rockwell "B"	Typical	93
C90800	Tin Bronze	M07	Brinell 500 kg load	Typical	95
C90810	High Tin Bronze	M07	Brinell 500 kg load	Typical	95
C90700	Tin Bronze	M07	Brinell 500 kg load	Typical	102
C91000	Tin Bronze	M07	Brinell 500 kg load	Typical	105
C91300	Tin Bronze	M07	Brinell 3000 kg load	Typical	160
C95400	Aluminum Bronze	M07	Brinell 3000 kg load	Typical	170
C95400HT	Aluminum Bronze	TQ50	Brinell 3000 kg load	Typical	177
C63000*	Nickel Aluminum Bronze	HR50, TQ50	Brinell 3000 kg load	Min. to Max.	187-248
C95500	Nickel Aluminum Bronze	M07	Brinell 3000 kg load	Typical	208
C95500HT	Nickel Aluminum Bronze	TQ50	Brinell 3000 kg load	Typical	228
C95900	Aluminum Bronze	M07	Brinell 3000 kg load	Minimum	241

*Lead-free replacement alloy.

Lead-Free Machinability Ratings

Copper Alloy UNS No.	Product Description	Machinability
C89520	Bismuth Tin Bronze	85
C89831*	Bismuth Tin Bronze	85
C89833*	Bismuth Tin Bronze	81
C89320	Bismuth Tin Bronze	80
C89325*	Bismuth Tin Bronze	80
C89835	Bismuth Tin Bronze	70
C89844	Bismuth Tin Bronze	70
C64200*	Aluminum Bronze	60
C64210*	Aluminum Silicon Bronze	60
C90300	Tin Bronze	60
C95400	Aluminum Bronze	60
C95400HT	Aluminum Bronze	50
C95500	Nickel Aluminum Bronze	50
C63000*	Nickel Aluminum Bronze	30
C65100*	Low-Silicon Bronze B	30
C90500	Tin Bronze	30
C95500HT	Nickel Aluminum Bronze	30
C51000*	Phosphor Bronze 5% A	20
C52100*	Phosphor Bronze 8% C	20
C90700	Tin Bronze	20
C90800	Tin Bronze	20
C90810	High Tin Bronze	20
C91000	Tin Bronze	20
C91300	Tin Bronze	10
C95900	Aluminum Bronze	10
AMS 4590-C63020*	Nickel Aluminum Bronze	

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