CuHCP

CuHCP | C10300

Cu-HCP is a deoxidized, oxygen-free copper with a low phosphorus content. It features excellent formability, weldability, and brazeability, along with high electrical conductivity.
Its application areas include electrical component parts, base plates for power modules, process equipment manufacturing, and the cable industry.

Comparable Standarts

EN	JIS
CW021A	-

Chemical Composition %

Cu	P
min 99.95	0.002-0.007

Physical Properties

Density	8.94	(g/cm³)
Melting Point	1083	[°C]
Cp @ 20°C	0.377	[kJ/kgK]
Thermal Conductivity	385	(W/mK)
Electrical Conductivity	≥ 57	MS/m
Electrical Conductivity	≥98	%IACS
Modules of Elasticity	127	[GPa]
@20-300°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	fair
Gas shield arc welding	excellent
Resistance welding	not recomended
Machining	not recomended
Brazing	excellent

Electrical Conductivity

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

Typcial Uses

Telecommunication cables, terminals, clad products, busbars, base plates for power modules, electrical conductors, pressure vessels.

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 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
R360	≥ 360	≥ 320	≥ 2	≥ 110	0	0.5

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

Altek Döküm A.Ş. | Beylikdüzü OSB Mustafa Kurtoğlu Cad.No: 10/1 | Beylikdüzü - İstanbul | TÜRKİYE
satis@altekdokum.com | www.altekdokum.com

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