Selecting Self-lubricating Bronze Bearing Materials

EN Casting Copper Alloy

Type	Symbol	Number
Silicon Brass	CuZn16Si4-C	CC761S
Special Brass	CuZn33Pb2Si-C	CC751S
Special Brass	CuZn35Pb2Al-C	CC752S
Special Brass	CuZn37Pb2Ni1AlFe-C	CC753S
Special Brass	CuZn25Al5Mn4Fe3-C	CC762S
Special Brass	CuZn32Al2MnFe1-C	CC763S
Special Brass	CuZn34Mn3Al2Fe1-C	CC764S
Special Brass	CuZn35Mn2Al1Fe1-C	CC765S
Tin Bronze	CuSn10-C	CC480K
Tin Bronze	CuSn11P-C	CC481K
Tin Bronze	CuSn12-C	CC483K
Tin Bronze	CuSn12Ni2-C	CC484K
	CuSn3Zn8Pb5-C	CC490K
	CuSn5Zn5Pb5-C	CC491K
	CuSn7Zn2Pb3-C	CC492K
	CuSn7Zn4Pb7-C	CC493K
	CuSn5Pb9-C	CC494K
	CuSn10Pb10-C	CC495K
	CuSn7Pb15-C	CC496K
	CuSn5Pb20-C	CC497K
	CuSn6Zn4Pb2-C	CC498K
	CuSn5Zn5Pb2-C	CC499K
	CuAl10Fe2-C	CC331G
	CuAl10Ni3Fe2-C	CC332G
	CuAl10Fe5Ni5-C	CC333G

EN
Casting
Copper

CuZn16Si4-C

Chemical Composition mass/%									
Cu	Sn	Al	Fe	Mn	Ni	Pb	Si	P	Zn
78.0-83.0	0.3	0.1	0.6	0.2	1	0.8	3.0-5.0	0.03	Rem

Mechanical properties			
Tensile strength Mpa(Min)	Yield strength MPa(Min)	Elongation %	Brinell hardness(HB)
530	370	5	150

EN
Casting
Copper

CuZn33Pb2Si-C

Chemical Composition mass/%									
Cu	Sn	Al	Fe	Mn	Ni	Pb	Si	P	Zn
63.5-66.0	0.8	0.1	0.25-0.5	0.15	0.8	0.8-2.0	0.65-1.1	-	Rem

Mechanical properties			
Tensile strength Mpa(Min)	Yield strength MPa(Min)	Elongation %	Brinell hardness(HB)
400	280	5	110

EN
Casting
Copper

CuZn35Pb2Al-C

Chemical Composition mass/%									
Cu	Sn	Al	Fe	Mn	Ni	Pb	Si	P	Zn
61.5-64.5	0.4	0.3-0.7	0.35	0.15	0.25	1.5-2.5	0.02	-	Rem

Mechanical properties			
Tensile strength Mpa(Min)	Yield strength MPa(Min)	Elongation %	Brinell hardness(HB)
280	120	10	70

EN
Casting
Copper

CuZn37Pb2Ni1AlFe-C

Chemical Composition mass/%									
Cu	Sn	Al	Fe	Mn	Ni	Pb	Si	P	Zn
58.0-61.0	0.8	0.4-0.8	0.5-0.8	0.2	0.5-1.2	1.8-2.5	0.05	-	Rem

Mechanical properties			
Tensile strength Mpa(Min)	Yield strength MPa(Min)	Elongation %	Brinell hardness(HB)
300	150	15	90

EN
Casting
Copper

CuZn25Al5Mn4Fe3-C

Chemical Composition mass/%									
Cu	Sn	Al	Fe	Mn	Ni	Pb	Si	P	Zn
60.0-67.0	0.2	3.0-7.0	1.5-4.0	2.5-5.0	3	0.2	0.1	0.03	Rem

Mechanical properties			
Tensile strength Mpa(Min)	Yield strength MPa(Min)	Elongation %	Brinell hardness(HB)
750	480	5	190

EN
Casting
Copper

CuZn32Al2MnFe1-C

Chemical Composition mass/%									
Cu	Sn	Al	Fe	Mn	Ni	Pb	Si	P	Zn
59.0-67.0	1	1.0-2.5	0.5-2.0	1.0-3.5	2.5	1.5	1	-	Rem

Mechanical properties			
Tensile strength Mpa(Min)	Yield strength MPa(Min)	Elongation %	Brinell hardness(HB)
430	150	10	100

EN
Casting
Copper

CuZn34Mn3Al2Fe1-C

Chemical Composition mass/%									
Cu	Sn	Al	Fe	Mn	Ni	Pb	Si	P	Zn
55.0-65.0	0.3	1.0-3.0	0.5-2.5	1.0-4.0	3	0.3	0.1	0.03	Rem

Mechanical properties			
Tensile strength Mpa(Min)	Yield strength MPa(Min)	Elongation %	Brinell hardness(HB)
620	260	14	150

EN
Casting
Copper

CuZn35Mn2Al1Fe1-C

Chemical Composition mass/%									
Cu	Sn	Al	Fe	Mn	Ni	Pb	Si	P	Zn
57.0-65.0	1	0.5-2.5	0.5-2.0	0.5-3.0	6	0.5	0.1	0.03	Rem

Mechanical properties			
Tensile strength Mpa(Min)	Yield strength MPa(Min)	Elongation %	Brinell hardness(HB)
500	200	18	120

EN
Casting
Copper

CuSn10-C

Chemical Composition mass/%									
Cu	Sn	Al	Fe	Mn	Ni	Pb	Si	P	Zn
88.0-90.0	9.0-11.0	0.01	0.2	0.1	2	1	0.02	0.2	0.5

Mechanical properties			
Tensile strength Mpa(Min)	Yield strength MPa(Min)	Elongation %	Brinell hardness(HB)
280	170	10	80

EN
Casting
Copper

CuSn11P-C

Chemical Composition mass/%									
Cu	Sn	Al	Fe	Mn	Ni	Pb	Si	P	Zn
87.0-89.5	10.0-11.5	0.01	0.1	0.05	0.1	0.25	0.01	0.5-1.0	0.05

Mechanical properties			
Tensile strength Mpa(Min)	Yield strength MPa(Min)	Elongation %	Brinell hardness(HB)
330	170	4	85

EN
Casting
Copper

CuSn12-C

Chemical Composition mass/%									
Cu	Sn	Al	Fe	Mn	Ni	Pb	Si	P	Zn
85.0-88.5	11.0-13.0	0.01	0.2	0.2	2	0.7	0.01	0.6	0.5

Mechanical properties			
Tensile strength Mpa(Min)	Yield strength MPa(Min)	Elongation %	Brinell hardness(HB)
280	150	5	90

EN
Casting
Copper

CuSn12Ni2-C

Chemical Composition mass/%									
Cu	Sn	Al	Fe	Mn	Ni	Pb	Si	P	Zn
84.5-87..5	11.0-13.0	0.01	0.2	0.2	1.5-2.5	0.3	0.01	0.05-0.4	0.4

Mechanical properties			
Tensile strength Mpa(Min)	Yield strength MPa(Min)	Elongation %	Brinell hardness(HB)
300	180	10	85

EN
Casting
Copper

CuSn3Zn8Pb5-C

Chemical Composition mass/%									
Cu	Sn	Al	Fe	Mn	Ni	Pb	Si	P	Zn
81.0-86.0	2.0-3.5	0.01	0.5	-	2	3.0-6.0	0.01	0.05	7.0-9.5

Mechanical properties			
Tensile strength Mpa(Min)	Yield strength MPa(Min)	Elongation %	Brinell hardness(HB)
220	100	12	70

EN
Casting
Copper

CuSn5Zn5Pb5-C

Chemical Composition mass/%									
Cu	Sn	Al	Fe	Mn	Ni	Pb	Si	P	Zn
83.0-87.0	4.0-6.0	0.01	0.3	-	2	4.0-6.0	0.01	0.1	4.0-6.0

Mechanical properties			
Tensile strength Mpa(Min)	Yield strength MPa(Min)	Elongation %	Brinell hardness(HB)
250	110	13	65

EN
Casting
Copper

CuSn7Zn2Pb3-C

Chemical Composition mass/%									
Cu	Sn	Al	Fe	Mn	Ni	Pb	Si	P	Zn
85.0-89.0	6.0-8.0	0.01	0.2	-	2	2.5-3.5	0.01	0.1	1.5-3.0

Mechanical properties			
Tensile strength Mpa(Min)	Yield strength MPa(Min)	Elongation %	Brinell hardness(HB)
270	130	12	70

EN
Casting
Copper

CuSn7Zn4Pb7-C

Chemical Composition mass/%									
Cu	Sn	Al	Fe	Mn	Ni	Pb	Si	P	Zn
81.0-85.0	6.0-8.0	0.01	0.2	-	2	5.0-8.0	0.01	0.1	2.0-5.0

Mechanical properties			
Tensile strength Mpa(Min)	Yield strength MPa(Min)	Elongation %	Brinell hardness(HB)
260	120	12	70

EN
Casting
Copper

CuSn5Pb9-C

Chemical Composition mass/%									
Cu	Sn	Al	Fe	Mn	Ni	Pb	Si	P	Zn
80.0-87.0	4.0-6.0	0.01	0.25	0.2	2	8.0-10.0	0.01	0.1	2

Mechanical properties			
Tensile strength Mpa(Min)	Yield strength MPa(Min)	Elongation %	Brinell hardness(HB)
200	100	9	60

EN
Casting
Copper

CuSn10Pb10-C

Chemical Composition mass/%									
Cu	Sn	Al	Fe	Mn	Ni	Pb	Si	P	Zn
78.0-82.0	9.0-11.0	0.01	0.25	0.2	2	8.0-11.0	0.01	0.1	2

Mechanical properties			
Tensile strength Mpa(Min)	Yield strength MPa(Min)	Elongation %	Brinell hardness(HB)
220	110	8	70

EN
Casting
Copper

CuSn7Pb15-C

Chemical Composition mass/%									
Cu	Sn	Al	Fe	Mn	Ni	Pb	Si	P	Zn
74.0-80.0	6.0-8.0	0.01	0.25	0.2	0.5-2.0	13.0-17.0	0.01	0.1	2

Mechanical properties			
Tensile strength Mpa(Min)	Yield strength MPa(Min)	Elongation %	Brinell hardness(HB)
200	90	8	65

EN
Casting
Copper

CuSn5Pb20-C

Chemical Composition mass/%									
Cu	Sn	Al	Fe	Mn	Ni	Pb	Si	P	Zn
70.0-78.0	4.0-6.0	-	0.25	0.2	0.5-2.5	18.0-23.0	0.01	0.1	2

Mechanical properties			
Tensile strength Mpa(Min)	Yield strength MPa(Min)	Elongation %	Brinell hardness(HB)
180	90	7	50

EN
Casting
Copper

CuSn6Zn4Pb2-C

Chemical Composition mass/%									
Cu	Sn	Al	Fe	Mn	Ni	Pb	Si	P	Zn
86.0-90.0	5.5-6.5	0.01	0.25	-	1	1.0-2.0	0.01	0.05	3.0-5.0

Mechanical properties			
Tensile strength Mpa(Min)	Yield strength MPa(Min)	Elongation %	Brinell hardness(HB)
240	110	12	70

EN
Casting
Copper

CuSn5Zn5Pb2-C

Chemical Composition mass/%									
Cu	Sn	Al	Fe	Mn	Ni	Pb	Si	P	Zn
-	4.0-6.0	-	-	-	0.6	3	-	-	4.0-6.0

Mechanical properties			
Tensile strength Mpa(Min)	Yield strength MPa(Min)	Elongation %	Brinell hardness(HB)
250	110	13	65

EN
Casting
Copper

CuAl10Fe2-C

Chemical Composition mass/%									
Cu	Sn	Al	Fe	Mn	Ni	Pb	Si	P	Zn
83.0-89.5	0.2	8.5-10.5	1.5-3.5	1	1.5	0.1	0.2	-	0.5

Mechanical properties			
Tensile strength Mpa(Min)	Yield strength MPa(Min)	Elongation %	Brinell hardness(HB)
550	200	15	130

EN
Casting
Copper

CuAl10Ni3Fe2-C

Chemical Composition mass/%									
Cu	Sn	Al	Fe	Mn	Ni	Pb	Si	P	Zn
80.0-86.0	0.2	8.5-10.5	1.0-3.0	2	1.5-4.0	0.1	0.2	-	0.5

Mechanical properties			
Tensile strength Mpa(Min)	Yield strength MPa(Min)	Elongation %	Brinell hardness(HB)
550	220	20	120

EN
Casting
Copper

CuAl10Fe5Ni5-C

Chemical Composition mass/%									
Cu	Sn	Al	Fe	Mn	Ni	Pb	Si	P	Zn
76.0-83.0	0.1	8.5-10.5	4.0-5.5	3	4.0-6.0	0.03	0.1	-	0.5

Mechanical properties			
Tensile strength Mpa(Min)	Yield strength MPa(Min)	Elongation %	Brinell hardness(HB)
650	280	13	150