

ALLOY GUIDE - Bar



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

MMC Alloy Name	Oxygen-free copper for electron devices		OFC	TC	Copper- tellurium alloy	Copper-zirconium alloy			Copper- chromium- zirconium alloy	Copper-chromium alloy	High strength high conductivity high heat- resistant alloy	Wear resistant alloy	Lead-free brass			
	EOFC	OFCE			C145	15ZC	10ZC	ZC	CZ1	CRC	HRSC	UH13	ECOBRESS			GloBrass
FORM	○	○	○□	○□	○	○	○	○	○	○	○	○	○	○	Octagon	○
JIS No.	C1011		C1020	C1100									C6932	C6931	CAC804	
CDA No.		C10100	C10200	C11000	C14500	C15000	C15100	C15150	C18150	C18200	C18625		C69300	C69310	C87850	C68370
PROCESS	EXTRUSION / DRAWING		EXTRUSION / DRAWING		EXTRUSION / DRAWING	EXTRUSION / DRAWING	EXTRUSION / DRAWING	EXTRUSION / DRAWING	EXTRUSION / DRAWING	EXTRUSION / DRAWING	DRAWING	EXTRUSION / DRAWING	EXTRUSION / DRAWING	EXTRUSION / DRAWING	CASTING	EXTRUSION / DRAWING
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:62.0 Pb:0.2 Al:3.0 Mn:3.0 Si:1.0 Zn:Rem.	Cu:75.5 Si:3.0 Sn:0.02 P:0.08 Pb<0.09 Zn:Rem.	Cu:76.0 Si:3.0 Sn:0.5 P:0.08 Pb<0.09 Zn:Rem.	Cu:76.0 Si:3.0 Sn:0.02 P:0.08 Pb<0.09 Zn:Rem.	Cu:62.5 Si:1.0 Sn:0.01 P:0.07 Pb<0.1 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	7.9	8.3	8.3	8.3	8.3
Coeff.of Thermal Expansion [×10 ⁻⁶ /K](20~300°C)	17.7	17.7	17.7	17.8	17.7	17.7	17.7	17.3	17.8	17.7	17.7	20	20	20	20	19
Thermal Conductivity [W/(m·K)](20°C)	391	391	391	355	340	360	373	330	330	330	330	100	35	35	35	73
Electrical Resistivity [μΩ·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	0.22	0.22	0.22	0.11
Electrical Conductivity [%ACS]	101	101	101	93	90	95	97	80	80	80	80	23	8	8	8	16
Modulus of Elasticity [kN/mm ²]	118	118	118	117	121	121	121	118	117	118	118	103	105	105	105	100

Tensile Strength [N/mm²] (1 N/mm² = 1 MPa = 0.14504 ksi) Upper: Tensile strength, Lower:Diameter (mm)

BE F	195 Min.		195 Min.	* Please contact us		550 Min.	450 Min.		420 Min.
BD F						650 Min. 13 ≧ ≦ 18 685 Min. 18 < ≦ 50	450 Min.		420 Min.
BD 1/2H	245 Min. 6 ≧ ≦ 25	260 ~ 345 ≧ 10	245 Min. 6 ≧ ≦ 25						
	225 Min. 25 < ≦ 50	230 ~ 345 10 <	225 Min. 25 < ≦ 50						
	215 Min. 50 < ≦ 75		215 Min. 50 < ≦ 75						
			205 Min. 75 < ≦ 110						
BD H	275 Min. 6 ≧ ≦ 25	310 ~ 410 ≧ 10	275 Min. 6 ≧ ≦ 25						
	245 Min. 25 < ≦ 75	275 ~ 380 10 < ≧ 25	245 Min. 25 < ≧ 50						
		240 ~ 345	225 Min.						
		25 < ≧ 50	50 < ≧ 75						
		230 ~ 330	215 Min.						
		50 < ≧ 75	75 < ≧ 110						
		205 ~ 330							
		75 <							
BD TMT, SST						350 Min. (TMT) 8 ≧ ≦ 25			300 Min. (SST)

Elongation [%min]

BE F			25 Min.	* Please contact us.					
BD F							110 Min.		100 Min.

※ BE:Extrusion bar/BD : Drawing bar TMT:Thermomechanical treatment/SST:Solid solution treatment