

# C18160

## STOL® 95 - CuCrZr

Alloy Designation	STOL® 95
EN	CuCr1Zr
DIN CEN/TS 13388	
UNS	C18160

### Characteristics

**STOL® 95** is a CuCrZr alloy that can be hardened by cold forming and by precipitation of CuCrZr - phases during a heat treatment. It has good bendability, excellent hot and cold forming properties, a high strength and a good corrosion resistance.

Due to the CrZr-precipitations the relaxation properties, even at temperatures up to 250 °C are excellent. The electrical and thermal conductivity is excellent. Welding, soldering and brazing properties are good too.

### Chemical Composition (Balance)

Weight percentage

Cu (incl. Ag)	Rest	%
Cr	0.8	%
Zr	0.2	%

### Main Applications

**Automotive:** Switches and Relays, Contacts, Connectors, Terminals, Press fits, Hybrid Cars.

**Electrical:** Switches and Relays, Contacts, Connectors, Terminals, Press fits, Components for the electrical industry, Stamped parts, Semiconductor Components, Junction Boxes, Photovoltaic Systems.

### Mechanical Properties (EN 1652)

Temper	Temper <small>TM = Mill hardened</small>	Tensile Strength Rm	Yield Strength Minimum Rp0.2	Elongation Minimum A <sub>50mm</sub>	Hardness HV *	Bending 90°	
						gw rel. Bending Radius R/T	bw
		MPa	MPa	%	HV	Strip Thickness ≤ 0.50mm	
<b>R480</b>	TM04	480 .. 560	450	8	150 .. 190	1.5	1.5
<b>R540</b>	TM08	540 .. 630	500	4	160 .. 200	2	2
<b>R540S</b>	TR08	540 .. 620	480	8	160 .. 190	1.5	1.5

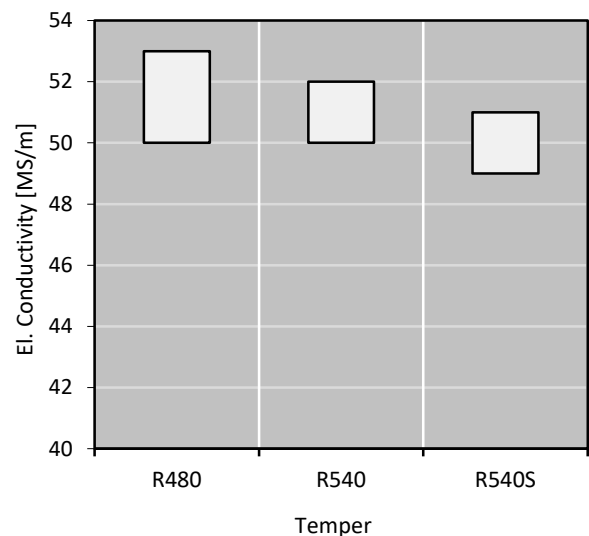
\* only for information

### Physical Properties

Typical values in annealed temper at 20 °C

Density		8.92	g/cm <sup>3</sup>
Thermal expansion coefficient	20 .. 300 °C	18.0	10 <sup>-6</sup> /K
Specific heat capacity		0.381	J/(g·K)
Thermal conductivity		330	W/(m·K)
Electrical conductivity	MS/m	50	MS/m
Electrical conductivity	IACS	86	%
Thermal coefficient of electrical resistance	(0 .. 100 °C)	3	10 <sup>-3</sup> /K
Modulus of elasticity	GPa	135	GPa

### Electrical Conductivity



#### Fabrication Properties \*

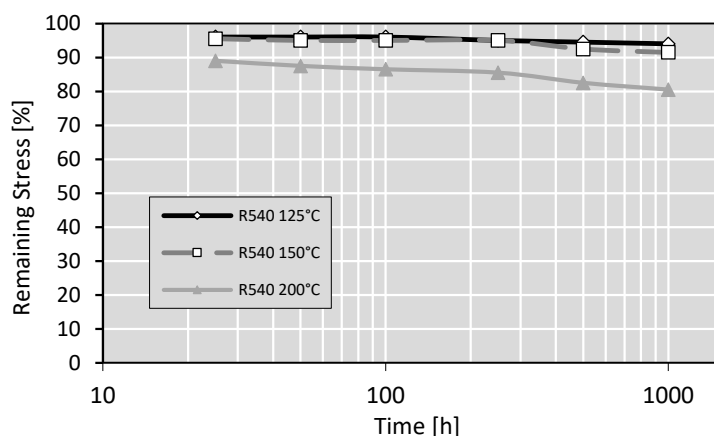
Cold Forming Properties	Good
Machinability (Rating 20)	Less suitable
Electroplating Properties	Excellent
Hot Tinning Properties	Excellent
Soft Soldering, Brazing	Excellent
Resistance Welding	Less suitable
Gas Shielded Arc Welding	Excellent
Laser Welding	Fair

\* For more details call our technical service

#### Corrosion Resistance \*

**STOL® 95** is resistant to pure water vapour and non oxidizing acids and alkalis as well as neutral saline solutions. The alloy is insensitive to stress corrosion cracking.

#### Relaxation Properties



Relaxation values give an indication about stress relieve of strip under tension for a certain time and temperature. Typical test sample thickness is 0.3 – 0.6 mm.

Initial Stress  
80% von  $R_{p0.2}$   
Parallel Rolling Direction

#### 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

Due to continued improvements within our production process, the details stated in our brochure can not be guaranteed. We reserve the right to update or amend our products, without prior notification. We suggest that you obtain confirmation of our product details / specifications prior to committing to specific alloys.