Ualloy 040
(Resistance heating wire and resistance wire)

Common Name: CuNi34,NC40.

Ualloy040 is a copper-nickel alloy (Cu56Ni34 alloy) with low resistivity for use at temperatures up to 350°C.

Ualloy040 is kind of low resistance heating alloy.It is one of the key materials of the low-voltage electrical products. It is widely used in low-voltage circuit breaker, electric blankets.thermal overload relay, and other low-voltage electrical product.

Normal composition(%)

Nickel	34	Manganese	0.5
Copper	Bal.		

Typical Mechanical properties（1.0mm）

Yield strength	Tensile Strength	Elongation
Mpa	Mpa	%
220	400	25

Typical Physical properties

Density (g/cm^3)	8.9
Electrical resistivity at 20℃($\Omega mm^2/m$)	0.35
Temperature factor of resistivity（20℃~600℃）$X10^{-5}$/℃	-0
Conductivity coefficient at 20℃ (WmK)	25
EMF vs Cu(μV/℃)(0~100℃)	-39

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Coefficient of thermal expansion	
Temperature	Coefficient of Thermal Expansion x10^{-6}/℃
20 ℃- 400℃	16

Specific heat capacity	
Temperature	J/gK
20℃	0.4

Melting point (℃)	1180
Max continuous operating temperature in air (℃)	350
Magnetic properties	non-magnetic

Corrosion resistance performance

Alloys	Working In atmosphere at 20℃	Working at max temperature 200℃				
		Air and oxygen contain gases	gases with Nitrogen	gases with sulfur oxidability	gases with sulfur reductibility	carburization
Ualloy040	good	good	good	good	bad	good

Style of supply

Alloys Name	Type	Dimension	
Ualloy040W	Wire	D= 0.03~8mm	
Ualloy040R	Ribbon	W= 0.4~40mm	T= 0.05~2.9mm
Ualloy040S	Strip	W= 8~200mm	T= 0.1~3.0
Ualloy040F	Foil	W= 6~120mm	T= 0.005~0.1
Ualloy040B	Bar	Dia= 8~100mm	L= 50~1000

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