Ualloy 012
(Resistance heating wire and resistance wire)

Common Name: CuNi8,Alloy12,CN12

Ualloy012 is a copper-nickel alloy (Cu82Ni12 alloy) with low resistivity for use at temperatures up to 250°C.

Ualloy012 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.

Ualloy12 is typically used for low-temperature applications such as floor heating cables.

Normal composition(%)

Nickel	8	Manganese	-
Copper	Bal.		

Typical Mechanical properties（1.0mm）

Yield strength	Tensile Strength	Elongation
Mpa	Mpa	%
-	270	25

Typical Physical properties

Density (g/cm^3)	8.9
Electrical resistivity at 20℃($\Omega mm^2/m$)	0.12
Temperature factor of resistivity（20℃~600℃）$X10^{-5}$/℃	<57
Conductivity coefficient at 20℃ (WmK)	75
EMF vs Cu(μV/℃)(0~100℃)	-22

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Coefficient of thermal expansion	
Temperature	Coefficient of Thermal Expansion x10^{-6}/℃
20 ℃- 400℃	17.5

Specific heat capacity	
Temperature	J/gK
20℃	0.380

Melting point (℃)	1097
Max continuous operating temperature in air (℃)	250
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
Ualloy012	good	bad	bad	bad	bad	good

Style of supply

Alloys Name	Type	Dimension	
Ualloy012W	Wire	D= 0.06~8mm	
Ualloy012R	Ribbon	W= 0.4~40mm	T= 0.05~2.9mm
Ualloy012S	Strip	W= 8~200mm	T= 0.1~3.0
Ualloy012F	Foil	W= 6~120mm	T= 0.005~0.1
Ualloy012B	Bar	Dia= 8~100mm	L= 50~1000

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