

Alloy Designation

EN CW454K

DIN CEN/TS 13388 -

UNS -

Chemical Composition (Balance)

Weight percentage

Cu Rest %

Sn 1.5 ... 3.5 %

Zn 7.5 ... 10 %

Characteristics

CuSn3Zn9 has excellent cold forming properties, good conductivity combined with high strength and hardness. Corrosion resistance, especially against seawater and industrial atmosphere is good and stress corrosion cracking susceptibility is low. Spring properties are good, so it is used for applications like spring, connectors, contacts.

Main Applications

Automotive: Switches and Relays, Contacts, Connectors, Terminals.

Electrical: Switches and Relays, Contacts, Connectors, Terminals, Components for the electrical industry, Stamped parts.

Mechanical Properties (EN 1652)

Temper	Tensile Strength R _m	Yield Strength Minimum R _{p0.2}	Elongation Minimum A _{50mm}	Hardness HV *	Bending 90°	
	MPa	MPa	%	HV	gw rel. Bending Radius	bw R/T
	MPa	MPa	%	HV	Strip Thickness ≤ 0.50mm	
R320	320 .. 380	≤ 230 *	25	80 .. 110	0	0
R380	380 .. 430	200 *	16	110 .. 140	0	0
R430	430 .. 520	330 *	6	140 .. 170	0	0
R510	510 .. 600	430 *	3	160 .. 190	0	1
R580	580 .. 690	520 *	-	180 .. 210	1	2
R660	≥ 660	610 *	-	≥ 200	-	-

* only for information

Physical Properties

Typical values in annealed temper at 20 °C

Density 8.81 g/cm³

Thermal expansion coefficient 20 .. 300 °C 18.4 10⁻⁶/K

Specific heat capacity 0.38 J/(g·K)

Thermal conductivity 120 W/(m·K)

Electrical conductivity MS/m 15 MS/m

Electrical conductivity IACS 25 %

Thermal coefficient of electrical resistance (0 .. 100 °C) 1.0 10⁻³/K

Modulus of elasticity GPa 120 GPa

Fabrication Properties *

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

* For more details call our technical service