

# Cast Products Chemical Composition

Copper Alloy UNS No.	Product Description	Cu%	Pb%	Sn%	Zn%	Fe%	P%	Ni%	Al%	Co%	Bi%	Mn%	S%	Sb%	Si%	Se%
C83600	Leaded Red Brass	84.00-86.00 <sup>1</sup>	4.00-6.00	4.00-6.00	4.00-6.00	0.30	0.05 <sup>2</sup>	1.00 <sup>3</sup>	0.005				0.08	0.25	0.005	
C83800	Leaded Red Brass	82.00-83.80 <sup>1</sup>	5.00-7.00	3.30-4.20	5.00-8.00	0.30	0.03 <sup>2</sup>	1.00 <sup>3</sup>	0.005				0.08	0.25	0.005	
C84200	Leaded Semi-Red Brass	78.00-82.00 <sup>1</sup>	2.00-3.00	4.00-6.00	10.00-16.00	0.40	0.05 <sup>2</sup>	0.80 <sup>3</sup>	0.005				0.08	0.25	0.005	
C84400	Leaded Semi-Red Brass	78.00-82.00 <sup>1</sup>	6.00-8.00	2.30-3.50	7.00-10.00	0.40	0.02 <sup>2</sup>	1.00 <sup>3</sup>	0.005				0.08	0.25	0.005	
C84800	Leaded Semi-Red Brass	75.00-77.00 <sup>1</sup>	5.50-7.00	2.00-3.00	13.00-17.00	0.40	0.02 <sup>2</sup>	1.00 <sup>3</sup>	0.005				0.08	0.25	0.005	
C85700	Leaded Naval Brass	58.00-64.00 <sup>1</sup>	0.80-1.50	0.50-1.50	32.00-40.00	0.70		1.00 <sup>3</sup>	0.80						0.05	
C86200	Manganese Bronze	60.00-66.00 <sup>1</sup>	0.20	0.20	22.00-28.00	2.00-4.00		1.00 <sup>3</sup>	3.00-4.90			2.50-5.00				
C86300	Manganese Bronze	60.00-66.00 <sup>1</sup>	0.20	0.20	22.00-28.00	2.00-4.00		1.00 <sup>3</sup>	5.00-7.50			2.50-5.00				
C86400	Manganese Bronze	56.00-62.00 <sup>1</sup>	0.50-1.50	0.50-1.50	34.00-42.00	0.40-2.00		1.00 <sup>3</sup>	0.50-1.50			0.10-1.50				
C86500	Manganese Bronze	55.00-60.00 <sup>1</sup>	0.40	1.00	36.00-42.00	0.40-2.00		1.00 <sup>3</sup>	0.50-1.50			0.10-1.50				
C86700	Manganese Bronze	55.00-60.00 <sup>1</sup>	0.50-1.50	1.50	30.00-38.00	1.00-3.00		1.00 <sup>3</sup>	1.00-3.00			0.10-3.50				
C89320	Bismuth Tin Bronze	87.00-91.00	0.09	5.00-7.00	1.00	0.20	0.30	1.00 <sup>3</sup>	0.005		4.00-6.00		0.08	0.35	0.005	
C89325	Bismuth Tin Bronze	84.00-88.00	0.10	9.00-11.00	1.00	0.15	0.10	1.00 <sup>3</sup>	0.005		2.70-3.70		0.08	0.50	0.005	
C89520	Bismuth Tin Bronze	85.00-87.00	0.09	5.00-6.00	4.00-6.00	0.20		1.00 <sup>3</sup>	0.005		1.60-2.20 <sup>4</sup>		0.08	0.25		0.80-1.10 <sup>4</sup>
C89831	Bismuth Tin Bronze	87.00-91.00	0.10	2.70-3.70	2.00-4.00	0.30	0.05	1.00 <sup>3</sup>	0.005		2.70-3.70		0.08	0.25	0.005	
C89833	Bismuth Tin Bronze	86.00-91.00	0.09	4.00-6.00	2.00-6.00	0.30	0.05	1.00 <sup>3</sup>	0.005		1.70-2.70		0.08	0.25	0.005	

<sup>1</sup>In determining Cu min., Cu may be calculated as Cu + Ni. <sup>2</sup>For continuous castings, P shall be 1.5%, max. <sup>3</sup>Ni value includes Co. <sup>4</sup>Bi:Se >= 2:1  
 Note: Unless otherwise noted, single values represent maximums.

## Cast Products Chemical Composition (continued)

Copper Alloy UNS No.	Product Description	Cu%	Pb%	Sn%	Zn%	Fe%	P%	Ni%	Al%	Co%	Bi%	Mn%	S%	Sb%	Si%	Se%
C89835	Bismuth Tin Bronze	85.00-89.00	0.09	6.00-7.50	2.00-4.00	0.20	0.10	1.00 <sup>3</sup>	0.005		1.70-2.70		0.08	0.35	0.005	
C89844	Tin Bronze	83.00-86.00	0.20	3.00-5.00	7.00-10.00	0.30	0.05	1.00 <sup>3</sup>	0.005		2.00-4.00		0.08	0.25	0.005	
C90300	Tin Bronze	86.00-89.00 <sup>1</sup>	0.30	7.50-9.00	3.00-5.00	0.20	0.05 <sup>2</sup>	1.00 <sup>3</sup>	0.005				0.05	0.20	0.005	
C90500	Tin Bronze	86.00-89.00 <sup>1</sup>	0.30	9.00-11.00	1.00-3.00	0.20	0.30 <sup>2</sup>	1.00 <sup>3</sup>	0.005				0.05	0.20	0.005	
C90700	Tin Bronze	88.00-90.00 <sup>1</sup>	0.50	10.00-12.00	0.50	0.15	0.30 <sup>2</sup>	0.50 <sup>3</sup>	0.005				0.05	0.20	0.005	
C90800	Tin Bronze	85.00-89.00 <sup>1</sup>	0.25	11.00-13.00	0.25	0.15	0.30 <sup>2</sup>	0.50 <sup>3</sup>	0.005				0.05	0.20	0.005	
C90810	High Tin Bronze	Rem. <sup>1</sup>	0.25	11.00-13.00	0.30	0.15	0.15-0.80 <sup>2</sup>	0.50 <sup>3</sup>	0.005				0.05	0.20	0.005	
C91000	Tin Bronze	84.00-86.00 <sup>1</sup>	0.20	14.00-16.00	1.50	0.10	0.05 <sup>2</sup>	0.80 <sup>3</sup>	0.005				0.05	0.20	0.005	
C91100	High Tin Bronze	82.00-85.00 <sup>1</sup>	0.25	15.00-17.00	0.25	0.25	1.00 <sup>2</sup>	0.50 <sup>3</sup>	0.005				0.05	0.20	0.005	
C91300	Tin Bronze	79.00-82.00 <sup>1</sup>	0.25	18.00-20.00	0.25	0.25	1.00 <sup>2</sup>	0.50 <sup>3</sup>	0.005				0.05	0.20	0.005	
C91600	High Tin Bronze	86.00-89.00 <sup>1</sup>	0.25	9.70-10.80	0.25	0.20	0.30 <sup>2</sup>	1.20-2.00 <sup>3</sup>	0.005				0.05	0.20	0.005	
C91700	High Tin Bronze	84.00-87.00 <sup>1</sup>	0.25	11.30-12.50	0.25	0.20	0.30 <sup>2</sup>	1.20-2.00 <sup>3</sup>	0.005				0.05	0.20	0.005	
C92200	Leaded Tin Bronze	86.00-90.00 <sup>1</sup>	1.00-2.00	5.50-6.50	3.00-5.00	0.25	0.05 <sup>2</sup>	1.00 <sup>3</sup>	0.005				0.05	0.25	0.005	
C92300	Leaded Tin Bronze	85.00-89.00 <sup>1</sup>	0.30-1.00	7.50-9.00	2.50-5.00	0.25	0.05 <sup>2</sup>	1.00 <sup>3</sup>	0.005				0.05	0.25	0.005	
C92500	Nickel-Phosphor Bronze	85.00-88.00 <sup>1</sup>	1.00-1.50	10.00-12.00	0.50	0.30	0.30 <sup>2</sup>	0.80-1.50 <sup>3</sup>	0.005				0.05	0.25	0.005	
C92700	Leaded Tin Bronze	86.00-89.00 <sup>1</sup>	1.00-2.50	9.00-11.00	0.70	0.20	0.25 <sup>2</sup>	1.00 <sup>3</sup>	0.005				0.05	0.25	0.005	
C92800	Leaded Tin Bronze	78.00-82.00 <sup>1</sup>	4.00-6.00	15.00-17.00	0.80	0.20	0.05 <sup>2</sup>	0.80 <sup>3</sup>	0.005				0.05	0.25	0.005	

<sup>1</sup>In determining Cu min., Cu may be calculated as Cu + Ni. <sup>2</sup>For continuous castings, P shall be 1.5% max. <sup>3</sup>Ni value includes Co.

Note: Single values represent maximums.

# Cast Products Chemical Composition (continued)

Copper Alloy UNS No.	Product Description	Cu%	Pb%	Sn%	Zn%	Fe%	P%	Ni%	Al%	Co%	Bi%	Mn%	S%	Sb%	Si%	Se%
C92900	Leaded Nickel-Tin Bronze	82.00-86.00 <sup>1</sup>	2.00-3.20	9.00-11.00	0.25	0.20	0.50 <sup>4</sup>	2.80-4.00 <sup>5</sup>	0.005				0.05	0.25	0.005	
C93200	Leaded Tin Bronze	81.00-85.00 <sup>1</sup>	6.00-8.00	6.30-7.50	1.00-4.00	0.20	0.15 <sup>4</sup>	1.00 <sup>5</sup>	0.005				0.08	0.35	0.005	
C93400	High-Leaded Tin Bronze	82.00-85.00 <sup>1</sup>	7.00-9.00	7.00-9.00	0.80	0.20	0.50 <sup>4</sup>	1.00 <sup>5</sup>	0.005				0.08	0.50	0.005	
C93500	High-Leaded Tin Bronze	83.00-86.00 <sup>1</sup>	8.00-10.00	4.30-6.00	2.00	0.20	0.05 <sup>4</sup>	1.00 <sup>5</sup>	0.005				0.08	0.30	0.005	
C93600	High-Leaded Tin Bronze	79.00-83.00	11.00-13.00	6.00-8.00	1.00	0.20	0.15 <sup>4</sup>	1.00 <sup>5</sup>	0.005				0.08	0.55	0.005	
C93700	High-Leaded Tin Bronze	78.00-82.00	8.00-11.00	9.00-11.00	0.80	0.70 <sup>3</sup>	0.10 <sup>4</sup>	0.50 <sup>5</sup>	0.005				0.08	0.50	0.005	
C93800	High-Leaded Tin Bronze	75.00-79.00	13.00-16.00	6.30-7.50	0.80	0.15	0.05 <sup>4</sup>	1.00 <sup>5</sup>	0.005				0.08	0.80	0.005	
C93900	High-Leaded Tin Bronze	76.50-79.50	14.00-18.00	5.00-7.00	1.50	0.40	1.50 <sup>4</sup>	0.80 <sup>5</sup>	0.005				0.08	0.50	0.005	
C94000	High-Leaded Tin Bronze	69.00-72.00	14.00-16.00	12.00-14.00	0.50	0.25	0.05 <sup>4</sup>	0.50-1.00 <sup>5</sup>	0.005				0.08 <sup>6</sup>	0.50	0.005	
C94100	High-Leaded Tin Bronze	72.00-79.00	18.00-22.00	4.50-6.50	1.00	0.25	0.50 <sup>4</sup>	1.00 <sup>5</sup>	0.005				0.08 <sup>6</sup>	0.80	0.005	
C94300	High-Leaded Tin Bronze	67.00-72.00	23.00-27.00	4.50-6.00	0.80	0.15	0.08 <sup>4</sup>	1.00 <sup>5</sup>	0.005				0.08	0.80	0.005	
C94700	Nickel-Tin Bronze	85.00-90.00	0.09 <sup>2</sup>	4.50-6.00	1.00-2.50	0.25	0.05	4.50-6.00 <sup>5</sup>	0.005			0.20	0.05	0.15	0.005	
C94700HT	Nickel-Tin Bronze	85.00-90.00	0.09 <sup>2</sup>	4.50-6.00	1.00-2.50	0.25	0.05	4.50-6.00 <sup>5</sup>	0.005			0.20	0.05	0.15	0.005	
C94800	Leaded Nickel-Tin Bronze	84.00-89.00	0.30-1.00	4.50-6.00	1.00-2.50	0.25	0.05	4.50-6.00 <sup>5</sup>	0.005			0.20	0.05	0.15	0.005	
C95200	Aluminum Bronze	86.00 min				2.50-4.00			8.50-9.50							
C95300	Aluminum Bronze	86.00 min				0.80-1.50			9.00-11.00							
C95300HT	Aluminum Bronze	86.00 min				0.80-1.50			9.00-11.00							

<sup>1</sup>In determining Cu min., Cu may be calculated as Cu + Ni. <sup>2</sup>The mechanical properties of C94700 (heat treated) may not be attainable if the Pb content exceeds 0.01%. <sup>3</sup>Fe shall be 0.35% max., when used for steel-backed bearings. <sup>4</sup>For continuous castings, P shall be 1.5% max. <sup>5</sup>Ni value includes Co. <sup>6</sup>For continuous castings S shall be 0.25% max. Note: Unless otherwise noted, single values represent maximums.

# Cast Products Chemical Composition (continued)

Copper Alloy UNS No.	Product Description	Cu%	Pb%	Sn%	Zn%	Fe%	P%	Ni%	Al%	Co%	Bi%	Mn%	S%	Sb%	Si%	Se%
C95400	Aluminum Bronze	83.00 min				3.00-5.00		1.50 <sup>3</sup>	10.00-11.50			0.50				
C95400HT	Aluminum Bronze	83.00 min				3.00-5.00		1.50 <sup>3</sup>	10.00-11.50			0.50				
C95410	Aluminum Bronze	83.00 min				3.00-5.00		1.50-2.50 <sup>3</sup>	10.00-11.50			0.50				
C95410HT	Aluminum Bronze	83.00 min				3.00-5.00		1.50-2.50 <sup>3</sup>	10.00-11.50			0.50				
C95500	Nickel Aluminum Bronze	78.00 min				3.00-5.00		3.00-5.50 <sup>3</sup>	10.00-11.50			3.50				
C95500HT	Nickel Aluminum Bronze	78.00 min				3.00-5.00		3.00-5.50 <sup>3</sup>	10.00-11.50			3.50				
AMS 4880-C95510	Nickel Aluminum Bronze	78.00 min		0.20	0.30	2.00-3.50		4.50-5.50 <sup>3</sup>	9.70-10.90			1.50				
C95520HT <sup>a</sup>	Nickel Aluminum Bronze	74.50 min	0.03	0.25	0.30	4.00-5.50		4.20-6.00 <sup>3</sup>	10.50-11.50	0.20		1.50			0.15	
C95600	Nickel Aluminum Bronze	88.00 min						0.25 <sup>3</sup>	6.00-8.00						1.80-3.20	
C95800	Nickel Aluminum Bronze	79.00 min	0.03			3.50-4.50 <sup>2</sup>		4.00-5.00 <sup>2</sup>	8.50-9.50			0.80-1.50			0.10	
C95900	Aluminum Bronze	Rem.				3.00-5.00		0.50 <sup>3</sup>	12.00-13.50			1.50				
CONCAST380	Aluminum Bronze	Rem.				4.50-6.50			14.00-16.00	2.50		3.25				
C96400 <sup>b</sup>	Copper-Nickel	Rem.	0.01			0.25-1.50	0.02	28.00-32.00 <sup>3</sup>				1.50	0.02		0.50	
C96900HT <sup>c</sup>	Nickel Tin Bronze	Rem.	0.02	7.50-8.50	0.50	0.50		14.50-15.50 <sup>3</sup>				0.05-0.30				
C97300	Nickel Silver Bronze	53.00-58.00	8.00-11.00	1.50-3.00	17.00-25.00	1.50	0.05	11.00-14.00 <sup>3</sup>	0.005			0.50	0.08	0.35	0.15	
C97600	Nickel Silver Bronze	63.00-67.00	3.00-5.00	3.50-4.50	3.00-9.00	1.50	0.05	19.00-21.50 <sup>3</sup>	0.005			1.00	0.08	0.25	0.15	
C97800	Nickel Silver Bronze	64.00-67.00	1.00-2.50	4.00-5.50	1.00-4.00	1.50	0.05	24.00-27.00 <sup>3</sup>	0.005			1.00	0.08	0.20	0.15	
C99500	Special Alloy	Rem.	0.09		0.50-2.00	3.00-5.00		3.50-5.50	0.50-2.00			0.50			0.50-2.00	

<sup>1</sup>In determining Cu min., Cu may be calculated as Cu + Ni. <sup>2</sup>Fe content shall not exceed Ni content. <sup>3</sup>Ni value includes Co.  
<sup>a</sup>Chemical requirements for other elements: Cr 0.05%, max. <sup>b</sup>Chemical requirements for other elements: C 0.15%, max and Nb 0.50-1.5%. <sup>c</sup>Chemical requirements for other elements: Mg 0.15%, max and Nb 0.10%, max.  
 Note: Unless otherwise noted, single values represent maximums.