



## Alloy : CN49 (Copper Nickel Resistance Wire Type 49)

《TM : Advance • Constantan • Eurika》

### Characteristic

Outstanding resistance to corrosion and can be operated to 400°C  
 Non magnetic have excellent temperature coefficient of resistance.  
 Can be drawn to very thin file to foil type.  
 Suitable for precision resistor, shunt resistor application.

JIS	JIS Code	Electrical Resistivity [ $\mu\Omega\text{m}$ ]	Average TCR [ $\times 10^{-6}/^{\circ}\text{C}$ ]
GCN49	C 2532	$0.49 \pm 0.03$	* $\pm 40$ (23~100°C)

注 (\*) 参考値

Thermal expansion coefficient $\times 10^{-6}/^{\circ}\text{C}$	Specific heat J/g · K (20°C)	Thermal Conductivity w/m · K	Density g/cm <sup>3</sup> (20°C)	Melting Point °C	Max operating temperature °C
13.5	0.41	23	8.9	1290	400

Chemical composition	Mn	Ni	Cu+Ni+Mn
(%)	0.5~2.5	42~48	$\geq 99$

Alloys	Type	Dimension (mm)	
CN49W	Wire	$\phi 6.00 \sim 0.025$	
CN49R	Ribbon	t=2.90~0.05	w=40~0.4
CN49P	Plate	Pls consult	
CN49	Foil	t=0.40~0.02	w=120~5

## Copper Nickel Resistance Wire **[Resistance • Length • Weight]**

Alloys CN49W	Resistivity (23°C μΩm) 0.49±0.03
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Diameter (mm)	Tolerance (mm)	Cross section (mm <sup>2</sup> )	Resistance Tolerance (%)	DC Resistance (Ω/m)	Length (m/Kg)	Weight (g/m)
<b>6.00</b>	±0.080	28.27	±5	<b>0.0173</b>	3.97	252
<b>5.50</b>	±0.063	23.76	±5	<b>0.0206</b>	4.73	211
<b>5.00</b>	±0.063	19.64	±5	<b>0.0250</b>	5.72	175
<b>4.50</b>	±0.063	15.90	±5	<b>0.0308</b>	7.06	142
<b>4.00</b>	±0.063	12.57	±5	<b>0.0390</b>	8.94	112
<b>3.50</b>	±0.050	9.621	±5	<b>0.0509</b>	11.7	85.6
<b>3.20</b>	±0.050	8.042	±5	<b>0.0609</b>	14.0	71.6
<b>2.90</b>	±0.050	6.605	±5	<b>0.0742</b>	17.0	58.8
<b>2.60</b>	±0.040	5.309	±5	<b>0.0923</b>	21.2	47.3
<b>2.30</b>	±0.040	4.155	±5	<b>0.118</b>	27.0	37.0
<b>2.00</b>	±0.040	3.142	±5	<b>0.156</b>	35.8	28.0
<b>1.80</b>	±0.040	2.545	±5	<b>0.193</b>	44.2	22.6
<b>1.60</b>	±0.032	2.011	±5	<b>0.244</b>	55.9	17.9
<b>1.50</b>	±0.032	1.767	±5	<b>0.277</b>	63.6	15.7
<b>1.40</b>	±0.032	1.539	±5	<b>0.318</b>	73.0	13.7
<b>1.30</b>	±0.032	1.327	±5	<b>0.369</b>	84.7	11.8
<b>1.20</b>	±0.025	1.131	±5	<b>0.433</b>	99.3	10.1
<b>1.10</b>	±0.025	0.9503	±6	<b>0.516</b>	118	8.46
<b>1.00</b>	±0.025	0.7854	±6	<b>0.624</b>	143	6.99
<b>0.90</b>	±0.025	0.6362	±6	<b>0.770</b>	177	5.66
<b>0.85</b>	±0.025	0.5675	±6	<b>0.864</b>	198	5.05
<b>0.80</b>	±0.020	0.5027	±6	<b>0.975</b>	224	4.47
<b>0.75</b>	±0.020	0.4418	±6	<b>1.11</b>	254	3.93
<b>0.70</b>	±0.020	0.3848	±6	<b>1.27</b>	292	3.43
<b>0.65</b>	±0.020	0.3318	±6	<b>1.48</b>	339	2.95
<b>0.60</b>	±0.020	0.2827	±6	<b>1.73</b>	397	2.52
<b>0.55</b>	±0.016	0.2376	±7	<b>2.06</b>	473	2.11
<b>0.50</b>	±0.016	0.1964	±7	<b>2.50</b>	572	1.75
<b>0.45</b>	±0.016	0.1590	±7	<b>3.08</b>	706	1.42
<b>0.40</b>	±0.016	0.1257	±7	<b>3.90</b>	894	1.12

