



OHMALLOY MATERIAL CO.,LTD
SHANGHAI, CHINA

OhmAlloy049 (Resistance heating wire and resistance wire)
 CommonName:CuNi45,NC50,Cuprothal,Alloy294,NicoMWS-294
 Cupron, Copel, Alloy 45, Neutrology, Advance, CuNi 102, Cu-Ni
 44, Konstantan,constantan.)
 OhmAlloy049 is a copper-nickel alloy (Cu56Ni44 alloy)
 characterized by high electrical resistance, high ductility and
 good corrosion resistance. It is suitable for use at temperatures
 up to 400°C Typical applications for OhmAlloy49 are
 temperature-stable potentiometers, industrial rheostats and
 electric motor starter resistances.The combination of negligible
 temperature coefficient and high resistivity makes the alloy
 particularly suitable for the winding of precision resistors.

OhmAlloy049 is manufactured from electrolytic copper and
 pure nickel. In finer wire sizes the alloy is designated as
 OhmAlloy49TC(Thermocouple).

Normal composition%

Nickel	45
Copper	Bal
Manganese	1

Typical Mechanical properties (1.0mm)

Yield Strength	Tensile Strength	Elongation
Mpa	Mpa	%
250	420	25

Typical Physical properties

Density(g/cm)	8.9
Electrical resistivity at20 (Ωmm ² /m)	0.49
Temperature factor of resistivity (20°C~600°C) X10-5/°C	<10
Conductivity coefficient at	23

20°C (WmK)	
EMF vs Cu(μV/°C)(0~100°C)	-43

Coefficient of thermal expansion

Temperature	Thermal Expansion x10-6/K
20 °C- 400°C	15

Specific heat capacity

Temperature	20°C
J/gK	0.41
Melting Point (°C)	1280
Max continuous operating temperature in air (°C)	400
Magnetic properties	non-magnetic

Corrosion resistance performance

Working in atmosphere at 200	good
Air and oxygen contain Gases	good
gases with Nitrogen	good
gases with sulfur oxidability	good
gases with sulfur oxidability	bad
carburization	good

Style of supply

Alloys Name	Type	Dimension
OhmAlloy049W	Wire	D=0.06mm~8mm
OhmAlloy049R	Ribbon	W=0.4~40mm T=0.05~2.9m
OhmAlloy049S	Strip	W=8~200mm T=0.1~3.0
OhmAlloy049F	Foil	W=6~120mm T=0.005~0.1
OhmAlloy049B	Bar	Dia=8~100mm L=50~1000

