C102 (OF)

Composition

Cu* (%)	O_2 (ppm)
99.95 min	10 max

*) Incl. Ag

Physical Properties

Temper	Melting point (liquidus) °F °C	Density lb/in^3 g/cm3	Specific heat cap. at 68 F (20 ºC) Btu/lb°F kJ/(kg°K)	Electrical cond. Nom in black % IACS	Thermal cond. at 68 F (20 ºC) Btu/ft h °F W/(m°K)	Mod. of elasticity X1000 ksi GPa	Coef.of therm.exp at 68 F (20 ºC) 10^{-6}/°F 10-6/°C
All	1981 1083	0.323 8.9	0.092 0.394	100 100	226 391	17 117	9.8 17.6

Mechanical Properties

At max 0.040"
(1 mm)

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 avaliable upon request.
Data for information only and not for use as purchase specification.
Yield strength, Elongation and Hardness are typical values for each temper.

C102 (OF)

Alloy attributes

Oxygen-Free, High Conductivity Copper (OF) - 102 alloy (99.95 % 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 100 % IACS as well as no susceptibility for hydrogen embrittlement. Due to the absence of oxides in the structure, 102 is capable of withstanding extra deep drawing and severe forming and is superior to 110 in this respect. 102 is favored for very critical electrical, electronic and communication applications.

Superior electrical and thermal conductivity
Excellent corrosion resistance
Good formability
Good weldability
Resists hydrogen embrittlement
Low metal volatility in vacuum
High scrap value

Typical applications

Telecommunication cables, electrical and electronic conductors, contacts and terminals, printed circuits, carrier tapes, flexible circuits, terminal lugs.

Design limitations

Exposure to high sulfide media should be avoided.

Applicable specifications

ASTM B152, ASME SB152