

# Standard-stocked alloys



## Continuous-cast alloys

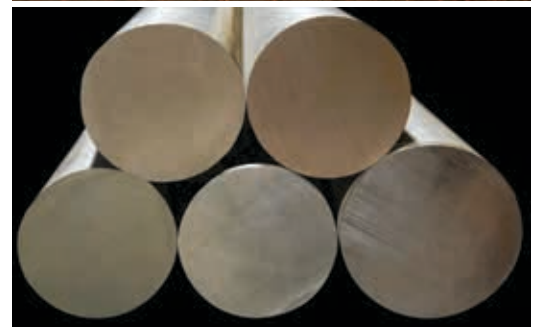
C86300	Manganese bronze
C89835	Bismuth tin bronze
C90300	Tin bronze
C93200	Leaded tin bronze
C95400	Aluminum bronze
C95500	Nickel-aluminum bronze
AMS 4880-C95510	Nickel-aluminum bronze
C95900	Aluminum bronze



## Extruded or cast and drawn alloys

C14500	Tellurium copper
C51000	Phosphor bronze
C54400	Phosphor bronze
AMS 4640-C63000	Nickel-aluminum bronze
AMS 4590-C63020	Nickel-aluminum bronze
AMS 4634-C64200	Aluminum bronze
C67300	Manganese bronze
C72900*	Copper nickel-tin bronze

\*AMS 4596, 4597, 4598



## Primary continuous-cast alloys

Copper alloy UNS no.	Material description	Chemical properties												Mech. properties		
		Cu%	Pb%	Sn%	Zn%	Fe%	P%	Ni% <sup>3</sup>	Al%	Mn%	S%	Sb%	Si%	Tensile ksi	Yield ksi	Elong. %
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	1.50	1.00	0.005		0.08	0.25	0.005	36	19	15
C86300*	Manganese bronze	60.00-66.00 <sup>1</sup>	0.20	0.20	22.00-28.00	2.00-4.00		1.00	5.00-7.50	2.50-5.00				110	62	14
C86500	Manganese bronze	55.00-60.00 <sup>1</sup>	0.40	1.00	36.00-42.00	0.40-2.00		1.00	0.50-1.50	0.10-1.50				70	25	25
C89835* <sup>A</sup>	Bismuth tin bronze	85.00-89.00	0.09	6.00-7.50	2.00-4.00	0.20	0.10	1.00	0.005		0.08	0.35	0.005	30	14	6
C90300*	Tin bronze	86.00-89.00 <sup>1</sup>	0.30	7.50-9.50	3.00-5.00	0.20	1.50	1.00	0.005		0.05	0.20	0.005	44	22	18
C90500	Tin bronze	86.00-89.00 <sup>1</sup>	0.30	9.00-11.00	1.00-3.00	0.20	1.50	1.00	0.005		0.05	0.20	0.005	44	25	10
C90700	Tin bronze	88.00-90.00 <sup>1</sup>	0.50	10.00-12.00	0.50	0.15	1.50	0.50	0.005		0.05	0.20	0.005	40	25	10
C91100	High tin Bronze	82.00-85.00 <sup>1</sup>	0.25	15.00-17.00	0.25	0.25	1.00	0.50	0.005		0.05	0.20	0.005	35	25	2
C92900	Leaded nickel tin bronze	82.00-86.00 <sup>1</sup>	2.00-3.20	9.00-11.00	0.25	0.20	1.50	2.80-4.00	0.005		0.05	0.25	0.005	45	25	8
C93200*	Leaded tin bronze	81.00-85.00 <sup>1</sup>	6.00-8.00	6.30-7.50	2.00-4.00	0.20	1.50	1.00	0.005		0.08	0.35	0.005	35	20	10
C93700	High-leaded Tin bronze	78.00-82.00	8.00-11.00	9.00-11.00	0.80	0.70	1.50	0.50	0.005		0.08	0.50	0.005	35	20	6
C93800	High-leaded Tin bronze	75.00-79.00	13.00-16.00	6.30-7.50	0.80	0.15	1.50	1.00	0.005		0.08	0.80	0.005	25	16	5
C94100	High-leaded Tin bronze	72.00-79.00	18.00-22.00	4.50-6.50	1.00	0.25	1.50	1.00	0.005		0.25 <sup>4</sup>	0.80	0.005	25	17	7
C94300	High-leaded Tin bronze	67.00-72.00	23.00-27.00	4.50-6.00	0.80	0.15	1.50	1.00	0.005		0.25 <sup>4</sup>	0.80	0.005	21	15	7
C95400*	Aluminum bronze	83.00 min				3.00-5.00		1.50	10.00-11.50	0.50				85	32	12
C95500*	Nickel-aluminum bronze	78.00 min				3.00-5.00		3.00-5.50	10.00-11.50	3.50				95	42	10
C95510* <sup>2</sup>	Nickel-aluminum bronze	78.00 min		0.20	0.30	2.00-3.50		4.50-5.50	9.70-10.90	1.50				95 <sup>5</sup>	56 <sup>5</sup>	9
C95900*	Aluminum bronze	Rem.				3.00-5.00		0.50	12.00-13.50	1.50						

\*standard-stocked alloy. <sup>1</sup>In determining Cu min, Cu may be calculated as Cu + Ni. <sup>2</sup>AMS 4880. <sup>3</sup>Ni value includes Co.

<sup>4</sup>For continuous castings, S shall be 0.25% max. <sup>5</sup>Castings 4.0+. <sup>A</sup>Chemical requirements for other elements: Bi% 1.70-2.70.

Note: Unless otherwise noted, single values in Chemical properties represent maximums.

## Primary extruded or cast and drawn alloys

Copper alloy UNS no.	Material description	Chemical properties													Mechanical properties <sup>1</sup>			
		Cu%	Pb%	Sn%	Zn%	Fe%	P%	Ni%	Al%	Mn%	Si%	As%	Co%	Mg%	Tensile ksi	Yield ksi	Elong. %	Std. temper
C14500* <sup>1</sup>	Tellurium copper	99.90 min <sup>4</sup>					0.004-0.012								38	30	8	H02
C31400	Leaded commercial bronze	87.50-90.50	1.30-2.50		Rem.	0.10		0.70							50	30	7	H02
C31600	Leaded commercial bronze <sup>2</sup>	87.50-90.50	1.30-2.50		Rem.	0.10	0.04-0.10	0.70-1.20							50	30	7	H02
C51000*	Phosphor bronze 5% A	Rem.	0.05	4.20-5.80	0.30	0.10	0.03-0.35								70		13	H04
C52100	Phosphor bronze 8% C	Rem.	0.05	7.00-9.00	0.20	0.10	0.03-0.35								85		12	H04
C53400	Phosphor bronze B-1	Rem.	0.80-1.20	3.50-5.80	0.30	0.10	0.03-0.35								60		10	H04
C54400*	Phosphor bronze B-2	Rem.	3.00-4.00	3.50-4.50	1.50-4.50	0.10	0.01-0.50								60		10	H04
C63000* <sup>3</sup>	Nickel-aluminum bronze	Rem. <sup>4</sup>		0.20	0.30	2.00-4.00		4.00-5.50	9.00-11.00	1.50	0.25				110	68	10	HR50
C63020* <sup>6,7</sup>	Nickel-aluminum bronze	Rem.	0.03	0.25	0.30	4.00-5.50		4.20-6.00 <sup>8</sup>	10.00-11.00	1.50	0.15		0.20		135	100	6	TQ50
C64200* <sup>9</sup>	Aluminum bronze	Rem. <sup>4</sup>	0.05	0.20	0.50	0.30		0.25 <sup>8</sup>	6.30-7.60	0.10	1.50-2.20	0.15			90	45	9	HR50
C65100	Low-silicon bronze B	Rem. <sup>4</sup>	0.05		1.50	0.80				0.70	0.80-2.00				55	20	11	H02
C67300*	Manganese bronze	58.00-63.00	0.40-3.00	0.30	Rem.	0.50		0.25 <sup>8</sup>	0.25	2.00-3.50	0.50-1.50				65	40	12	H02
C72900* <sup>10,11</sup>	Copper nickel-tin bronze	Rem.	0.02	7.50-8.50	0.50	0.50		14.50-15.50 <sup>8</sup>		0.30				0.15	Dependent on AMS. See spec sheets.			

\*standard-stocked alloy. <sup>1</sup>rod, ½" diameter and under (C14500, ¼" diameter and under). <sup>2</sup>Chemical requirements for other elements: Te% 0.40 0.70.

<sup>3</sup>(nickel-bearing). <sup>4</sup>AMS 4640. <sup>5</sup>Cu value includes Ag. <sup>6</sup>Pb content is greater than 0.02%. <sup>7</sup>Chemical requirements for other elements: Cr% 0.05, max.

<sup>8</sup>AMS 4590. <sup>9</sup>Ni value includes Co. <sup>10</sup>AMS 4634. <sup>11</sup>Available as AMS 4596, 4597, 4598. <sup>12</sup>Chemical requirements for other elements: Cb% 0.10, max.

Note: Unless otherwise noted, single values in Chemical properties represent maximums.

# More continuous-cast products

## Common continuous-cast products, product forms, and size ranges

Copper alloy UNS no.	Product description	Solid bar stock		Tubes		Rectangles	
		Avail.	Size range	Avail.	Size range	Avail.	Size range
C83600	Leaded red brass	X	1/2" to 13" O.D.	X	1" to 16" O.D.	X	Up to 20"
C83800	Leaded red brass	X	1/2" to 13" O.D.	X	1" to 16" O.D.	X	Up to 20"
C84200	Leaded semi-red brass	X	1/2" to 13" O.D.	X	1" to 16" O.D.	X	Up to 20"
C84400	Leaded semi-red brass	X	1/2" to 13" O.D.	X	1" to 16" O.D.	X	Up to 20"
C84800	Leaded semi-red brass	X	1/2" to 13" O.D.	X	1" to 16" O.D.	X	Up to 20"
C85700	Leaded yellow brass	X	1/2" to 13" O.D.	X	1-1/8" to 9" O.D.	X	Up to 15"
C86200	Manganese bronze	X	1/2" to 9" O.D.	X	1-1/8" to 9" O.D.	X	Up to 15"
C86300*	Manganese bronze	X	1/2" to 9" O.D.	X	1-1/8" to 9" O.D.	X	Up to 15"
C86400	Manganese bronze	X	1/2" to 9" O.D.	X	1-1/8" to 9" O.D.	X	Up to 15"
C86500	Manganese bronze	X	1/2" to 9" O.D.	X	1-1/8" to 9" O.D.	X	Up to 15"
C86700	Manganese bronze	X	1/2" to 9" O.D.	X	1-1/8" to 9" O.D.	X	Up to 15"
C87850	Silicon brass	X	Consult mill	X	Consult mill	X	Consult mill
C89320	Bismuth tin bronze	X	1/2" to 10" O.D.	X	1-1/8" to 9" O.D.	X	Up to 15"
C89325	Bismuth tin bronze	X	1/2" to 10" O.D.	X	1-1/8" to 9" O.D.	X	Up to 15"
C89520	Bismuth tin bronze	X	1/2" to 10" O.D.	X	1-1/8" to 9" O.D.	X	Up to 15"
C89831	Bismuth tin bronze	X	1/2" to 10" O.D.	X	1-1/8" to 9" O.D.	X	Up to 15"
C89833	Bismuth tin bronze	X	1/2" to 10" O.D.	X	1-1/8" to 9" O.D.	X	Up to 15"
C89835*	Bismuth tin bronze	X	1/2" to 10" O.D.	X	1-1/8" to 9" O.D.	X	Up to 15"
C89844	Bismuth tin bronze	X	1/2" to 10" O.D.	X	1-1/8" to 9" O.D.	X	Up to 15"
C90300*	Tin bronze	X	1/2" to 10" O.D.	X	1" to 16" O.D.	X	Up to 20"
C90500	Tin bronze	X	1/2" to 10" O.D.	X	1" to 16" O.D.	X	Up to 20"
C90700	Tin bronze	X	1/2" to 10" O.D.	X	1" to 16" O.D.	X	Up to 20"
C90800	Tin bronze	X	1" to 6" O.D.	X	1" to 6" O.D.	X	Up to 10"
C90810	High tin bronze	X	1" to 6" O.D.	X	1" to 6" O.D.	X	Up to 10"
C91000	Tin bronze	X	1" to 6" O.D.	X	1" to 6" O.D.	X	Up to 10"
C91100	High tin bronze	X	1" to 6" O.D.	X	1" to 6" O.D.	X	Up to 10"
C91300	Tin bronze	X	1" to 6" O.D.	X	1" to 6" O.D.	X	Up to 10"
C91600	High tin bronze	X	1" to 6" O.D.	X	1" to 6" O.D.	X	Up to 10"
C91700	High tin bronze	X	1" to 6" O.D.	X	1" to 6" O.D.	X	Up to 10"
C92200	Leaded tin bronze	X	1/2" to 13" O.D.	X	1" to 16" O.D.	X	Up to 20"
C92300	Leaded tin bronze	X	1/2" to 13" O.D.	X	1" to 16" O.D.	X	Up to 20"
C92500	Nickel-phosphor bronze	X	1/2" to 13" O.D.	X	1" to 16" O.D.	X	Up to 20"
C92700	Leaded tin bronze	X	1/2" to 13" O.D.	X	1" to 16" O.D.	X	Up to 20"
C92800	Leaded tin bronze	X	1/2" to 13" O.D.	X	1" to 16" O.D.	X	Up to 20"
C92900	Leaded nickel-tin bronze	X	1/2" to 13" O.D.	X	1" to 16" O.D.	X	Up to 20"
C93200*	Leaded tin bronze	X	1/2" to 13" O.D.	X	1" to 16" O.D.	X	Up to 20"
C93400	High-leaded tin bronze	X	1/2" to 13" O.D.	X	1" to 16" O.D.	X	Up to 20"

\*Standard-stocked alloy.

Please consult mill for minimum I.D., minimum thickness, and minimum wall thickness.

## Common continuous-cast products, product forms, and size ranges

Copper alloy UNS no.	Product description	Solid bar stock		Tubes		Rectangles	
		Avail.	Size range	Avail.	Size range	Avail.	Size range
C93500	High-leaded tin bronze	X	1/2" to 13" O.D.	X	1" to 16" O.D.	X	Up to 20"
C93600	High-leaded tin bronze	X	1/2" to 13" O.D.	X	1" to 16" O.D.	X	Up to 20"
C93700	High-leaded tin bronze	X	1/2" to 10" O.D.	X	1" to 16" O.D.	X	Up to 20"
C93800	High-leaded tin bronze	X	1/2" to 10" O.D.	X	1" to 16" O.D.	X	Up to 20"
C93900	High-leaded tin bronze	X	1/2" to 10" O.D.	X	1" to 16" O.D.	X	Up to 20"
C94000	High-leaded tin bronze	X	1/2" to 10" O.D.	X	1" to 16" O.D.	X	Up to 10"
C94100	High-leaded tin bronze	X	1/2" to 10" O.D.	X	1" to 16" O.D.	X	Up to 10"
C94300	High-leaded tin bronze	X	1/2" to 10" O.D.	X	1" to 16" O.D.	X	Up to 10"
C94700	Nickel-tin bronze	X	1/2" to 10" O.D.	X	1" to 16" O.D.	X	Up to 20"
C94700HT	Nickel-tin bronze	X	1/2" to 10" O.D.	X	1" to 16" O.D.	X	Up to 20"
C94800	Leaded nickel-tin bronze	X	1/2" to 10" O.D.	X	1" to 16" O.D.	X	Up to 20"
C95200	Aluminum bronze	X	1/2" to 9" O.D.	X	1-1/8" to 9" O.D.	X	Up to 15"
C95300	Aluminum bronze	X	1/2" to 9" O.D.	X	1-1/8" to 9" O.D.	X	Up to 15"
C95300HT	Aluminum bronze	X	1/2" to 9" O.D.	X	1-1/8" to 9" O.D.	X	Up to 15"
C95400*	Aluminum bronze	X	1/2" to 9" O.D.	X	1-1/8" to 9" O.D.	X	Up to 15"
C95400HT	Aluminum bronze	X	1/2" to 9" O.D.	X	1-1/8" to 9" O.D.	X	Up to 15"
C95410	Aluminum bronze	X	1/2" to 9" O.D.	X	1-1/8" to 9" O.D.	X	Up to 15"
C95410HT	Aluminum bronze	X	1/2" to 9" O.D.	X	1-1/8" to 9" O.D.	X	Up to 15"
C95500*	Nickel-aluminum bronze	X	1/2" to 9" O.D.	X	1-1/8" to 9" O.D.	X	Up to 15"
C95500HT	Nickel-aluminum bronze	X	1/2" to 9" O.D.	X	1-1/8" to 9" O.D.	X	Up to 15"
C95510*	Nickel-aluminum bronze	X	1/2" to 9" O.D.	X	1-1/8" to 13" O.D.	X	Up to 15"
C95520HT	Nickel-aluminum bronze	X	1/2" to 9" O.D.	X	1-1/8" to 9" O.D.	X	Up to 15"
C95600	Nickel-aluminum bronze	X	1/2" to 9" O.D.	X	1-1/8" to 9" O.D.	X	Up to 15"
C95800	Nickel-aluminum bronze	X	1/2" to 9" O.D.	X	1-1/8" to 9" O.D.	X	Up to 15"
C95900*	Aluminum bronze	X	1" to 5" O.D.		Consult mill	X	Up to 7"
CONCAST380	Aluminum bronze	X	1" to 5" O.D.			X	Up to 10"
C96400	Copper-nickel	X	1/2" to 9" O.D.	X	1-1/8" to 9" O.D.	X	Up to 15"
C96900HT	Copper-nickel	X	1/2" to 9" O.D.	X	1-1/8" to 9" O.D.	X	Up to 15"
C97300	Nickel silver bronze	X	3/4" to 9" O.D.	X	1-1/8" to 9" O.D.	X	Up to 14"
C97600	Nickel silver bronze	X	3/4" to 9" O.D.	X	1-1/8" to 9" O.D.	X	Up to 14"
C97800	Nickel silver bronze	X	3/4" to 9" O.D.	X	1-1/8" to 9" O.D.	X	Up to 14"
C99500	Special alloy	X	1/2" to 9" O.D.	X	1-1/8" to 9" O.D.	X	Up to 14"

\*Standard-stocked alloy.

Please consult mill for minimum I.D., minimum thickness, and minimum wall thickness.

All alloys also available as near-net shape, solid hex bar, and hex tube except Concast380 which is not available as hex tube.

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