Typical Properties of Commonly Used Copper-Base Casting Alloys

		Nominal Chemical Analysis (%)						
UNS Number	Alloy Name	Cu	Sn	Pb	Zn	Fe	Al	Others
C81100	Copper	100						
C 82500	Beryllium copper	97						2 Be, 0.5 Co
C 83450	Leaded red brass	88	2.5	2	6.5			1 Ni
C 83600		85	5	5	5			
C 83800		83	4	5	7			
C 84400	Leaded semi-red brass	81	3	7	9			
C 84800		76	2.5	6 . 5	15			
C 85200	Leaded yellow brass	72	1	3	24			
C 85400		67	1	3	29			
C 85700		61	1	1	37		0.3	
C 86200	Mn bronze	64			26	3	4	3 Mn
C 86300		61			23	3	6	3 Mn
C 86400		58		1	38	1	0.5	0.5 Mn
C 86500		58			39	1	1	1 Mn
C 87200	Silicon bronze	92			4			4 Si
C 87500	Silicon brass	82			14			4 Si
C 90300	Tin bronze	88	10		2			
C 90500		88	8		4			
C 92200	Leaded tin bronze	88	6	1.5	4.5			
C 92300		87	8	1	4			
C 92600		87	10	1	2			
C 93200	High-leaded tin	83	7	7	3			
C 93500	Bronze	85	5	9	1			
C 93700		80	10	10				
C 93800		78	7	15				
C 94300		71	5	25				
C 95200	Al bronze	88				3	9	
C 95300		89				1	10	
C 95400		85				4	11	
C 95500		81				4	11	4 Ni
C 95800		81.3				4	9	4.5 Ni, 1.2 Mn
C 96400	Cupronickel 30%	67				1		30 Ni
C 97300	Leaded nickel	57	2	9	20			12 Ni
C 97400	Silver	60	3	5	16			16 Ni

		Nominal Chemical Analysis (%)						
UNS Number	Alloy Name	UNS Number	Alloy Name	UNS Number	Alloy Name	UNS Number	Alloy Name	UNS Number
C 97600		64	4	4	8			20 Ni
C 97800		66	5	2	2			25 Ni

		Nominal Chemical Analysis (%)							Compression Strength				
UNS Number	Alloy Name	UTS (ksi)	YS (ksi)	Elon. (%)	Elon. (psi x 10^6)	0.001 in. set	0.01 in. set	Bhn	Impact* (ft lb)	Fatigue** strength (ksi)	Spec. gravity	Thermal cond.% of copper	Electrical cond.% IACS
C81100	Copper	28	4	45	17			40	C-45		8.9	100	100
C 82500	Beryllium copper	80	40	20	18			150			8.3	30	20
C 83450	Leaded red brass	37	15	34		10	14	55		13	8.8		20
C 83600		38	16.5	34	12	14	18	65	C-11	11	8.8	18	15
C 83800		36	16	30		12		63	1-8		8.7	18	15.2
C 84400	Leaded semi-red brass	34	14	27	10			55			8.7	18	16.6
C 84800		38	14.9	37	15	13	16	58	C-12	11	8.8	18	16.5
C 85200	Leaded yellow brass	38	13	40	13	9		46			8.5	21	18.6
C 85400		34	12	35	13	9		55			8.5	23	19.6
C 85700		52	18	50				77			8.4	22	21.8
C 86200	Mn bronze	94	48	22	15	50		180	I-12		7.9	9	7.4
C 86300		120	69	16	14	71	97	235	C-14	25	7.7	9	7.7
C 86400		69	26	23	13	23		88	I-30		8.2	22	19.3
C 86500		72	30	37	15	24	35	130	C-30	21	8.3	22	21.5
C 87200	Silicon bronze	60	25	40	17	19		87	I-30		8.3	7	6.1
C 87500	Silicon brass	67	32	20	15	27	43	120	C-32	22	8.3	7	6.5
C 90300	Tin bronze	48	21	36	15			80	I-10	13	8.7	19	10.9
C 90500		47	20	38	15	13		70	C-14		8.7	19	12.4
C 92200	Leaded tin bronze	42	18	43	13	15	18	64	C-19	11	8.7	18	13.8
C 92300		44	18	35	14	10		70	I-14		8.8	18	12.3
C 92600		44	20	32	14	13		70	I-9		8.8	13	10.8
C 93200	High-leaded tin	40	18	35	15			67		16	8.9	15	12.4
C 93500	Bronze	35	17	30	12	13		60	I-8		8.9	17	14.9

UNS Number	Alloy Name	UTS (ksi)	YS (ksi)	Elon. (%)	Elon. (psi x 10^6)	0.001 in. set	0.01 in. set	Bhn	Impact* (ft lb)	Fatigue** strength (ksi)	Spec. gravity	Thermal cond.% of copper	Electrical cond.% IACS
C 93700		39	18	30	12	18	22	65	C-11	13	9.0	12	10.0
C 93800		34	17	30	10	15		61	I-5	10	9.2	13	11.6
C 94300		27	14	20	11	13		55	I-5		9.4	16	9.0
C 95200	Al bronze	82	27	40	17	28		125	I-40	23	7.5	13	12.2
C 95300		77	28	21	16	20		140	I-30	22	7.5	16	15.1
C 95400		90	35	15	18			160	I-15	30	7.5	15	13.0
C 95500		102	43	11	19			195	C-9	32	7.5	11	8.9
C 95800		96	38	25	19	35	48	160	C-15	31	7.5	11	8.9
C 96400	Cupronickel 30%	70	40	25	21			140	C-78	18	8.9	8	8.9
C 97300	Leaded nickel	39	17	35	16			60			8.9	7	6.5
C 97400	Silver	40	17	30	16			65			8.9	7	5.4
C 97600		48	26	22	19	24	31	80	C-11	15	8.9	6	5.0
C 97800		58	33	15	19			130			8.9	6	4.6