

Heanjia Super metals Co., Ltd.

Nichrome / Nickel Chromium alloy

Product Applications: Resistance wire, strips and heating elements; making screen and mesh.

Nichrome / Nickel Chromium alloy Products' Properties:

Nichrome/Nickel chromium Ni20Cr80:		
Material property	Value	Units
Magnetic Attraction	None	
Modulus of elasticity	2.2×10^{11}	Pa
Specific gravity	8.4	None
Density	8400	kg/m ³
Melting point	1400	°C
Electrical resistivity at room temperature	1.0×10^{-6} to 1.5×10^{-6}	Ωm
Specific heat	450	Jkg ⁻¹ °C ⁻¹
Thermal conductivity	11.3	Wm ⁻¹ °C ⁻¹
Thermal expansion (20°C to 100°C)	14×10^{-6}	°C ⁻¹
Temperature Coefficient of Resistivity (25°C to 100°C)	100	ppm/°C
Standard ambient temperature and pressure used unless otherwise noted.		

Nichrome/Nickel Chromium alloys Comparison:						
Material		Cr20Ni80	Cr30Ni70	Cr15Ni60	Cr20Ni35	Cr20Ni30
Component %	Ni	Remanent	Remanent	55.061.0	34.037.0	30.034.0
	Cr	20.023.0	28.031.0	15.018.0	18.021.0	18.021.0
	Fe	≤1.0	≤1.0	Remanent	Remanent	Remanent
Highest temperature		1200	1250	1150	1100	1100
Melting point		1400	1380	1390	1390	1390
Density g/cm3		8.4	8.1	8.2	7.9	7.9
Resistance ratio μΩ·m,20		1.09±0.05	1.18±0.05	1.11±0.05	1.04±0.05	1.04±0.05
Extend ratio %		≥20	≥20	≥20	≥20	≥20
Specific heat J/g.		0.44	0.461	0.494	0.5	0.5
coefficient of heat conductivity KJ/m.h		60.3	45.2	45.2	43.8	43.8
Wire expand coefficient a×10-6/201000		18	17	17	19	19
Micro-organization		Austenite	Austenite	Austenite	Austenite	Austenite
Magnetism		Non-magnetism	Non-magnetism	Non-magnetism	Non-magnetism	Non-magnetism