



**BRONMETAL**

Copper Cu

Product format: Flat bar

Technical characteristics: Flat copper bar /  
rectangular rods for electrical application.

## ALLOYS

Designation of material		Composition of % (mass fraction)								
Symbolic	Numerical	Element	Cu	Ag	Bi	O	P	Pb	Other elements (see note)	
									Total	Excluded
Cu-ETP	CW004A	min.	99.90 <sup>a</sup>	-	-	-	-	-	-	Ag, O
		max.	-	-	0,0005	0.040b	-	0,005	0,03	
Cu-FRHC	CW005A	min.	99.90 <sup>a</sup>	-	-	-	-	-	-	Ag, O
		max.	-	-	-	0.040b	-	-	0,06 <sup>d</sup>	
Cu-OF	CW008A	min.	99.95 <sup>a</sup>	-	-	-	-	-	-	Ag
		max.	-	-	0,0005	-c	-	0,005	0,03	
CuAg0,04	CW011A	min.	Rest	0,03	-	-	-	-	-	Ag, O
		max.	-	0,05	0,0005	0,040	-	-	0,03	
CuAg0,07	CW012A	min.	Rest	0,06	-	-	-	-	-	Ag, O
		max.	-	0,08	0,0005	0,040	-	-	0,03	
CuAg0,10	CW013A	min.	Rest	0,08	-	-	-	-	-	Ag, O
		max.	-	0,12	0,0005	0,040	-	-	0,03	
CuAg0,04P	CW014A	min.	Rest	0,03	-	-	0,001	-	-	Ag, P
		max.	-	0,05	0,0005	-c	0,007	-	0,03	
CuAg0,07P	CW015A	min.	Rest	0,06	-	-	0,001	-	-	Ag, P
		max.	-	0,08	0,0005	-c	0,007	-	0,03	
CuAg0,10P	CW016A	min.	Rest	0,08	-	-	0,001	-	-	Ag, P
		max.	-	0,12	0,0005	-c	0,007	-	0,03	
CuAg0,04(OF)	CW017A	min.	Rest	0,03	-	-	-	-	-	Ag, O
		max.	-	0,05	0,0005	-c	-	-	0,0065	
CuAg0,07(OF)	CW018A	min.	Rest	0,06	-	-	-	-	-	Ag, O
		max.	-	0,08	0,0005	-c	-	-	0,0065	
CuAg0,10(OF)	CW019A	min.	Rest	0,08	-	-	-	-	-	Ag, O
		max.	-	0,12	0,0005	-c	-	-	0,0065	
Cu-PHC	CW020A	min.	99.95 <sup>a</sup>	-	-	-	0,001	-	-	Ag, P
		max.	-	-	0,0005	-c	0,006	0,005	0,03	
Cu-HCP	CW021A	min.	99.95 <sup>a</sup>	-	-	-	0,002	-	-	Ag, P
		max.	-	-	0,0005	-c	0,007	0,005	0,03	

NOTE- In all other elements (other than copper) is defined as the sum of Ag, As, Bi, Cd, Co, Cr, Fe, Mn, Ni, O, P, Pb, S, Sb, Se, Si, Sn, Te, And Zn, with the exclusion of any item whose value this indicated individually.

a To including silver, to a maximum of 0.015%.

b Is permissible oxygen content up to 0.060%, subject to agreement between customer and supplier.

c The oxygen content should be such that the material meets the requirements of embrittlement by heating in hydrogen atmosphere, the Standard in 1976.

d It is allowed a total impurities content higher, under agreement between customer and supplier.

## ALLOYS. Cu-OFE and Cu-PHCE EN 13601

Designation of material		Composition of % (mass fraction)																		
Symbolic	Numerical	Element	Cu	Ag	As	Bi	Cd	Fe	Mn	Ni	O	P	Pb	S	Sb	Se	Sn	Te	Zn	
Cu-OFE	CW009A	min.	99,99	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		max.	-	0,002 5	0,000 5	0,000 20	0,000 1	0,0001 0	0,000 5	0,001 0	_a	0,000 3	0,000 5	0,001 5	0,000 4	0,000 20	0,000 2	0,000 20	0,000 20	0,000 1
Cu-PHCE	CW022A	min.	99,99	-	-	-	-	-	-	-	-	0,001	-	-	-	-	-	-	-	-
		max.	-	0,002 5	0,000 5	0,000 20	0,000 1	0,001 0	0,000 5	0,001 0	_a	0,006	0,000 5	0,001 5	0,000 4	0,000 20	0,000 2	0,000 20	0,000 20	0,000 1

a The oxygen content shall be such that the material conforms to the hydrogen embrittlement requirements of EN 1976.