

C122 (DHP)

Composition

Cu* (%)	P (%)
99.9 min	0.015-0.040

*) 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						
All	1981 1083	0.323 8.9	0.092 0.394	85 85	196 339	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 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

Phosphorus-Deoxidized Copper – 122 alloy with a nominal composition of 99.9 % minimum copper and 0.02 % phosphorus is the most widely used copper for tube and pipe but also finds widespread use for sheet and strip items. 122 alloy exhibits better ductility than 110 alloy and is adaptable for progressive drawing operations requiring few or no intermediate anneals. A major advantage of 122 alloy is the freedom from hydrogen embrittlement susceptibility in reducing atmospheres. This advantage is utilized in the cladding of steel and subsequent reducing atmosphere anneals without incurring the embrittlement, which occurs when cladding with 110 alloy. The electrical and thermal conductivity are lower when compared with 110 alloy but adequate for many applications as exemplified by a major use of strip to produce air conditioning and refrigeration tubing by gas shielding arc welding techniques.

Excellent electrical and thermal conductivity
Excellent corrosion resistance
Excellent formability
Excellent weldability

Typical applications

Strips for welded tube, cladding of steel and stainless steel, chemical process equipment, vats, kettles, pans, ice trays, pots, cooking utensils, deep drawn copper items, plaques, medallions and emblems.

Design limitations

Exposure to high sulfide media should be avoided.

Applicable specifications

ASTM B152, B370, ASME SB152