

C6643 (CuZn14Fe0.8Sn0.8)

Composition

Cu* (%)	Zn (%)	Fe (%)	Sn (%)	Pb (%)	P (%)
rem	13.0-15.0	0.6-0.9	0.6-0.9	0.05 max	0.10 max

*) Cu+sum of named elements 99.5 % min.

Physical Properties

Temper	Melting point (liquidus)	Density lb/in ³ g/cm ³	Specific heat cap. at 68 F (20 °C) Btu/lb°F kJ/(kg°K)	Electrical cond. Nom in black % IACS	Thermal cond. at 68 F (20 °C) Btu/ft h °F W/(m°K)	Mod. of elasticity X1000 ksi GPa	Coef. of therm.exp at 68 F (20 °C)
	°F °C						10 ⁻⁶ /°F 10 ⁻⁶ /°C
All	1880	0.317 8.8	0.09 0.38	28 28	70 121	16 112	10
	1025						18

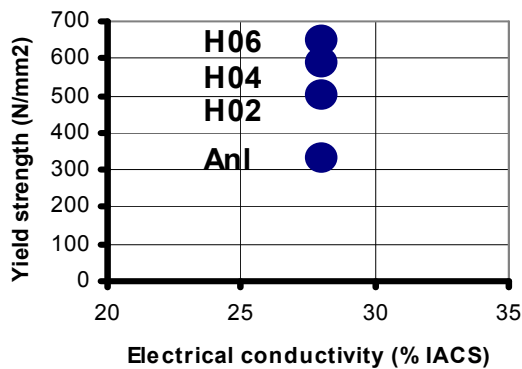
Mechanical Properties

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
Anl Soft	35 min 240 min	56-69 386-476	25 min	110-140	0.0	0.0	0.0	0.0
H02 (1/2)	65 min 448 min	70-85 483-586	5 min	160-190	0.5	1.0	0.5	1.0
H04 (H)	75 min 517 min	85-100 586-690	2 min	190-220	1.5	3.0	1.5	4.0
H06 (EH)	85 min 586 min	97-112 669-773	1 min	210-240	NA	NA	NA	NA

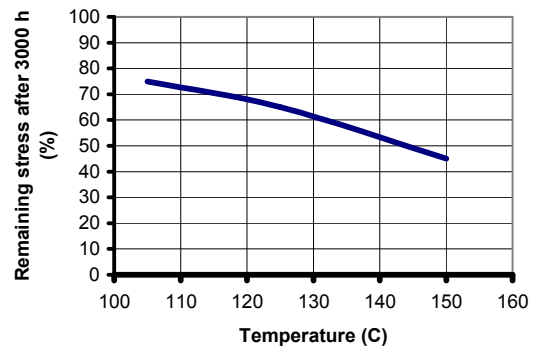
Other tempers are available upon request.

Typical properties at 0.010" (0.25 mm)



Stress relaxation resistance

Temp for min 70 % remaining stress after 3000 h (°C)
max 120 °C



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Alloy attributes

C6643 is a new alloy from Luvata developed to meet the needs for a cost efficient alternative to tin bronze. The alloy has been developed from a Luvata alloy C6642. C6643 has similar composition to C6642 with addition of 0.8 % Sn to increase the strength. The composition makes both alloys very cost efficient. Compared to 4 & 5 % tin bronze C6643 has similar strength with a significant increase in electrical conductivity. In annealed condition C6643 is suitable for brazing without losing strength.

High strength
Medium conductivity
Good stress relaxation resistance
In annealed condition suitable for brazing without losing strength
Very cost efficient

Stress strain curves

Typical properties for material at 0.010" (0.25 mm)

