

C14530 (CuTe0.02Sn0.02) 18 08 US

Comparable standards: UNS C14530
 Aurubis designations: C1453 • SM0300

Description A patented copper alloy for electrical and heat transfer applications features a singular combination of properties to ensure reliable performance. C1453 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 characteristics contribute to its utility value: corrosion resistance, ease of tinning and relatively high modulus of elasticity. The excellent electrical and thermal conductivity cause 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.

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

Melting point	Density	Specific heat cap. at 20°C	Electrical cond.	Thermal cond. at 20°C	Mod. of elasticity	Coef. of therm exp. at 20°C
[°F] [°C]	[lb/in ³] [g/cm ³]	[Btu/lb°F] [kJ/kgK]	[%IACS] [MS/m]	[Btu/ft h °F] [W/mK]	x1000 ksi [GPa]	[10 ⁻⁶ /°F] [10 ⁻⁶ /K]
1976 1080	0.323 8.9	0.092 0.385	94 55	212 368	17 117	9.8 17.6

The specified conductivity applies to the soft condition only

Mechanical properties

Temper	Tensile strength Rm [ksi] [MPa]	Yield strength Rp0.2 nominal [ksi] [MPa]	Elongation 2" nominal [%]	Hard-ness HV nominal [-]	min bend ratio 90°		min. bend ratio 180°	
					GW	BW	GW	BW
Soft	32-40 221-276	12 83	15		0	0	0	0
H02	41-49 283-338	42 290	12	105	0	0	1.0	1.0
H04	47-54 324-373	50 345	3	115	0	0	1.5	2.0
H06	50-60 345-414	54 373	2	118	0.5	0.5	1.5	
H08	54-64 373-441	58 400	2	120	0.5	1.0		
H10	57 min 393 min	57 min 393 min	2	120				

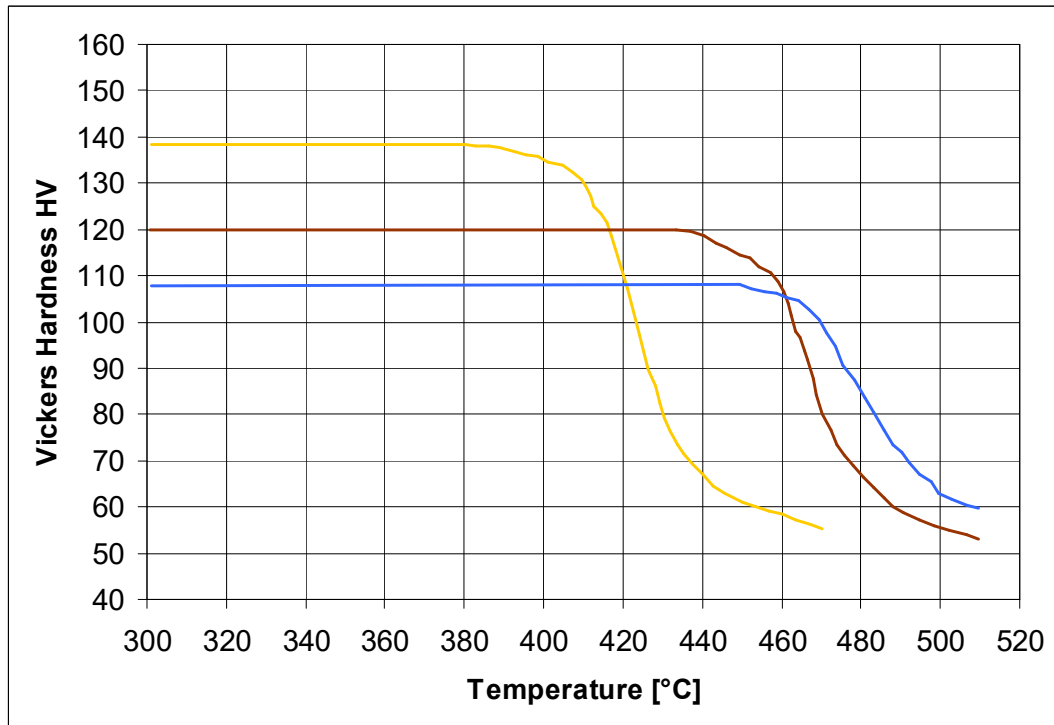
Other tempers are available upon request.
 GW bend axis transverse to rolling direction. BW bend axis parallel to rolling direction

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Fabrication properties

Soldering	excellent
Gas shielded arc welding	excellent
Butt Welding	good
Cold formability	excellent

Heat resistance and Softening Characteristic



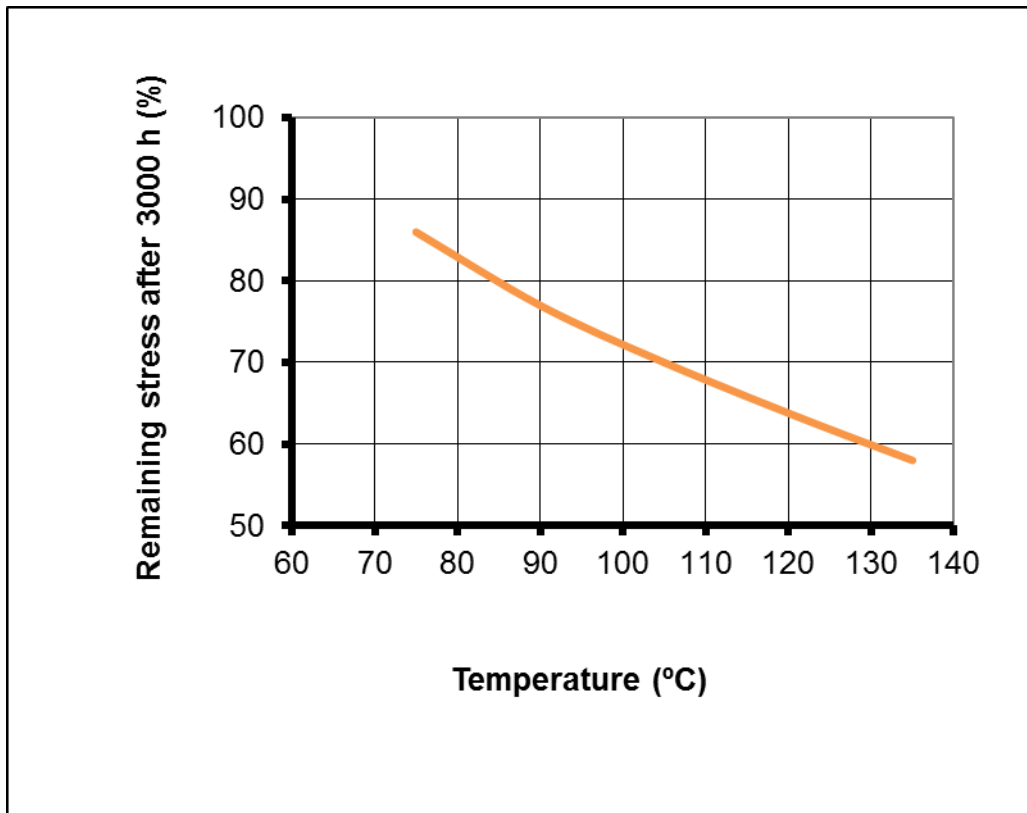
Annealing time 2 min.

Temperatures at 1 min annealing time will be 10 degrees **higher**.
 Temperatures at 4 min annealing time will be 10 degrees **lower**.

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**Stress relaxation
Resistance**

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



Typical uses

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

Applicable specifications

ASTM B152, B888

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