CuOF

CuOF | C10200

Cu-OF is an oxygen-free, high-conductivity copper containing a minimum of 99.99% Cu. It combines the advantages of both electrolytic copper (ETP) and phosphorus-deoxidized copper. Its high purity and absence of deoxidants provide electrical conductivity of 100% IACS while eliminating susceptibility to hydrogen embrittlement. Cu-OF exhibits very good formability, soldering, and welding capabilities, surpassing Cu-ETP in these aspects.

Its primary application area is critical electrical, electronic, and communication equipment.

Comparable Standarts

EN	JIS	UNS
CW008A	C1020	C10200

Chemical Composition %

Cu	Pb	Bi [%]	O [%]
min 99.95	max 0.005	max 0.0005	max 0.001

Physical Properties

Melting Point	1083	[°C]
Density	8.94	(g/cm³)
Cp @ 20°C	0.394	[kJ/kgK]
Modules of Elasticity	127	[GPa]
Electrical Conductivity	≥100	%IACS
Electrical Conductivity [W/mK]	394	%
α @ 20°C	17.7	[10-6/K]

Note: The specified conductivity applies to the soft condition only.

Cp specific heat

α thermal expansion coefficent

Fabrication Properties

Gas shield arc welding	good
Cold Formability	excellent
Hot Formability	excellent
Soldering ability	excellent
Oxyacetylene welding	fair
Resistance welding	not recomended
Machining	not recomended
Brazing	excellent

Electrical Conductivity

Electrical conductivity depends on chemical composition, the level of cold deformation, and grain size. High levels of deformation and a small grain size reduce conductivity.

Typcial Uses

Radar components, conductors, contacts and terminals, printed circuits, carrier tapes, flat cables, flexible circuits, terminal lugs, copper-ceramic substrates.

Corrosion Resistance

Copper is resistant to natural and industrial atmospheres, marine air, potable and service water, non-oxidizing acids, alkaline solutions, and neutral saline solutions.
Copper exhibits low corrosion resistance in environments containing ammonia, halogenide, cyanide and hydrogen sulfide solutions and atmospheres, oxidizing acids, and seawater (especially at high flow rates).

Mechanical Properties

	Tensile Strength [MPa]	Yield Strength [MPa]	Elongation A50 [%]	Hardness HV [-]	Bend ratio 90° [r]	
					GW	BW
R220	220-260	≤ 140	≥ 33	40-65	0	0
R240	240-300	≥ 180	≥ 8	65-95	0	0
R290	290-360	≥ 250	≥ 4	90-110	0	0
R360	≥ 360	≥ 320	≥ 2	≥ 110	0	0

Other tempers are available upon request.

r = x * t (thickness t ≤ 0.5mm)

GW bend axis transverse to rolling direction. BW bend axis parallel to rolling direction.

Dimensional Specifications

Thickness (mm)	Width (mm)
0.04-0.20	10-400
0.21-0.50	5-400
0.51-1.00	5-600
1.01-4.00	15-600
4.01-7.00	25-600

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