C15500

CuMgAgP

Alloy Designation	
EN	
DIN CEN/TS 13388	
UNS	C15500

Characteristics

C15500 is alloyed with Magnesium (Mg) to achieve a high strength combined with very good conductivity. It has good relaxation properties, high softening resistance and oxidation stability.

Chemical Composition (Balance) Weight percentage		
Cu (incl. Ag)	≥ 99.75	%
Mg	0.1	%
P	0.06	%
Ag	0.06	%

Main Applications

Electrical contacts, Connectors and Electronic Components.

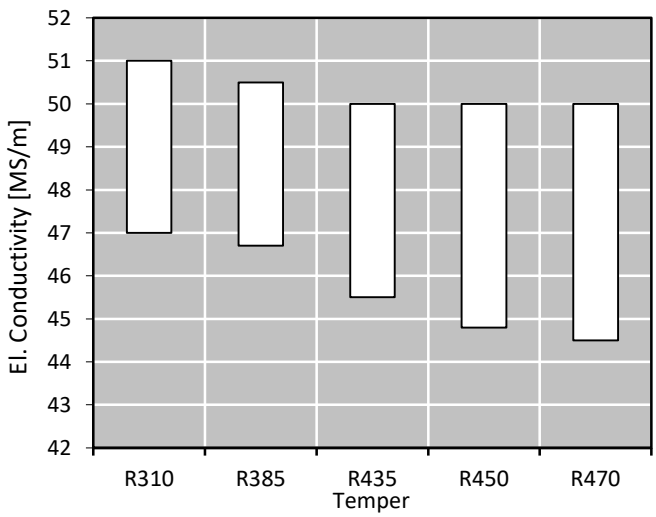
Mechanical Properties (EN 1652)

Temper		Tensile Strength Rm	Yield Strength Minimum $Rp_{0.2}$	Elongation Minimum A_{50mm}	Hardness HV *	Bending 90° gw	Bending 90° bw
		MPa	MPa	%	HV	rel. Bending Radius R/T Strip Thickness ≤ 0.50mm	
R235	O61 (soft)	235 .. 295	105	30	-	0	0
R310	H02 (½ hard)	310 .. 380	260	13	90 .. 130	0	0
R385	H04 (hard)	385 .. 440	345	6	125 .. 145	0	0.5
R435	H06 (extra hard)	435 .. 495	385	5	140 .. 160	0.5	1
R450	H08 (spring)	450 .. 505	415	4	≥ 135	0.5	1
R470	H10 (extra spring)	470 .. 515	435	3	-	1	2

* only for information

Physical Properties Typical values in annealed temper at 20 °C			
Density		8.91	g/cm³
Thermal expansion coefficient	20 .. 300 °C	17.8	10^{-6}/K
Specific heat capacity		0,385	J/(g·K)
Thermal conductivity		350	W/(m·K)
Electrical conductivity	MS/m	50	MS/m
Electrical conductivity	IACS	86	%
Thermal coefficient of electrical resistance	(0 .. 100 °C)	2.5	10^{-3}/K
Modulus of elasticity	GPa	120	GPa

Electrical Conductivity



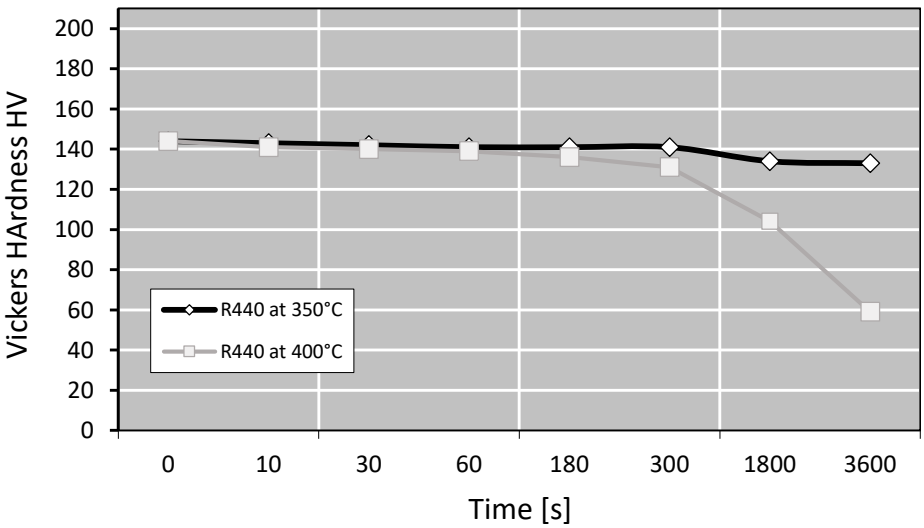
Fabrication Properties *	
Cold Forming Properties	Excellent
Machinability (Rating 20)	Less suitable
Electroplating Properties	Excellent
Hot Tinning Properties	Excellent
Soft Soldering, Brazing	Excellent
Resistance Welding	Less suitable
Gas Shielded Arc Welding	Excellent
Laser Welding	Fair

* For more details call our technical service

Corrosion Resistance *

Practically resistant against stress corrosion cracking

Softening Resistance



After short time heat treatment Vickers Hardness is measured. The diagram shows typical values.

Bend Fatigue (at room temperature)

The fatigue strength gives an indication about the resistance to variations in applied tension. It is measured under symmetrical alternating load. The maximum bending load for 10^7 load cycles without crack is measured. Dependent on the temper class it is approximately 1/3 of the tensile strength R_m.

Available delivery forms *
Strips in coils
Traverse-wound coils with drum weights up to 1.5 t
TECSTRIP®_multicoil up to 2.5 t
Hot-Dip-Tinned strips in thickness range 0.10 up to 1.20 mm

* For more details call our sales service