

Alloy Designation

EN	Cu-ETP
DIN CEN/TS 13388	CW004A
UNS	C11000

Characteristics

Cu-ETP is an oxygen containing copper which has a very high electrical and thermal conductivity. It has excellent forming properties. Due to its oxygen content soldering and welding properties are limited.

Main Applications

Electrical: Transformer Coils, Switches, Terminals, Contacts, Radio Parts, Busbars, Terminal Connectors, Conductors, Stranded Conductors, Cable Strip
Industrial: Printed circuit boards, Stamped parts, Pressure Vessels, Chemical Process Equipment, Chlorine Cells, Chimney Cap Screens, Heat Exchangers, Printing Rolls, Anodes, Rotating Bands, Kettles, Pans, Vats, Heat sinks

Chemical Composition (Balance)

Weight percentage

Cu	≥ 99.90	%
O	≤ 0.040	%

Mechanical Properties (EN 1652)

Temper	Tensile Strength	Yield Strength Minimum	Elongation Minimum	Hardness	Bendability 90°	
	R _m	R _{p0.2}	A _{50mm}	HV *	gw rel. Bending radius R/T	bw
	MPa	MPa	%	HV	Strip thickness ≤ 0.50mm	
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

* only for information

Physical Properties

Typical values in annealed temper at 20 °C

Density		8.92	g/cm ³
Thermal expansion coefficient	20 .. 300 °C	17.7	10 ⁻⁶ /K
Specific heat capacity		0.394	J/(g·K)
Thermal conductivity		394	W/(m·K)
Electrical conductivity	MS/m	58	MS/m
Electrical conductivity	IACS	100	%
Thermal coefficient of electrical resistance	(0 .. 100 °C)	3.7	10 ⁻³ /K
Modulus of elasticity	GPa	130	GPa

Fabrication Properties *

Cold Forming Properties	Excellent
Machinability (Rating 20)	Less suitable
Electroplating Properties	Excellent
Hot Tinning Properties	Excellent
Soft Soldering, Brazing	Excellent
Resistance Welding	Less suitable
Gas Shielded Arc Welding	Less suitable
Laser Welding	Less suitable

During heating in reducing atmosphere hydrogen can penetrate inside the copper and react with Cu-Oxide to water vapour. Its pressure can cause embrittlement.

* For more details call our technical service