

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 (50') and 60 m (200') Spools Available



Shown larger than actual size

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.

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: 0.304 lb/in³

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

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

Tensile Strength (lb/in²) at 20°C (68°F):

Hard Drawn: 200,000

Soft Annealed: 100,000

Nominal Temperature

Coefficient of Resistance: 0.00011 Ohms/Ohm/°C (20 to 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. °C	20	93	204	315	427	538	649	760	871	982	1093°C
Temp. °F	68	200	400	600	800	1000	1200	1400	1600	1800	2000°F
Factor	1.000	1.016	1.037	1.054	1.066	1.070	1.064	1.062	1.066	1.072	1.078

ALL MODELS AVAILABLE FOR FAST DELIVERY!

To Order (Specify Model Number)

AWG	Dia. mm (1")	Ohms per ft @ 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 (50')	60 m (200')
18	1.0 (0.040)	0.4062	8.32	10.17	12.48	15.11	18.06	24.03	NI80-040-(†)	\$21	\$63
20	0.81 (0.032)	0.6348	6.17	7.56	9.24	11.13	13.23	17.57	NI80-032-(†)	16	48
22	0.64 (0.0253)	1.015	4.62	5.62	6.85	8.20	9.69	12.85	NI80-025-(†)	16	48
24	0.51 (0.0201)	1.609	3.46	4.18	5.06	6.04	7.10	9.40	NI80-020-(†)	16	48
26	0.40 (0.0159)	2.571	2.62	3.12	3.76	4.49	5.27	6.90	NI80-015-(†)	10	30
28	0.32 (0.0126)	4.094	1.98	2.38	2.84	3.37	3.93	5.09	NI80-012-(†)	10	30
30	0.25 (0.010)	6.50	1.50	1.81	2.14	2.53	2.93	3.75	NI80-010-(†)	10	30

* Showing approximate amperes necessary to produce a given temperature, applying only to a straight wire stretched horizontally in free air.

† Specify desired length in feet: 50 or 200. Note: This wire is not intended for use in making thermocouple elements.

Ordering Example: NI80-032-50 is a 15 m (50') spool of 20 gage bare wire, \$16.



UNITED STATES

www.omega.com
1-800-TC-OMEGA
Stamford, CT.

CANADA

www.omega.ca
Laval(Quebec)
1-800-TC-OMEGA

GERMANY

www.omega.de
Deckenpfronn, Germany
0800-8266342

UNITED KINGDOM

www.omega.co.uk
Manchester, England
0800-488-488

FRANCE

www.omega.fr
Guyancourt, France
088-466-342

CZECH REPUBLIC

www.omegaeng.cz
Karviná, Czech Republic
596-311-899

BENELUX

www.omega.nl
Amstelveen, NL
0800-099-33-44



More than 100,000 Products Available!

• Temperature

Calibrators, Connectors, General Test and Measurement Instruments, Glass Bulb Thermometers, Handheld Instruments for Temperature Measurement, Ice Point References, Indicating Labels, Crayons, Cements and Lacquers, Infrared Temperature Measurement Instruments, Recorders Relative Humidity Measurement Instruments, RTD Probes, Elements and Assemblies, Temperature & Process Meters, Timers and Counters, Temperature and Process Controllers and Power Switching Devices, Thermistor Elements, Probes and Assemblies, Thermocouples Thermowells and Head and Well Assemblies, Transmitters, Wire

• Flow and Level

Air Velocity Indicators, Doppler Flowmeters, Level Measurement, Magnetic Flowmeters, Mass Flowmeters, Pitot Tubes, Pumps, Rotameters, Turbine and Paddle Wheel Flowmeters, Ultrasonic Flowmeters, Valves, Variable Area Flowmeters, Vortex Shedding Flowmeters

• pH and Conductivity

Conductivity Instrumentation, Dissolved Oxygen Instrumentation, Environmental Instrumentation, pH Electrodes and Instruments, Water and Soil Analysis Instrumentation

• Data Acquisition

Auto-Dialers and Alarm Monitoring Systems, Communication Products and Converters, Data Acquisition and Analysis Software, Data Loggers Plug-in Cards, Signal Conditioners, USB, RS232, RS485 and Parallel Port Data Acquisition Systems, Wireless Transmitters and Receivers

• Pressure, Strain and Force

Displacement Transducers, Dynamic Measurement Force Sensors, Instrumentation for Pressure and Strain Measurements, Load Cells, Pressure Gauges, Pressure Reference Section, Pressure Switches, Pressure Transducers, Proximity Transducers, Regulators, Strain Gages, Torque Transducers, Valves

• Heaters

Band Heaters, Cartridge Heaters, Circulation Heaters, Comfort Heaters, Controllers, Meters and Switching Devices, Flexible Heaters, General Test and Measurement Instruments, Heater Hook-up Wire, Heating Cable Systems, Immersion Heaters, Process Air and Duct, Heaters, Radiant Heaters, Strip Heaters, Tubular Heaters