C15500 (CuMg0.1)

18 08 US

Comparable standards: UNS C15500
Aurubis designations: C155 • PNA297

Description

Magnesia increases the strength of copper and hardly lowers the conductivity. Therefore, the magnesia-alloyed CuMg0.1 combines a very high level of electrical and thermal conductivity with moderate values of strength.

Composition

Cu [%]	Mg [%]	P [%]	Ag [%]
min. 99.75	0.08 – 0.13	0.040 – 0.080	0.027 – 0.100

Physical properties

Melting point [°F] [°C]	Density [lb/in³] [g/cm³]	Specific heat cap. at 20°C [Btu/lb°F] [kJ/kgK]	Electrical cond. [%IACS] [MS/m]	Thermal cond. at 20°C [Btu/ft h °F] [W/mK]	Mod. of elasticity x1000 ksi [GPa]	Coef. of therm exp. at 20°C [10^{-6}/°F] [10^{-6}/K]
1980 1082	0.322 8.91	0.094 0.394	> 86 > 50	> 196 > 340	17.0 117	9.8 17.6

The specified conductivity applies to the soft condition only

Mechanical properties

	Tensile strength Rm [ksi] [MPa]	Yield strength Rp0.2 min [ksi] [MPa]	Elon-gation 2" min [%]	Hard-ness HV [-]	min bend ratio 90°		min. bend ratio 180°	
					GW	BW	GW	BW
Soft	34-43 235-295	15 105	30					
H02	45-55 310-380	38 260	13					
H04	56-64 385-440	50 345	6					
H06	63-72 435-495	56 385	5					
H08	65-73 450-505	60 415	4					
H10	68-75 470-515	63 435	3					

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

Fabrication properties

Cold formability	excellent
Hot formability	excellent
Soldering	excellent
Brazing	excellent
Oxyacetylene welding	not recommended
Gas shielded arc welding	not recommended

Typical uses

Connectors, Leadframes, clamps