

C19400

STOL® 194 - CuFe2P

Alloy Designation	STOL® 194
EN	CuFe2P
DIN CEN/TS 13388	CW107C
UNS	C19400

Chemical Composition (Balance)

Weight percentage

Cu	Rest	%
Fe	2.4	%
Zn	0.1	%
P	0.03	

Characteristics

STOL®194 is a medium strength alloy, with fine Fe precipitations. It combines high conductivity with medium strength and good relaxation properties.

Main Applications

Automotive: Fuel Injectors, Electrical Connectors – Automotive.

Electrical: Circuit Breaker, Components, Contact Springs, Lead Frames, Electrical Connectors, Cable Warp, Electrical

Springs: Clamps, Plug Contacts, Fuse Clips, Terminal.

Mechanical Properties (EN 1652)

Temper	Tensile Strength	Yield Strength Minimum	Elongation Minimum	Hardness	Bending 90°	
	R _m	R _{p0.2}	A _{50mm}	HV *	gw rel. Bending Radius R/T	bw
	MPa	MPa	%	HV	Strip Thickness ≤ 0.50mm	
R300	300 .. 360	≤ 240	18	80 .. 100	0	0
R360	360 .. 430	270	15	110 .. 135	0	0
R420	420 .. 480	380	10	130 .. 150	0.5	0.5
R480	480 .. 540	430	7	140 .. 160	0.5	0.5
R520	520 .. 580	470	4	≥ 140	2.5	3.5

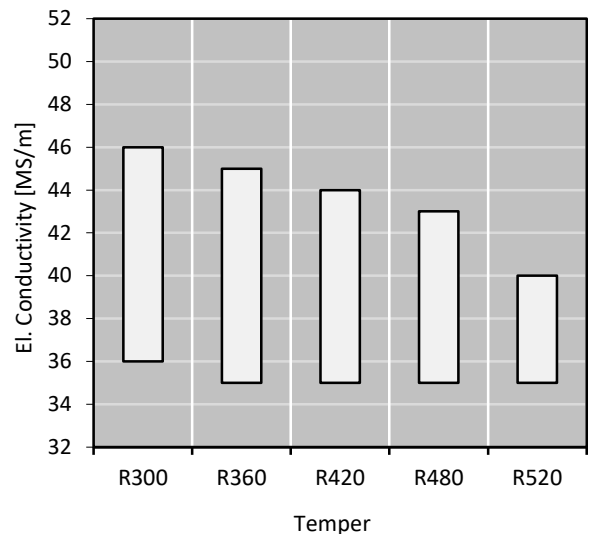
* only for information

Physical Properties

Typical values in annealed temper at 20 °C

Density		8.91	g/cm ³
Thermal expansion coefficient	20 .. 300 °C	16.3	10 ⁻⁶ /K
Specific heat capacity		0.38	J/(g·K)
Thermal conductivity		260	W/(m·K)
Electrical conductivity	MS/m	35	MS/m
Electrical conductivity	IACS	60	%
Thermal coefficient of electrical resistance	(0 .. 100 °C)	3.31	10 ⁻³ /K
Modulus of elasticity	GPa	125	GPa

Electrical Conductivity



Fabrication Properties *

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

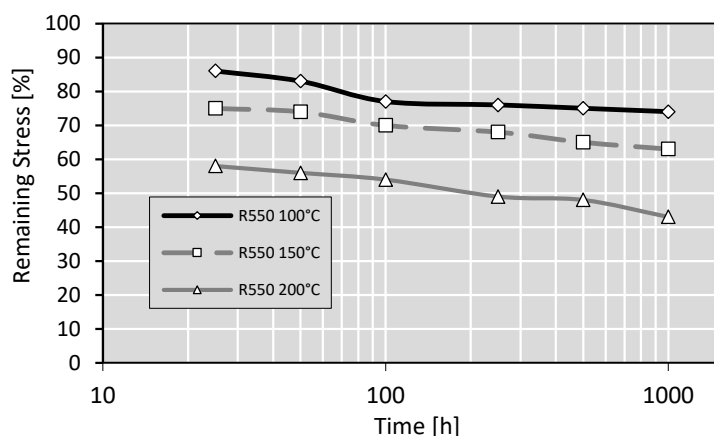
* For more details call our technical service

Corrosion Resistance *

STOL® 194 - CuFe2P has a good resistance in in natural and industrial atmosphere.

Practically resistant against 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