

ALLOY GUIDE - Bar & Busbar

NOTE:Following chart only serves as a general guideline. For exact specifications, please contact us.

Alloy Name	Oxygen-free copper for electron devices		OFC	TC	Copper-tellurium alloy	Copper-zirconium alloy			Copper-chromium-zirconium	Copper-chromium alloy	High strength high conductivity high heat-resistant alloy	Dezincification corrosion resistance free-cutting alloy	Dezincification corrosion resistance alloy for casting	Wear resistance alloy UH13	Naval brass	High strength brass	Free-cutting Brass	Brass for forging	Lead-free brass ECOBRASS			
	EOFC	OFCE				C145	15ZC	10ZC											ZC	CZ1	CRC	C4641
FORM	○	○	○□	○□	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	Octagon
JIS No.	C1011		C1020	C1100																		CAC804
CDA No.		C10100	C10200	C11000	C14500	C15000	C15100	C15150	C18150	C18200	C18625											C87850
PROCESS	EXTRUSION/DRAWING		EXTRUSION/DRAWING/BUSBAR		EXTRUSION /DRAWING	EXTRUSION /DRAWING	EXTRUSION /DRAWING	EXTRUSION /DRAWING	EXTRUSION /DRAWING	EXTRUSION /DRAWING	DRAWING	EXTRUSION /DRAWING	EXTRUSION /DRAWING	EXTRUSION /DRAWING	EXTRUSION /DRAWING	EXTRUSION /DRAWING	EXTRUSION /DRAWING	EXTRUSION /DRAWING	EXTRUSION /DRAWING	EXTRUSION /DRAWING	EXTRUSION /DRAWING	CASTING
Nominal Composition [wt%]	Cu:99.99Min.		Cu:99.96Min.	Cu:99.90Min.	Cu:99.5 Te:0.5 P:0.008	Cu:99.85 Zr:0.15	Cu:99.9 Zr:0.1	Cu:99.98 Zr:0.02	Cu:Rem. Cr:0.8 Zr:0.1	Cu:Rem. Cr:1.0	Cu:99.5 Co:0.27 P:0.08 Sn:0.04 Ni:0.04	Cu:63.0 Pb:1.8 Fe:0.1 Sn:0.8 Ni:0.4 Zn:Rem.	Cu:62.0 Pb:1.7 Fe:0.1 Sn:0.8 Ni:0.4 Zn:Rem.	Cu:62.0 Pb:0.2 Al:3.0 Mn:3.0 Si:1.0 Zn:Rem.	Cu:61.0 Pb:0.1 Fe:0.05 Sn:0.8 Zn:Rem.	Cu:58.5 Pb:0.3 Fe:0.6 Al:0.6 Mn:1.0 Zn:Rem.	Cu:59.0 Pb:3.0 Fe:0.1 Fe+Sn:0.3 Zn:Rem.	Cu:59.0 Pb:2.0 Fe:0.1 Fe+Sn:0.3 Zn:Rem.	Cu:75.5 Si:3.0 Sn:0.02 P:0.08 Pb:0.02 Zn:Rem.	Cu:76.0 Si:3.0 Sn:0.5 P:0.08 Pb:0.02 Zn:Rem.	Cu:76.0 Si:3.0 Sn:0.02 P:0.08 Pb:0.02 Zn:Rem.	

NOTE:The physical properties are average.

Specific Gravity	8.94	8.94	8.94	8.94	8.9	8.9	8.9	8.9	8.9	8.9	8.9	8.4	8.4	7.9	8.41	8.3	8.5	8.41	8.3	8.3	8.3
Coeff. of Thermal Expansion [$\times 10^{-6}/k(20\sim 300^{\circ}C)$]	17.7	17.7	17.7	17.8	17.7	17.7	17.7	17.3	17.8	17.7	17.7	21	21	20	21.2	20	20.5	20.8	20	20	20
Thermal Conductivity [W/(m·K)](20°C)	391	391	391	355	340	360	373	330	330	330	330	117	117	100	117	95	117	117	45	45	45
Electrical Resistivity [$\mu\Omega\cdot m$]	0.0171	0.0171	0.0171	0.019	0.019	0.018	0.018	0.022	0.022	0.022	0.022	0.07	0.07	0.07	0.07	0.07	0.07	0.06	0.22	0.22	0.22
Electrical Conductivity [%IACS]	101	101	101	93	90	95	97	80	80	80	80	26	26	23	26	26	26	27	8	8	8
Modulus of Elasticity [kN/mm ²]	118	118	118	117	121	121	121	118	117	118	118	103	103	103	103	100	96	103	105	105	105

Tensile Strength [N/mm²] (MPa=N/mm², 1N/mm²=0.1451ksi)

BE F	195Min.		195Min.											315Min.	550Min.	345Min.	460Min. 33≤≤50 400Min. 50<	335Min.	315Min.	450Min.		
BD F														350Min. 12≤≤30 315Min. 30<≤50		650Min. 13≤≤18 685Min. 18<≤50		375Min.	490Min.	335Min.	315Min.	450Min.
BD 1/2H	245Min. 6≤≤25 225Min. 25<≤50 215Min. 50<≤75	260~345 ≤10 230~345 10< 215Min. 50<≤75	245Min. 6≤≤25 225Min. 25<≤50 215Min. 50<≤75																			
BD H	275Min. 6≤≤25 245Min. 25<≤75	310~410 ≤10 275~380 10<≤25 240~345 25<≤50 230~330 50<≤75 205~330 75<	275Min. 6≤≤25 245Min. 25<≤50 225Min. 50<≤75 215Min. 75<≤110																			
BD TMT, SST														350Min. (TMT)								300Min. (SST)
BB 1/4H			215~275 2.0≤≤30																			
BB 1/2H			245~315 2.0≤≤20																			
BB H			275Min. 2.0≤≤10																			

* Please contact us

Elongation [%min]

BE F			25Min.											5Min.		20Min.	20Min.		15Min.		5Min.	15Min.
BD F														5Min.		20Min.	15Min.		15Min.		5Min.	15Min.

Vickers Hardness [HV]

BE F														75Min.					80Min.		110Min.	
BD F														75Min.								

※ BE:Extrusion bar/BD:Drawing bar/BB:Busbar