

# CORSON(C19010)

## Cu-Ni-Si ALLOY

### 1、Characteristic：

- Cu-Ni-Si Special Alloy
- High strength、middle electrical conductivity
- Good bending characteristics and heat resistance
- Good stress corrosion resistance
- Mainly applicable to electrical contacts、automobile terminals、lead frame、IC terminals

### 2、Chemical Composition：

Alloy	Chemical Composition %					
	Cu	Ni	Si	P	Sn	Zn
C19010	Bal.	0.8~1.8	0.15~0.35	0.01~0.05	≤ 0.15	≤ 0.50

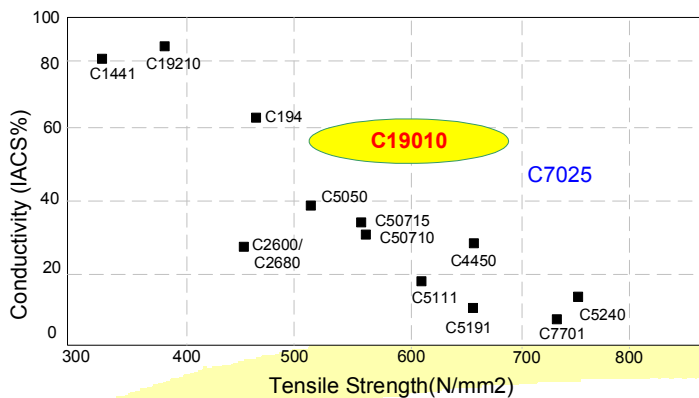
### 3、Physical Properties：

Characteristic	C19010
Melting point °C (Liquid)	1082
Melting point °C (Solid)	1038
Density (gm/cm <sup>3</sup> ) (20°C)	8.9
Coefficient of Thermal Expansion (10 <sup>-6</sup> /°C 20°C~100°C)	16.8
Thermal Conductivity (cal/cm <sup>2</sup> /cm/sec/°C 20°C)	0.62 (260 W/mk)
Electrical Conductivity (Annealing) (IACS%)	55
Modulus of Elasticity (kgf/mm <sup>2</sup> )	13775

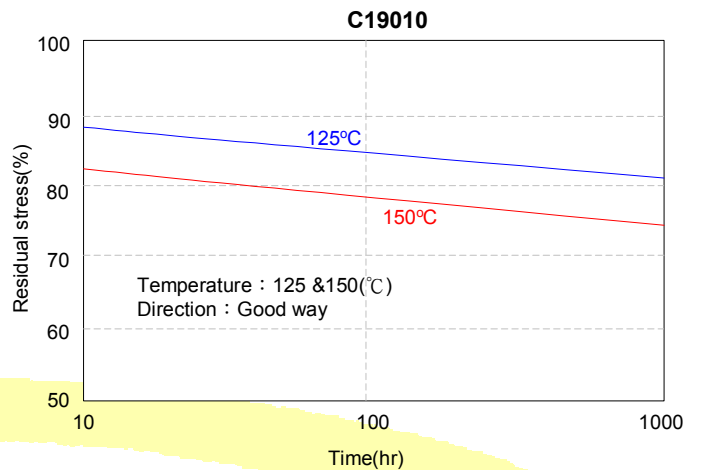
### 4、Mechanical Properties：

Alloy	Temper	Mechanical Proties			
		TS (N/mm <sup>2</sup> )	Ys (N/mm <sup>2</sup> )	EL(%)	Hv(500g)
C19010	1/4 H	360~430	≥ 250	≥ 12	100~130
	1/2 H	410~470	≥ 350	≥ 9	120~155
	H	460~520	≥ 430	≥ 7	135~165
	EH	520~590	≥ 470	≥ 5	145~175
	SH	≥ 580	≥ 540	≥ 3	170~200

### 5、Characteristic location :



### 6、Stress relaxation resistance :



### 7、Bending Properties :

(1)90° bending test : (t≤0.3 )

Test method : JIS Z 2248

Temper	Thickness mm	Direction	R/t						R/t (min)	
			0	0.5	1.0	1.5	2.0	2.5		3.0
H	≤0.3	Good way	○	◎	◎	◎	◎	◎	◎	0
		Bad way	▲	○	◎	◎	◎	◎	◎	0.5
SH	≤0.3	Good way	▲	▲	○	◎	◎	◎	◎	1.0
		Bad way	▲	▲	▲	○	◎	◎	◎	1.5

Determination : ▲ : Crack(Failed) 、 △ : Big wrinkles(Qualified) 、 ○ : Small wrinkles(Qualified) 、 ◎ : Good (Qualified)

(2)180° bending test : (t≤0.3 )

Test method : JIS Z 2248

Temper	Thickness mm	Direction	R/t						R/t (min)	
			0	0.5	1.0	1.5	2.0	2.5		3.0
H	≤0.3	Good way	▲	▲	▲	○	◎	◎	◎	1.5
		Bad way	▲	▲	▲	▲	△	○	◎	2.0
SH	≤0.3	Good way	▲	▲	▲	▲	○	◎	◎	2.0
		Bad way	▲	▲	▲	▲	▲	△	◎	2.5

Determination : ▲ : Crack(Failed) 、 △ : Big wrinkles(Qualified) 、 ○ : Small wrinkles(Qualified) 、 ◎ : Good (Qualified)