CuETP

CuETP | C11000

Cu-ETP is an oxygen-containing, electrolytically refined copper with excellent electrical conductivity, offering an economical alternative to other high-conductivity copper alloys. Because of its residual oxygen content, it is susceptible to hydrogen embrittlement. Consequently, it is not recommended for welding. Typical applications include architectural elements and electrical components.

Comparable Standarts

EN	JIS	UNS
CW004A	C 110	C11000

Chemical Composition %

Cu	Pb	Bi [%]	O [%]
min 99.90	max 0.005	max 0.0005	max 0.04

Physical Properties

Melting Point	1083	[°C]
Density	8.9	(g/cm³)
Cp @ 20°C	0.394	[kJ/kgK]
Thermal Conductivity	390	(W/mK)
Electrical Conductivity	≥100	%IACS
Modules of Elasticity	127	[GPa]
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

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

Electrical Conductivity

Electrical conductivity is dependent on chemical composition, the level of cold work, and grain size. High levels of cold work and a fine grain size decrease conductivity.

Typcial Uses

Architectural metalwork, gutters, roofing, dowspouts, automotive and industrial radiators, electrical conductors, contacts, terminals, chemical process equipment, kitchen and various household appliances, etc.

Corrosion Resistance

Copper exhibits strong resistance to a wide range of environments, including natural and industrial atmospheres, maritime air, potable and utility water, non-oxidizing acids, alkaline solutions, and neutral saline solutions. However, it demonstrates poor corrosion resistance in the presence of specific corrosive agents, such as ammonia, halogens, cyanides, hydrogen sulfide, oxidizing acids, and seawater—particularly under high-flow conditions.
The oxygen content in Cu-ETP copper makes it susceptible to hydrogen embrittlement when exposed to reducing atmospheres at elevated temperatures.

Mechanical Properties

	Tensile Strength [MPa]	Yield Strangth [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	0.5
R360	≥ 360	≥ 320	≥ 2	≥ 110	1	2

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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