Ualloy109 (Ni80Cr20)

Common Name: Nikrothal 8,MWS-650,NiCrA,Tophet A,HAI-NiCr 80,Chromel A,Alloy A,Alloy 650,N8,Resistohm 80, Stablohm 650,Nichorme V,Nikrothal 80.

Ualloy109 is a nickel-chromium alloy (NiCr alloy) characterized by high resistivity, good oxidation resistance and very good form stability. It is suitable for use at temperatures up to 1200°C,and hold a superior service life compared to Iron chromium alumium alloys.

Typical applications for Ualloy109 are electric heating elements in home appliances,industrial furnaces and resistors(wirewound resistors,metal film resistors), flat irons, ironing machines, water heaters, plastic moulding dies, soldering irons, metal sheathed tubular elements and cartridge elements.

Normal composition(%)

C	P	S	Mn	Si	Cr	Ni	Al	Fe	Other
Max									
0.03	0.02	0.015	0.60	0.75~1.60	20.0~23.0	Bal.	Max 0.50	Max 1.0	-

Typical Mechanical properties（1.0mm）

Yield strength	Tensile Strength	Elongation
Mpa	Mpa	%
420	810	30

Typical Physical properties

Density (g/cm^3)	8.4
Electrical resistivity at 20℃($\Omega mm^2/m$)	1.09
Conductivity coefficient at 20℃ (WmK)	15

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FAX:+86-571-63256181 Web: www.ualloy.com
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Coefficient of thermal expansion	
Temperature	Coefficient of Thermal Expansion x10^{-6}/℃
20 ℃- 1000℃	18

Specific heat capacity	
Temperature	J/gK
20℃	0.46

Melting point (℃)	1400
Max continuous operating temperature in air (℃)	1200
Magnetic properties	non-magnetic

Temperature Factors Of Electrical Resistivity

20℃	100℃	200℃	300℃	400℃	600℃
1	1.006	1.012	1.018	1.025	1.018
700℃	800℃	900℃	1000℃	1100℃	1300℃
1.01	1.008	1.01	1.014	1.021	-

Style of supply

Alloys Name	Type	Dimension	
Ualloy109W	Wire	D= 0.03~8mm	
Ualloy109R	Ribbon	W= 0.4~40mm	T= 0.03~2.9mm
Ualloy109S	Strip	W= 8~250mm	T= 0.1~3.0
Ualloy109F	Foil	W= 6~120mm	T= 0.003~0.1
Ualloy109B	Bar	Dia= 8~100mm	L= 50~1000

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