Technical datasheet — Niclal 43 / CuMn12Ni4

Niclal 43 is a precision resistance alloy with moderate resistivity. It possesses high stability of electrical properties and compared to copper it has a low temperature coefficient of resistance and low thermal EMF.

It is highly workable and fabricable and has excellent weldability.

Available products

Form	Diameter (mm)	Thickness (mm)	Width (mm)	Length (mm)
Wire (annealed temper)	0.8 to 14.0			
Rods (1/4 hard temper)	1.0 to 19.0			
Strip		0.08 to 3.50	3 to 380	
Cut to length		0.25 to 3.50	20 to 380	500 to 3500

Chemical composition (%)

Mn	Ni	Cu
12	4	Balance

Physical properties

Density, g/cm^3	8.76
Thermal conductivity at 20°C, W/m.K	22
Coefficient of expansion at 20°C (x10^{-6}/°C)	18
Electrical resistivity at 20°C, µΩ.cm	43
Temperature coefficient of resistance -20°C - +150°C, ppm/°C	+/- 15
Thermo EMF against copper at 20°C, µV/°C	-0.98

Applications

Precision resistors
Electrical shunts in electricity meter
Electrical shunts in DC ammeters