

C101 (OFE)

Composition

Cu* (%)	O ₂ (ppm)
99.99 min	5 max

*) Incl. Ag

Physical Properties

Temper	Melting point (liquidus)	Density	Specific heat cap. at 68 F (20 °C)	Electrical cond. Nom in black	Thermal cond. at 68 F (20 °C)	Mod. of elasticity	Coef. of therm.exp at 68 F (20 °C)
	°F °C	lb/in ³ g/cm ³	Btu/lb°F kJ/(kg°K)	% IACS	Btu/ft h °F W/(m°K)	X1000 ksi GPa	10 ⁻⁶ /°F 10 ⁻⁶ /°C
All	1981 1083	0.323 8.9	0.092 0.394	101 101	226 391	17 117	9.8 17.6

Mechanical Properties

Temper	R _{p0.2} Yield strength ksi N/mm ²	R _m Tensile strength ksi N/mm ²	A ₅₀ Elongation 2" %	Hardness for reference HR30T HV	Min bend ratio 90°		Min bend ratio 180°	
					GW	BW	GW	BW
Soft	10 69	26-38 179-262	35		0.0	0.0	0.0	0.0
H02 (1/2H)	37 255	37-46 255-317	20	50 90	0.0	0.5	0.0	1.0
H04 (H)	45 310	43-52 297-359	8	58 100	1.0	2.0	2.0	3.0
H06 (EH)	50 349	47-56 324-386	3	60 105	2.0	3.0	2.5	
H08 (SH)	52 359	50-58 345-400	3	63 110	3.0		4.0	
H10 (ES)	54 373	52 min 359 min	2	61 min 112				

Other tempers are available upon request.

Data for information only and not for use as purchase specification.

Yield strength, Elongation and Hardness are typical values for each temper.

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Alloy attributes

Oxygen-Free, High Conductivity Copper (OFE) - 101 alloy (99.99 % minimum Cu) offers the advantages of both Electrolytic Tough Pitch Copper (ETP) - 110 and Phosphor deoxidized Copper - 122. The high purity and absence of deoxidizers accounts for electrical conductivity of 101 % IACS as well as no susceptibility for hydrogen embrittlement. Due to the absence of oxides in the structure, 101 is capable of withstanding extra deep drawing and severe forming and is superior to 110 in this respect. 101 is favored for very critical electrical, electronic and communication applications.

Superior electrical and thermal conductivity

Excellent corrosion resistance

Good formability

Resists hydrogen embrittlement

Low metal volatility in vacuum

High scrap value

Typical applications

Radar components, electrical and electronic conductors, contacts and terminals, printed circuits, carrier tapes, flat-type cables, flexible circuits, terminal lugs.

Design limitations

Exposure to high sulfide media should be avoided.

Applicable specifications

ASTM B152, ASME SB152