

# Resistance Heating Wire Nickel-Chromium Alloy 80% Nickel/20% Chromium

- ✓ Withstands High Temperatures up to 1150°C (2100°F)
- ✓ Quick Heating, Long Life
- ✓ Corrosion Resistant
- ✓ Used to Make Straight or Helical Coil Resistance Heaters
- ✓ Convenient 15 m and 60 m Spools Available

OMEGA® NIC80 wire is a resistance heating wire comprised of 80% Nickel and 20% Chromium. NIC80 wire is commonly used as a resistor at elevated temperatures. NI/CR-80/20 is essential for resistor elements in high temperature applications such as electric furnaces, electric ranges and radiant heaters operating at temperatures up to 1150°C (2100°F).

In addition to these qualities and standard uses, it has found wide application in technical applications due to its combination of high electrical resistance and its temperature coefficient of resistance much less than that of Nickel-Chrome 60.



See Page G-39  
for Coiled  
Resistance Wire

## Specifications

**Composition:** 80% Ni, 20% Cr

**Specific Resistance:**

650 Ohms per circular mil-foot at 20°C (68°F). See table below for multiplication factors to obtain resistance at other temperatures.

**Specific Gravity:** 8.41

**Density:** 8.4g/cm<sup>3</sup>

**Melting Point:** approx.  
1400°C (2550°F)

**Nominal Coefficient of Linear Expansion:** 0.000017 (10-1000°C)

**Tensile Strength (Kg/cm<sup>2</sup>) 20°C:**

Hard Drawn: 14,060

Soft Annealed: 7,030

**Nominal Temperature**

**Coefficient of Resistance:**

0.00011 Ohms/Ohm/°C (20-500°C)

**Factor by Which Resistance at Room Temperature Is to Be Multiplied to Obtain Resistance at Indicated Temperatures**  
(These figures are given as a basis for engineering calculations and represent average material as supplied.)

Temp. °F	68	200	400	600	800	1000	1200	1400	1600	1800	2000°F
Temp. °C	20	93	204	315	427	538	649	760	871	982	1093°C
Factor	1.000	1.016	1.037	1.054	1.066	1.070	1.064	1.062	1.066	1.072	1.078

**To Order (Specify Model Number)**

**IN STOCK FOR FAST DELIVERY!**

AWG	Dia. mm	Ohms per 30cm @ 20°C (68°F)	Current Temperature Characteristics* °C (°F)						Model No.	Price	
			425 (800)	550 (1000)	650 (1200)	750 (1400)	875 (1600)	1100 (2000)		15 m	60 m
18	1 (.040)	.4062	8.32	10.17	12.48	15.11	18.06	24.03	NI80-040-(†)	£17.25	£52.00
20	.8 (.032)	.6348	6.17	7.56	9.24	11.13	13.23	17.57	NI80-032-(†)	13.00	39.50
22	.64(.0253)	1.015	4.62	5.62	6.85	8.20	9.69	12.85	NI80-025-(†)	13.00	39.50
24	.5 (.0201)	1.609	3.46	4.18	5.06	6.04	7.10	9.40	NI80-020-(†)	13.00	39.50
26	.4 (.0159)	2.571	2.62	3.12	3.76	4.49	5.27	6.90	NI80-015-(†)	8.20	24.50
28	.3 (.0126)	4.094	1.98	2.38	2.84	3.37	3.93	5.09	NI80-012-(†)	8.20	24.50
30	.25 (.010)	6.50	1.50	1.81	2.14	2.53	2.93	3.75	NI80-010-(†)	8.20	24.50

\* Showing approximate amperes necessary to produce a given temperature, applying only to a straight wire stretched horizontally in free air.  
**Note:** This wire is **not** intended for use in making thermocouple elements. † Specify desired length in metres: 15m or 60m  
**Ordering Example:** NI80-040-15m is a 15 m spool of 1.0mm bare wire, £17.25.

