

Cross Reference of Bronze Alloys

Alloy UNS	Standard	Material Description	Typical Properties and Applications	Machinability Rating	SAE	British		European		German DIN		Japan	French	Italian	Australian
						Designation	Symbol	Designation	Symbol	Designation	Symbol	Designation	Designation	Designation	Designation
C83600	ASTM B271/ ASTM B505	Leaded gunmetal	Excellent machinability, medium strength, good pressure tightness, not subject to dezincification.	85	40/J462	LG2	CuSn5Pb5Zn5	CC491K	CuSn5Zn5Pb5	2 0196 (RG5)	CuSn5Zn5Pb*	CAC402C (BC6)	U-E5Pb5Z5	UNI 7013-72-8A*	C83600*
C84400	ASTM B505	Leaded gunmetal	Excellent machinability, widely used in the pump industry for bowl and lineshaft bearings.	90	40/5A	LG1	CuSn3Pb5Zn8	CC490K	CuSn3Zn8Pb5	2 0198	CuSn2Zn5Pb*	CAC401 (BC01)	CuSn3Zn8Pb5*	-	-
C85200/ C85210	ASTM B271	Leaded yellow brass	A general purpose alloy with good machining properties.	80	J461/J462	SCB1	CuZn25Pb3Sn2	-	-	-	-	-	-	-	C85210
C85700/ C85710	ASTM B271/ ASTM B505	Leaded yellow brass	Corrosion-resisting but strength and bearing requirements are shortcoming. Suits brass hatches, fittings and frames. Chest hinges, brackets, clips, brass valves, brass pipe flanges and ship trims are also suitable.	80	6C	DCB3*	CuZn40Pb	CC754S	CuZn33Pb1Al-C	2 0342	CuZn33Pb*/ CuZn37Pb	CAC203 (Yb5C3)*	-	-	C85710*
C86200	ASTM B271/ ASTM B505	High strength manganese bronze	Superior strength and toughness. It's resistance to corrosion by seawater is unsatisfactory. Typical applications: whorm wheels and gears.	30	430A	HTB2*	CuZn25Al6Mn4Fe3*	CB762S	CuZn25Al6Mn4Fe3	2 0608*	CuZn34Al2*	CAC303 (HB5C3)	-	-	-
C86300	ASTM B271/ ASTM B505	High strength manganese bronze	Exceptional strength, good wearing properties and good ductility but has only fair machinability.	25	430B	HTB3*	CuZn28Al6FeMn	CC762S	CuZn25Al6Mn4Fe3	2 0598	CuZn25Al5*	CAC304 (HB5C4)	-	-	C86300

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C86400	ASTM B271/ ASTM B505	Leaded manganese bronze	Excellent machinability. Used where strength or toughness plus resistance to seawater corrosion is required. Suitable for shock loaded slides, bearings, whorm wheels, framing, hubs, lever arms, gears and liners. Susceptible to stress corrosion.	65	7A'	DCB1'	CuZn40Pb'	CC755S'	CuZn39Pb1AlB'	2.034'	CuZn37Pb'	CAC301'/CAC302	-	-	-
C86500	ASTM B505	Manganese bronze High tensile brass	Good strength and reasonable machinability. Suitable for machinery parts requiring strength and toughness, but susceptible to dezincification.	30	43	HTB1	CuZn35AlFeMn	CC765S	CuZn35Mn2AlFeFe ₂ C'	2.052	CuZn34Al2'	CAC301C (HBxC1)	UZ 36 MNA	-	C86500'
C86700	ASTM B 271	Leaded manganese bronze	This alloy does not respond to heat treatment.	65	n/a	HTB2'	CuZn34Mn3Al2Fe'	CC764S'	CuZn35AlFeMn	-	CuZn34Al2'	CAC302C (HBxC2C7)	UZ 23 A4	-	-
C90500	ASTM B271/ ASTM B505	Tin bronze	Unleaded hard bronze with excellent wearing properties. Preferred for guides, bushings operating at very high loads at low speed, gears and worms.	50	62	G1'	CuSn10Zn2	-	CuSn10Zn2	2.1086 (RG10)	CuSn10Zn'	CAC403C (BC3)	U-E12P'/U-E8Z2'	UNI 7013-72-6A'	C92610'
C90700/ C90710	ASTM B505	Tin bronze/ Phosphor bronze	Good machinability, high strength and good corrosion resistance. Suitable for heavy duty gears and bearings with medium to high loads.	30	65	PB1'	CuSn10P	CC481K	CuSn10-P	2.1050	CuSn10	CAC502C (PBCaC)	U-Z 10 90/10	-	C90710'
C90800/ C90810	AS 1565	Gear bronze/ Phosphor bronze	High strength, good machinability and corrosion resistance. Suitable for heavy duty	30	65'	PB2	CuSn11P	CC483K	CuSn12	2.1052	CuSn12'	CAC502C (PBCaC)'	U-E12P	UNI 7013-72-2A'	C90810'

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C91700	ASTM B505	Nickel tin bronze	gears/bearings with medium to high loads. Good resistance to impact loading.	40	640	CT2 ⁺	CuSn12Ni ⁺	CC484K ⁺	CuSn12Ni2 ⁺	2.1060 ⁺	CuSn12Ni ⁺	—	—	—	C91700
C92200	ASTM B271/ ASTM B505	Leaded tin bronze	Medium strength and resistance to saltwater corrosion. Low and medium pressure valves, castings for stern tube and propeller shaft sleeves, hose couplings, fittings and cocks. Good brazing quality.	42	622	LG3	G-CuSn7Pb4Zn2	CC498K	CuSn6Zn4Pb2 ⁺	—	CuSn6Zn4Pb2 ⁺	CAC407	U-E7Z5Pb4	—	—
C92500	ASTM B505	Leaded tin bronze	Bearing bronze	30	640	—	—	CC484K	CuSn1Pb2 ⁺	2.1063 ⁺	GB-CuSn1Pb ⁺	—	—	—	—
C92700	ASTM B505	Leaded tin bronze	Bearings, shafts, gears and worm wheels. Snock, high corrosion/erosion resistance. Used for hard shafts and heavy duty gears due the combination of high working load, high speed, impact loading or pouring.	45	63	PB4 ⁺	—	CC480K	CuSn1Pb2 ⁺	2.1050 ⁺	CuSn12P ⁺	LBC2	—	—	—
C93200	ASTM B505	Leaded gunmetal	Excellent machinability, good hardness, strength and wear resistance. Not subject to dezincification and has reasonable resistance to seawater.	70	660	SAE660	—	CC493K	CuSn7Zn4Pb7	2.1090 (RG7)	CuSn7Zn4Pb ⁺	—	U-EPb2 ⁺	UNI 7013-72-7A	C93200

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C93500	ASTM B605	High lead tin bronze	Good general purpose bronze for applications involving high speeds at low loads.	70	66*	LB4	CuSn5Pb9	CC494K	CuSn5Pb9*	—	—	—	—	—	C93500
C93700	ASTM B605	Leaded bronze	Leaded tin bronze with excellent machinability, medium strength and good corrosion resistance. Will withstand mild acids as found in mine water.	95	64	LB2	CuSn10Pb10	CC495K	CuSn10Pb10	2.1176	CuPb10Sn	CAC603C (LBC3C)	U Pb8	UNI 7013- 72-3A*	C93700
C94100	ASTM B605	High lead tin bronze	For bearings or bushings under light loads and high speeds. Suits if bearing metal must deform slightly to conform to irregular motion or perfect fit. Effective when lubrication is difficult.	80	Backing/ 794/799	LB6*	CuPb20Sn5	CC497K	CuPb20Sn5*	2.1188	CuPb20Sn	CAC605C	CuPb20Sn5	—	C94100
C95300	ASTM B271	Aluminium bronze	A heavy duty, dense, high- strength alloy with hardness equal to manganese bronze. Excellent resistance to corrosion and fatigue. Good wearing qualities for elevated temperature uses. Proper precautions and controls are necessary to obtain satisfactory welds.	35	68B	AB1*	—	—	CuAl9*	—	—	CAC701C	—	—	C62300*
C95400	ASTM B271/ ASTM B605	Aluminium bronze	Excellent wear resistance, good impact resistance and reasonable corrosion resistance. Suitable for high strength bearings.	50	9C	AB1	CuAl10Fe3	CC331G	CuAl10Fe3	2.0940*	CuAl11Fe4	CAC702C*	—	UNI 6274*	C95400

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C94100	ASTM B605	High leaded tin bronze	acids as found in mine water. For bearings or bushings under light loads and high speeds. Suits if bearing metal must deform slightly to conform to irregular motion or perfect fit. Effective when lubrication is difficult.	80	Backing/ 794/799	LB5*	CuPb20Sn5	CC497K	CuPb20Sn5*	2.1188	CuPb20Sn	CAC605C	CuPb20Sn5	-	C94100
C95300	ASTM B271	Aluminium bronze	A heavy duty, dense, high-strength alloy with hardness equal to manganese bronze. Excellent resistance to corrosion and fatigue. Good wearing qualities for elevated temperature uses. Proper precautions and controls are necessary to obtain satisfactory welds.	35	68B	AB1*	-	-	CuAl9*	-	-	CAC701C	-	-	C62300*
C95400	ASTM B271/ ASTM B605	Aluminium bronze	Excellent wear resistance, good impact resistance and reasonable corrosion resistance. Suitable for high strength bearings.	50	9C	AB1	CuAl10Fe3	CC331G	CuAl10Fe3	2.0940*	CuAl11Fe4	CAC702C*	-	UNI 5274*	C95400
C95500/ C95520	ASTM B271/ ASTM B605	Nickel aluminium bronze	Good wear properties, suited for elevated temperatures. Heavy duty, high strength alloy with excellent resistance to corrosion and fatigue.	50	9D/68B	AB2*	-	CC333G	CuAl10Fe5Ni5	2.0981*/2.0940*	CuAl11Ni1*	CAC703*	U- A11Ni5FeY200	UNI 5275*	C62700*
C95800	ASTM B605	Nickel aluminium bronze	Widely used for marine applications, having superior corrosion resistance, high strength, good wear and erosion resistance.	40	68B/630	AB2*	CuAl10Fe5Ni5*	CC333G	CuAl10Fe5Ni5	2.0970/2.0975	CuAl10Ni1*	CAC703C (A1BC3)*	U- AgNi5FeY200*	-	C95810*

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C35330	AS/NZS 1567	Dezincification resistant machining brass	Arsenical leaded dezincification resistant alloy with good machining performance. Meets requirements of AS/NZS 1567 for products used in contact with drinking water.	80	n/a	CZ132	-	CW602N	CuZn36Pb2As	2.0371	CuZn36Pb3	-	-	-	C35200
C36000	ASTM B16	Brass, free machining/ free cutting	High speed repetition work with ductility for light riveting	95	72/J461/J463	CZ124	CuZn36Pb3	CW603N	CuZn36Pb3	2.0375	CuZn36Pb3	C3601	CuZn36Pb3	UNI EN 12167	C36000
C37700	ASTM B124	2% leaded 80/40 forging brass	Standard hot forging brass for a wide range of uses	80	88/J461	CZ106/122/PCB1	CuZn38Pb2	CW617N	CuZn39Pb2	2.0380	CuZn39Pb	C3603/C3771	CuZn38Pb2	UNI 50368	C37710
C38600	ASTM B455	Free machining brass/ architectural bronze	Maximum productivity and tool life on high speed repetition work	100	72/J461/J463	CZ121	CuZn39Pb3	CW614N	CuZn39Pb3	2.0401	CuZn39Pb3	C3604	CuZn40Pb3	-	C38600
C46400	ASTM B21	Naval brass	Improved corrosion resistance: bolts, fittings etc. in marine use. Low lead content for use where environmental aspects may be a concern.	30	73/J461/J463	CZ112/113/133	-	CW719R	CuZn38Sn1	3.0530	-	C4641	-	-	C46400
C48600	AS/NZS 1567	Dezincification resistant forging brass	Arsenical leaded dezincification resistant alloy with good machining performance and good hot forging properties	80	n/a	-	-	-	CuZn36Pb2Sn1	2.0371	CuZn36Pb1	-	CuZn36Pb2Sn1	-	C48600
C64200/ C64300	ASTM B150	Aluminum-silicon bronze	High strength aluminum bronze; excellent corrosion resistance; good forging properties and fair machinability	60	J461/J463	CA107	CuAl7Si2	CW301G/ CW302G	CuAl6Si2Fe/ CuAl7Si2	-	CuAl7Si2	-	CuAl7Si2	-	-
C67300	AS/NZS 1567	Silicon-manganese bronze	Excellent wear resistance; for bushings, gear blanks and hydraulic pump components	70	J461/J463	-	-	-	-	-	-	-	-	-	C67300
C68600	AS/NZS 1567	Leaded manganese brass	Combines high strength with fair machinability and hot forgability	70	n/a	CZ114/115	-	CW716R	CuZn38Mn1Al	2.0510/2.0561	CuZn37Al/ CuZn40Al1	-	CuZn39Mn1AlPB5	-	C68600