

Lead-Free & Lead-Free Replacement Product List

Chemical Composition (Standard-Stocked Lead-Free & Lead-Free Replacement Alloys)

Copper Alloy UNS No.	Cu%	Pb%	Sn%	Zn%	Fe%	P%	Ni%	Al%	Bi%	Mn%	S%	Sb%	Si%
C89835*	85.00-89.00	0.09	6.00-7.50	2.00-4.00	0.20	0.10	1.00 ³	0.005	1.70-2.70		0.08	0.35	0.005
C90300	86.00-89.00 ¹	0.30	7.50-9.00	3.00-5.00	0.20	0.05 ²	1.00 ³	0.005			0.05	0.20	0.005
C95400	83.00 min				3.00-5.00		1.50 ³	10.00-11.50		0.50			
C95400HT	83.00 min				3.00-5.00		1.50 ³	10.00-11.50		0.50			
C95500	78.00 min				3.00-5.00		3.00-5.50 ³	10.00-11.50		3.50			
C95500HT	78.00 min				3.00-5.00		3.00-5.50 ³	10.00-11.50		3.50			
C95900	Rem.				3.00-5.00		0.50 ³	12.00-13.50		1.50			

*Lead-free replacement alloy. ¹In determining Cu min., Cu may be calculated as Cu + Ni. ²For continuous castings, P shall be 1.5%, max. ³Ni value includes Co. Note: Unless otherwise noted, single values represent maximums.

Chemical Composition (Non-Standard Lead-Free & Lead-Free Replacement Alloys)

Copper Alloy UNS No.	Cu%	Pb%	Sn%	Zn%	Fe%	P%	Ni%	Al%	Bi%	Mn%	S%	Sb%	Si%
C89320	87.00-91.00	0.09	5.00-7.00	1.00	0.20	0.30	1.00 ³	0.005	4.00-6.00		0.08	0.35	0.005
C89325*	84.00-88.00	0.10	9.00-11.00	1.00	0.15	0.10	1.00 ³	0.005	2.70-3.70		0.08	0.50	0.005
C89520 ¹	85.00-87.00	0.09	5.00-6.00	4.00-6.00	0.20		1.00 ³	0.005	1.60-2.20 ⁴		0.08	0.25	
C89831*	87.00-91.00	0.10	2.70-3.70	2.00-4.00	0.30	0.05	1.00 ³	0.005	2.70-3.70		0.08	0.25	0.005
C89833*	86.00-91.00	0.09	4.00-6.00	2.00-6.00	0.30	0.05	1.00 ³	0.005	1.70-2.70		0.08	0.25	0.005
C89844	83.00-86.00	0.20	3.00-5.00	7.00-10.00	0.30	0.05	1.00 ³	0.005	2.00-4.00		0.08	0.25	0.005
C90500	86.00-89.00 ¹	0.30	9.00-11.00	1.00-3.00	0.20	0.30 ²	1.00 ³	0.005			0.05	0.20	0.005
C90700	88.00-90.00 ¹	0.50	10.00-12.00	0.50	0.15	0.30 ²	0.50 ³	0.005			0.05	0.20	0.005
C90800	85.00-90.00 ¹	0.25	11.00-13.00	0.25	0.15	0.30 ²	0.50 ³	0.005			0.05	0.20	0.005
C90810	Rem. ¹	0.25	11.00-13.00	0.30	0.15	0.15-0.80 ²	0.50 ³	0.005			0.05	0.20	0.005
C91000	84.00-86.00 ¹	0.20	14.00-16.00	1.50	0.10	0.05 ²	0.80 ³	0.005			0.05	0.20	0.005
C91300	79.00-82.00 ¹	0.25	18.00-20.00	0.25	0.25	1.00 ²	0.50 ³	0.005			0.05	0.20	0.005

*Lead-free replacement alloy. ¹Chemical requirements for other elements: Se 0.80-1.10%, Bi:Se >= 2:1. ¹In determining Cu min., Cu may be calculated as Cu + Ni. ²For continuous castings, P shall be 1.5%, max. ³Ni value includes Co. ⁴Bi:Se >= 2:1 Note: Single values represent maximums.

Lead-Free & Lead-Free Replacement Product List (continued)

Chemical Composition (Other Lead-Free Replacement Alloys – Wrought Drawn)

Copper Alloy UNS No.	Cu%	Pb%	Sn%	Zn%	Fe%	P%	Ni%	Al%	Co%	Cr%	As%	Mn%	Si%
C51000*	Rem.	0.05	4.20- 5.80	0.30	0.10	0.03- 0.35							
C52100	Rem.	0.05	7.00- 9.00	0.20	0.10	0.03- 0.35							
C63000*	Rem. ¹		0.20	0.30	2.00- 4.00		4.00- 5.50 ²	9.00- 11.00				1.50	0.25
AMS 4590- C63020*	Rem.	0.03	0.25	0.30	4.00- 5.50		4.20- 6.00 ²	10.00- 11.00	0.20	0.05		1.50	0.15
C64200*	Rem. ¹	0.05	0.20	0.50	0.30		0.25 ²	6.30- 7.60			0.09	0.10	1.50- 2.20
C64210	Rem.	0.05	0.20	0.50	0.30		0.25 ²	6.30- 7.60			0.09	0.10	1.50- 2.00
C65100	Rem. ¹	0.05		1.50	0.80							0.70	0.80- 2.00

*Standard-stocked alloy. ¹Cu value includes Ag. ²Ni value includes Co.
Note: Single values represent maximums.