

C1453 (CuTe0.02Sn0.02)

Composition

Cu* (%)	Sn (%)	Te or Se (%)	P (%)
99.90	0.003-0.023	0.003-0.023	0.001-0.010

*) Incl. Ag, Sn, Te and/or Se

Physical Properties

Temper	Melting point (liquidus)	Density lb/in ³ g/cm ³	Specific heat cap. at 68 F (20 °C)	Electrical cond. Nom in black % IACS	Thermal cond. at 68 F (20 °C)	Mod. of elasticity X1000 ksi GPa	Coef. of therm.exp at 68 F (20 °C)
	°F °C		Btu/lb°F kJ/(kg°K)		Btu/ft h °F W/(m°K)		10 ⁻⁶ /°F 10 ⁻⁶ /°C
All	1976	0.323 8.9	0.092	96 94	212	17 117	9.8
	1080		0.394		368		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	12 83	32-40 221-276	15		0.0	0.0	0.0	0.0
H02 (1/2H)	42 290	41-49 283-338	12	105	0.0	0.0	1.0	1.0
H04 (H)	50 345	47-54 324-373	3	115	0.0	0.0	1.5	2.0
H06 (EH)	54 373	50-60 345-414	2	118	0.5	0.5	1.5	
H08 (SH)	58 400	54-64 373-441	2	120	0.5	1.0		
H10 (ES)	57 min 393 min	57 min 393 min	2	120				

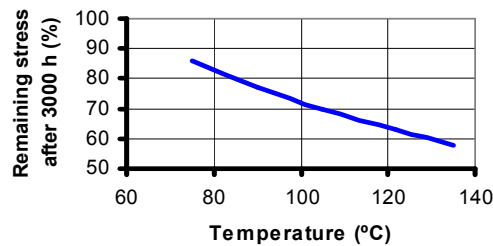
Other tempers are available upon request.

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

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

Stress relaxation resistance

Typical temperature for min 70 % remaining stress after 3000 h: 100 °C



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Alloy attributes

A patented copper alloy for electrical and heat transfer applications features a singular combination of properties to ensure reliable performance. The new C1453 alloy can be cold rolled to hard tempers, yet retains good formability for intricate connector components. Electrical conductivity ranges from 94 to 98 % IACS, depending on temper, with corresponding high thermal conductivity. Stress relaxation performance and high softening temperatures make this alloy well suited for the most demanding connector applications. Other C1453 characteristics contribute to its utility value: corrosion resistance, ease of tinning and relatively high modulus of elasticity.

The excellent electrical and thermal conductivity exhibited by C1453 causes less heat to be generated at the points of contact, and any heat that is produced transfers easily to the lead wires and out of the connector. This results in a significantly cooler running electrical/electronic interconnect assembly.

High electrical and thermal conductivity
Good softening resistance
Medium stress relaxation resistance
Good formability
Very cost effective

Typical applications

Connectors and terminals for electrical and electronic applications, bus bars for junction boxes, lead frames, electrical contacts and radiator and heat exchanger fins.

Design limitations

Exposure to high sulfide media should be avoided.

Applicable specifications

ASTM B152, B888

Softening resistance after 1 h annealing

