

If your required Grade is not listed please contact CSC's Engineering for further information.
Other grades can be provided on request.

ASTM COPPER, BRASS & BRONZE:			CHEMICAL COMPOSITION																	MECHANICAL PROPERTIES			
ASTM Code	Grade	Type	Copper Cu%	Tin Sn%	Lead Pb%	Zinc Zn%	Iron Fe%	Antimony Sb%	Nickel + Cobalt Ni%+Co%	Sulfur S%	Phosphorus P%	Aluminum Al%	Silicon Si%	Manganese Mn%	Chromium Cr%	Arsenic As%	Carbon C%	Copper %	Alloy % Total Without Copper	Tensile Strength K.S.I.	Yield Strength K.S.I.	Elong%	Brinell Hardness min.
	C81100	Copper	99.70															99.70	0.30	28	4	45	
	C83300	Copper-tin-zinc	93.00 to 94.00	1.50 to 2.00	1.50 to 2.00	4.00 to 6.00												91.50	8.50	37	15	34	
	C83400	Copper-tin-zinc	88.00 to 92.00	0.20	0.50	10.00 to 12.00												88.30	11.70	37	15	34	
B30	C83600	Leaded red brass	84.00 to 86.00	4.30 to 6.00	4.00 to 5.70	4.30 to 6.00	0.25	0.25	0.80	0.08	0.03	.005	.005					83.43	16.57	38	16.5	34	
B30	C83800	Leaded red brass	82.00 to 83.50	3.50 to 4.20	5.80 to 6.80	5.50 to 8.00	0.25	0.25	0.80	0.08	0.02	.005	.005					81.69	18.31	35	16	25	
B30	C84200	Leaded semi-red brass	78.00 to 82.00	4.30 to 6.00	2.00 to 2.80	10.00 to 16.00	0.35	0.25	0.80	0.08	0.02	.005	.005					77.94	22.06	24.6	9.8	27	
B30	C84400	Leaded semi-red brass	79.00 to 82.00	2.50 to 3.50	6.30 to 7.70	7.00 to 10.00	0.35	0.25	0.80	0.08	0.02	.005	.005					79.99	20.01	23.9	10.5	26	
B30	C84800	Leaded semi-red brass	75.00 to 76.70	2.30 to 3.00	5.50 to 6.70	13.00 to 16.00	0.35	0.25	0.80	0.08	0.02	.005	.005					75.24	24.76	34	14	27	
B30	C85200	Leaded yellow brass	70.00 to 73.00	0.80 to 1.70	1.50 to 3.50	21.00 to 27.00	0.50	0.20	0.80	0.05	0.01	.005	0.05					70.64	29.37	38	13	40	
B30	C85400	Leaded yellow brass	66.00 to 69.00	0.50 to 1.50	1.50 to 3.50	25.00 to 31.00	0.50		0.80			.005	0.05					67.15	32.86	34	12	35	
B30	C85700	Leaded yellow brass	58.00 to 63.00	0.50 to 1.50	0.80 to 1.50	33.00 to 40.00	0.50		0.80			0.80	0.05					59.20	40.80	52	18	50	
B30	C85800	Leaded yellow brass	57.00 Min.	1.50	1.50	31.00 to 41.00	0.50	0.05	0.50	0.05	0.01	0.50	0.25			0.05		58.84	41.16	38.5	21	15	
B30	C86200	High-strength yellow bronze	60.00 to 66.00	0.10	0.10	22.00 to 28.00	2.00 to 4.00		0.80			3.00 to 4.90		2.50 to 5.00				63.30	36.70	94	48	22	
B30	C86300	High-strength yellow bronze	60.00 to 66.00	0.10	0.10	22.00 to 28.00	2.00 to 4.00		0.80			5.00 to 7.50		2.50 to 5.00				61.00	39.00	110	60	12	223
B30	C86400	High-strength yellow bronze	56.00 to 62.00	0.50 to 1.00	0.50 to 1.30	34.00 to 42.00	0.40 to 2.00		0.80			0.50 to 1.50		0.10 to 1.00				56.80	43.20	69	26	23	
B30	C86500	High-strength yellow bronze	55.00 to 60.00	1.00	0.30	36.00 to 42.00	0.40 to 2.00		0.80			0.50 to 1.50		0.10 to 1.50				55.90	44.10	72	30	37	
B30	C86700	High-strength yellow bronze	55.00 to 60.00	1.50	0.50 to 1.50	30.00 to 38.00	1.00 to 3.00		0.80			1.00 to 3.00		1.00 to 3.50				56.45	43.55	59.8	29.5	20	
B30	C87400	Silicon brass & bronze	79.00 Min.		1.00	12.00 to 16.00						0.50	2.50 to 4.00					81.25	18.75	38.7	16.9	30	
B30	C87500	Silicon brass & bronze	79.00 Min.		0.09	12.00 to 16.00						0.50	3.00 to 5.00					81.41	18.59	67	32	20	
B30	C87600	Silicon brass & bronze	88.00 Min.		0.09	4.00 to 7.00	0.20						3.50 to 5.50	0.25				89.46	10.54	67	32	20	
B30	C87700	Silicon brass & bronze	87.50 Min.	2.00	0.09	7.00 to 9.00	0.50	0.1	0.25				2.50 to 3.50	0.80				85.11	14.89	47	24	10	
B30	C87800	Silicon brass & bronze	80.00 Min.	0.25	0.09	12.00 to 16.00	0.15	0.05	0.20	0.05	0.01	0.15	3.80 to 4.20	0.15		0.05		80.85	19.15	59.8	35.2	25	
B30	C90300	Tin bronze	86.00 to 89.00	7.80 to 9.00	0.25	3.50 to 5.00	0.15	0.20	0.80	0.05	0.03	.005	.005					85.86	14.14	48	21	36	
B30	C90500	Tin bronze	86.00 to 89.00	9.50 to 10.50	0.25	1.50 to 3.00	0.15	0.20	0.80	0.05	0.03	.005	.005					86.26	13.74	40	18	20	
B30	C90700	Tin bronze	88.00 to 90.00	10.30 to 12.00	0.50	0.50	0.15	0.20	0.50	0.05	0.30	.005	.005					86.64	13.36	48	21	36	
B30	C90800	Tin bronze	85.00 to 89.00	11.30 to 13.00	0.25	0.25	0.15	0.10	0.50	0.05	0.30	.005	.005					86.24	13.76	48	21	36	
B30	C91000	Tin bronze	84.00 to 86.00	14.30 to 16.00	0.20	1.50	0.10	0.10	0.80	0.05	0.03	.005	.005					82.06	17.94	48	21	36	
B30	C91100	Tin bronze	82.00 to 85.00	15.30 to 17.00	0.25	0.25	0.15	0.20	0.50	0.05	1.00	.005	.005					81.44	18.56	35	25	2	135
B30	C91300	Tin bronze	79.00 to 82.00	18.00 to 20.00	0.25	0.25	0.25	0.20	0.50	0.05	1.00	.005	.005					78.49	21.51	35	30	0	170
B30	C91700	Tin bronze	84.00 to 87.00	11.50 to 12.50	0.25	0.25	0.15	0.10	1.20 to 2.00	0.05	0.30	.005	.005					85.29	14.71	48	21	36	
B30	C92200	Tin bronze	86.00 to 89.00	5.80 to 6.50	1.00 to 1.80	3.50 to 5.00	0.20	0.20	0.80	0.05	0.03	.005	.005					86.91	13.09	42	18	43	
B30	C92300	Tin bronze	85.00 to 89.00	7.80 to 9.00	0.30 to 0.90	3.00 to 5.00	0.20	0.20	0.80	0.05	0.03	.005	.005					85.71	14.29	44	18	35	
B30	C92500	Tin bronze	85.00 to 88.00	10.30 to 12.00	1.00 to 1.50	0.50	0.20	0.20	0.80 to 1.50	0.05	0.30	.005	.005					85.19	14.81	44	18	35	
B30	C92700	Tin bronze	86.00 to 89.00	9.30 to 11.00	1.00 to 2.30	0.80	0.15	0.20	0.80	0.05	0.25	.005	.005					85.94	14.06	44	20	32	
B30	C92900	Tin bronze	82.00 to 86.00	9.30 to 11.00	2.00 to 3.00	0.25	0.15	0.10	2.80 to 4.00	0.05	0.50	.005	.005					82.89	17.11	44	20	32	
B30	C93200	High-lead tin bronze	82.00 to 84.00	6.50 to 7.50	6.50 to 7.70	2.50 to 4.00	0.20	0.30	0.80	0.08	0.03	.005	.005					81.23	18.77	40	18	35	
B30	C93700	Copper-tin-lead	78.00 to 81.00	9.30 to 10.70	8.30 to 10.70	0.80	0.10	0.50	0.50	0.08	0.05	.005	.005					78.46	21.54	30	12	15	
B30	C93800	High-lead tin bronze	76.00 to 79.00	6.50 to 7.50	14.00 to 16.00	0.80	0.10	0.50	0.80	0.08	0.05	.005	.005					75.66	24.34	34	17	30	
B30	C94300	High-lead tin bronze	69.00 to 72.00	4.70 to 5.80	23.00 to 27.00	0.80	0.10	0.70	0.80	0.08	0.05	.005	.005					67.21	32.79	27	14	20	
B30	C94500	High-lead tin bronze	70.00 to 75.00	6.30 to 8.00	16.00 to 21.50	1.00	0.10	0.70	0.80	0.08	0.05	.005	.005					71.36	28.64	27	14	20	
B30	C94700	Nickel-tin bronze	86.00 to 89.00	4.70 to 6.00	0.08	1.30 to 2.50	0.20	0.10	4.50 to 6.00	0.05	0.05	.005	.005	0.20				86.81	13.19	27	14	20	
B30	C95200	Aluminum bronze	86.00 Min.				2.50 to 4.00					8.50 to 9.50						87.75	12.25	82	27	40	
B30	C95300	Aluminum bronze	86.00 Min.				0.80 to 1.50					9.00 to 11.00						88.85	11.15	77	28	21	
B30	C95400	Aluminum bronze	83.00 Min.				3.00 to 5.00	1.50				10.00 to 11.50		0.50				83.25	16.75	90	35	15	
B30	C95500	Aluminum bronze	78.00 Min.				3.00 to 5.00		3.00 to 5.50			10.00 to 11.50		3.50				77.50	22.50	102	43	11	
B30	C95800	Nickel-Aluminum bronze	79.00 Min.		0.02		3.50 to 4.50		4.00 to 5.00			8.50 to 9.50	0.05	0.80 to 1.50				81.28	18.72	96	38	25	
B30	C96400	Cupro-nickel	65.00 to 67.00		.005		0.25 to 1.00		29.50 to 31.50	0.02	0.02	.005	0.30 to 0.50	0.80 to 1.50			0.05	67.23	32.78	70	40	25	
B30	C97300	Leaded nickel bronze	53.00 to 58.00	1.50 to 3.00	8.00 to 11.00	17.00 to 25.00	1.00	0.35	11.00 to 14.00	0.08	0.05	.005	0.05	0.50				52.72	47.29	39	17	35	

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SYMBOLS	Al	Aluminum	Fe	Iron
	As	Arsenic	Mg	Magnesium
	B	Boron	Mn	Manganese
	C	Carbon	Mo	Molybdenum
	Cb	Columbium (Niobium)	N	Nitrogen
	Ce	Cerium	Nb	Niobium (now Columbium)
	Co	Cobalt	Ni	Nickel
	Cr	Chromium	P	Phosphorus
	Cu	Copper	Pb	Lead
	Fe	Iron	S	Sulfur
	Mg	Magnesium	Sb	Antimony
	Mn	Manganese	Se	Selenium
	Mo	Molybdenum	Si	Silicon
	N	Nitrogen	Sn	Tin
Nb	Niobium (now Columbium)	Ta	Tantalum	
Ni	Nickel	Ti	Titanium	
P	Phosphorus	V	Vanadium	
Pb	Lead	W	Tungsten	
		Zn	Zinc	